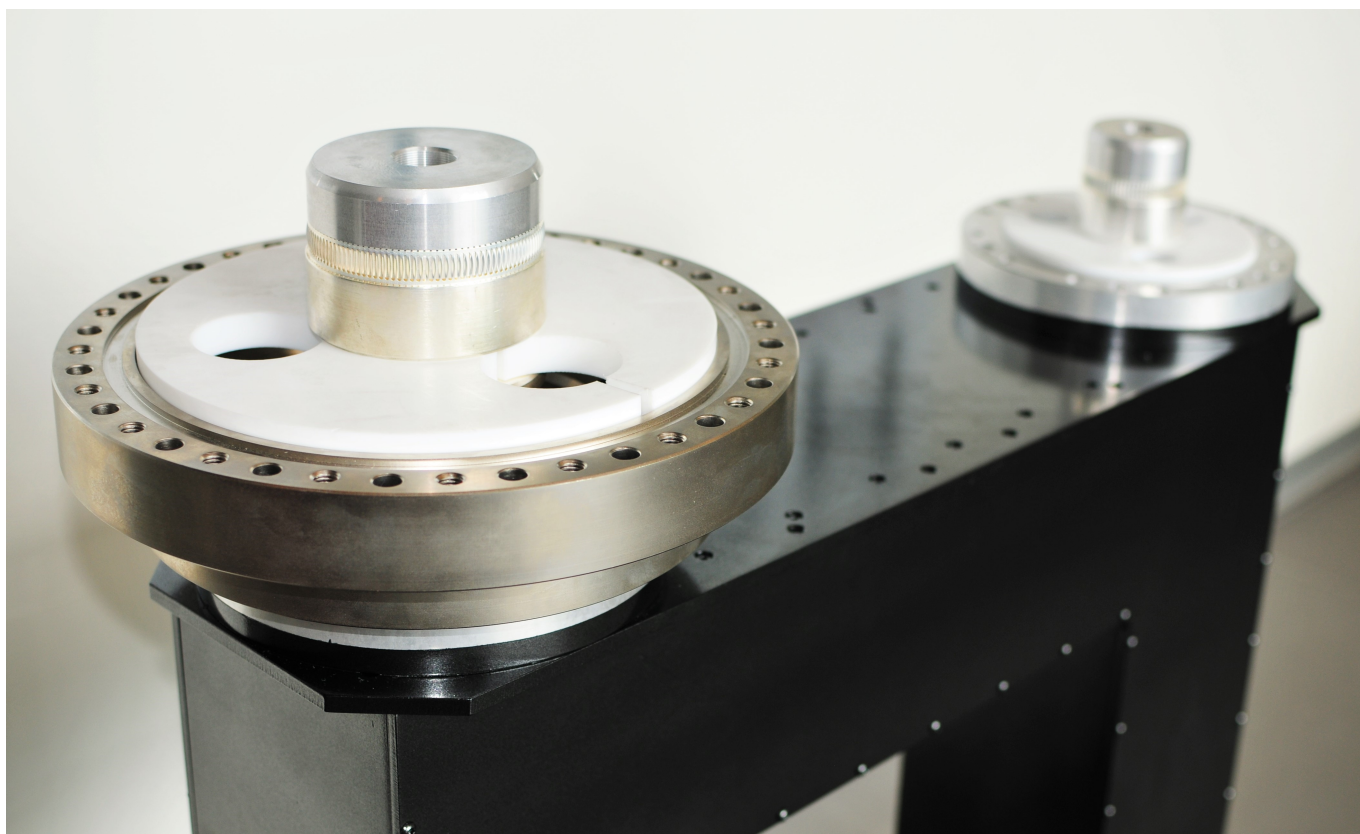


## PRODUCT CATALOG

Industrial, Scientific, and Medical RF Components

Edition 1.0



Product specifications, descriptions, and drawings  
are proprietary, and subject to change without prior notice

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Printed in Italy  
May 2017  
Edition 1.0  
Design by *DYN*



## Company & Product Range



COM-TECH is an Italian leading company designing and developing high-end RF passive components. COM-TECH has become a reference worldwide, having supplied products and services to Customers in more than 50 Countries.

COM-TECH key distinctive factors are: Innovation, Reliability, Performance, Flexibility

The Broadcast business area covers the UHF, VHF B.III, VHF B.I-II, FM frequency ranges for the following applications:

- Digital (DVB-T, ATSC, ISDB-T) and Analog Broadcast TV
- Digital (DAB, T-DMB) and Analog (FM) Broadcast Radio

The Industrial, Scientific and Medical business area covers the 50 - 2.500 MHz frequency range for the following applications:

- Particle Accelerators
- Internet of Things
- Microwave Communications
- Transport Networks
- ATC (Radio communication for Air Traffic Control)
- PMR (Professional Mobile Radio, Analog and Digital)
- Weather and Hydrological Monitoring

COM-TECH production range comprehends four main product families:

- **Filters:** Bandpass Filters for Broadcast TV and Radio Transmitters
- **Combiners:** Channel Combiners for Broadcast TV and Radio Stations
- **Components:** RF Components for Broadcast Transmitters and ISM Applications (Hybrid Couplers, Multicouplers, Patch Panels, Directional Couplers, Dry Loads)
- **Connections:** RF Connections for Broadcast and ISM Applications (Rigid Lines, Connectors, Flanges, Elbows, Adapters, and Accessories)



## Service & Quality



**10**  
Year  
Warranty

### Service & Warranty

COM-TECH grants the fastest delivery terms in the market, thanks to a stock-oriented production process. COM-TECH offers a complete Service, including site survey, installation, commissioning, maintenance, on-site retuning, and tuning trainings.

COM-TECH passive components are guaranteed for 10 years.  
Active components are guaranteed for 2 years.

See *Warranty Conditions on COM-TECH website for details.*

**RoHS**  
Compliant  
2011/65/EC

**BeO**  
Free

### RoHS Compliancy, BeO Free

COM-TECH supports the European Union's efforts to remove harmful chemicals from consumer electronics.

COM-TECH products are compliant with Directive 2011/65/EC of the European Parliament and the Council of the European Union regarding the restriction of the use of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated biphenyl ether (PBD) flame retardants.

COM-TECH is taking an extra effort by making all its products Beryllium Oxide free, in accordance with the directive 2003/36/EC, which has classified Beryllium Oxide as "Carcinogenic", and has thereof restricted its use and imposed safety rules in processing it.



### Quality, Environment, Health and Safety

COM-TECH has established and maintains the following certified and documented Systems:

- UNI EN ISO 9001:2008 - Quality Management
- UNI EN ISO 14001 - Environmental Management
- BS OHSAS 18001:2007 - Occupational Health and Safety

to ensure that:

- Products and Services offered comply with the requirements specified and defined in the contract with the customer, and maintain expectations
- Production processes are defined and managed in order to prevent pollution as far as possible
- Production processes are defined and managed in order to guarantee a safe workplace for the employees, customers, suppliers, and visitors.

# History & Innovation

COM-TECH products have set new benchmarks in the broadcast industry, introducing brand new techniques and world first innovations:

<b>Microteco Snc</b> founded by ing. Daniele Valenti	<b>1990</b>	<b>TV Manifold Combiner</b> World first Broadcast TV Combiner with Manifold technique (MPX3L)
Microteco changes name and company type into <b>COM-TECH Srl</b> (Private Limited Company)	<b>1992</b>	
	<b>1998</b>	<b>DAB Filter</b> COM-TECH first DAB Filter (CL6NVDAB)
First company in Italy to purchase <b>CST Microwave Studio</b>  <b>ISO 9001</b> Certification	<b>2000</b>	
First exhibition at <b>IBC</b> (Amsterdam)	<b>2001</b>	<b>Elliptical Response</b> World first Broadcast TV Bandpass Filter with Elliptical Response technique (TC4E120L)  <b>Interdigital Hairpin Design</b> COM-TECH ultra-compact <i>Interdigital Hairpin</i> Design VHF B.I-II Bandpass Filter
<b>New Premises</b> (Via Industria 7, Morbegno)	<b>2003</b>	<b>DualCross</b> World first Broadcast TV Bandpass Filter with Double Cross-Coupling technique (TC6E120C)
	<b>2004</b>	<b>XLine</b> World first Broadcast TV Bandpass Filter with Extracted-Pole technique (CL6X30C)
	<b>2005</b>	<b>MultiStep</b> International patent application for world first Ultra-Flat response UHF TV Hybrid Coupler (TH100C)  <b>200mm Cavity Filter</b> World first TV Bandpass Filter with 200 mm cavity size (TC4E200C)
	<b>2006</b>	<b>BeO-Free Dry Load</b> World first Broadcast TV BeO-Free Dry Load (DL3000C)  <b>Multicouplers</b> COM-TECH first introduction of Multicouplers and Splitters  <b>DF Series</b> World first Balanced Combiner with <i>MultiStep</i> Hybrid Couplers
	<b>2007</b>	<b>Liquid Cooling</b> COM-TECH first introduction of Liquid Cooling on Bandpass Filters
	<b>2009</b>	<b>Accuprobe</b> World first Directional Coupler with fully Equalized Probes (DC4A23)
<b>COM-TECH do Brasil</b> established	<b>2011</b>	
COM-TECH Srl changes name and company type into <b>COM-TECH Italia SpA</b> (Public Limited Company)  <b>ISO 14001</b> Certification	<b>2012</b>	<b>Forced Air Cooling</b> World first integrated Air Cooling System on a Broadcast TV Filter
	<b>2013</b>	<b>TF Series</b> COM-TECH novel and unique ultra-compact UHF Bandpass Filters  <b>NH Series</b> COM-TECH innovative and proprietary UHF <i>MultiStep</i> Hybrid Couplers
<b>New Premises</b> (Via Artigianato 9, Morbegno)	<b>2014</b>	<b>FM Manifold Combiner</b> World first FM Combiner with Manifold technique (ME3P120F)
	<b>2015</b>	<b>TS Series</b> COM-TECH innovative and ultra-compact VHF B.III Filter
<b>BS OHSAS 18001</b> Certification	<b>2016</b>	<b>MH Series</b> COM-TECH innovative Progressive Multicoupler

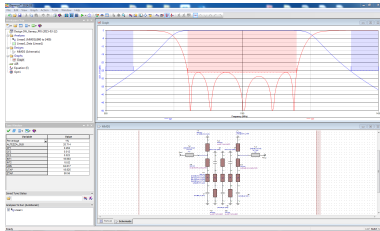
# Design & Workflow

COM-TECH products are designed with state-of-the-art techniques, engineered with the most innovative development tools, and realized with cutting-edge manufacturing technology, in order to deliver the most advanced performances with the highest level of reliability:

- Highest voltage safety margins for maximum reliability
- Lowest insertion loss for optimum efficiency
- Highest power handling over the physical dimension, for maximum compactness
- Rugged construction for maximum mechanical stability, durability, and immunity to transportation shocks

Since the beginning COM-TECH has made extensive use of Computer Aided Engineering (CAE), and has been amongst the first to adopt 3D EM and Fluid Dynamic simulation, coupled with the most advanced Optimization tools.

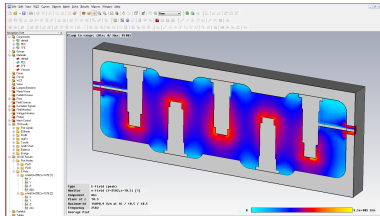
COM-TECH's development workflow:



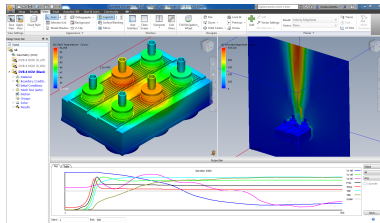
## 1. Exact Circuit Synthesis, Analysis and Optimization



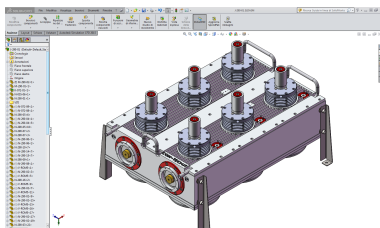
**Agilent Technologies**



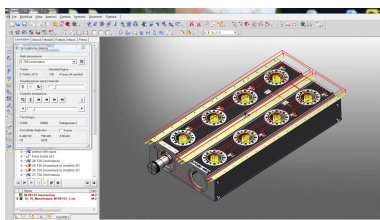
## 2. Distributed Synthesis, 3D EM Modeling and Analysis, and Multi-Objective Optimization



## 3. 3D Fluid Dynamic Modelling



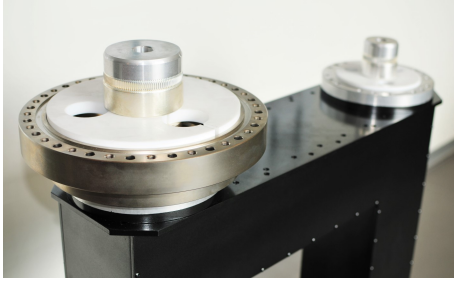
## 5. 3D CAD



## 6. CAD-CAM Machining



# Industrial, Scientific, Medical Applications



## Particle Accelerators

COM-TECH designs, develops and manufactures RF passive components for the RF power sources used in Particle Accelerators (Linear, Synchrotrons, Cyclotrons...):

The product range includes:

- Power Amplifiers Combinations Systems (to combine several Power Amplifiers)
- High Power Couplers (to combine several RF Sources)
- Rigid Lines and Rigid Line Connections
- Directional Couplers
- Impedance Transformers, Matchers, and Phase Shifters
- Loads

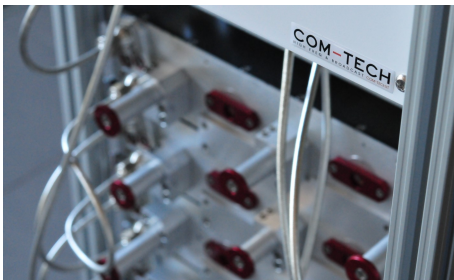


## Internet of Things (IoT)

COM-TECH designs, develops and manufactures RF passive components for Internet of Things applications.

The product range includes:

- Filters
- Connections
- Directional Couplers



## Industry, Communication and Misc

COM-TECH designs, develops and manufactures RF passive components for different Industry fields:

- Microwave Radio Links (Filters and Components)
- Transport (Branching systems to combine Broadcast Radio, Social and Security Communications on road networks)
- ATC (Radio communication for Air Traffic Control)
- PMR (Professional Mobile Radio, Analog and Digital)
- Power and Transmission Measurement
- Weather and Hydrological Monitoring



# Features & Techniques



## Full Band Tunability

COM-TECH Filters and Combiners are designed to be easily and completely tunable:

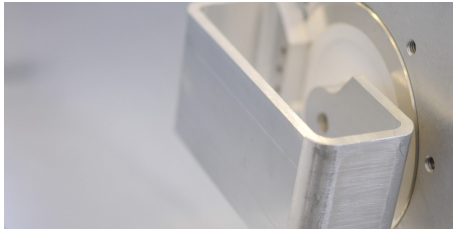
- Fully tunable all over their operating band
- Tunable in accordance to all worldwide standards, channel widths and regulation masks
- Customizable Tunings in accordance with Customer specifications
- Designed to be easily tuned (Tuning Instructions available on request)
- Engineered to be tuned with a standardized set of tools (Tuning Toolbox available on request)



## Temperature Stabilization

COM-TECH Filters and Combiners feature a state-of-the-art Temperature Stabilization, achieved through:

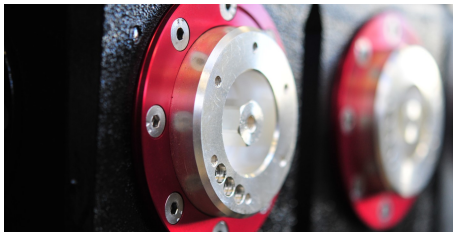
- Innovative interactive CAE design (3D EM and Fluid Dynamic simulation)
- Accurate choice of materials
- Environmental and laboratory tests



## DC Short

COM-TECH Filters and Combiners have a built-in lightning protection:

- Solid DC Short Circuit towards ground on the input/output couplings
- No Open Circuits, in order to avoid dangerous charge accumulations
- Full protection towards the antenna side

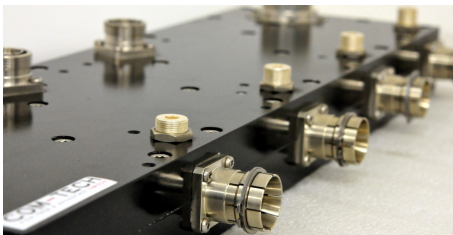


## Interchangeable Connector System

COM-TECH products feature an interchangeable and modular connector system, based on unified mounting panels.

Each panel accept different connectors, allowing a wide choice of connections to be mounted on the same product:

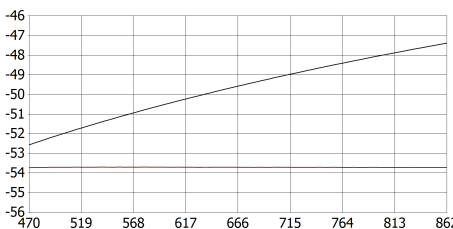
- Panel sizes: 25 mm, 32 mm, 64 mm, 100 mm, 130 mm, and 150 mm
- Wide choice of connectors available on each product
- Easy connector change



## Unified Connector Spacing

COM-TECH Unified Connector Spacing, available on most Hybrid Couplers (HC, HF, NH Series) and Multicouplers (MC, MH Series) provides input connectors exactly spaced by a multiple of Rack Units:

- 2U, 3U, 3.5U, 4U, 5U, 6U, and 9U (400 mm) spacings available
- Direct plug-in into Power Amplifiers (Quick Plug Connectors available)
- Wider and optimized choice of Input and Output Hybrid Couplers on Balanced Combiners

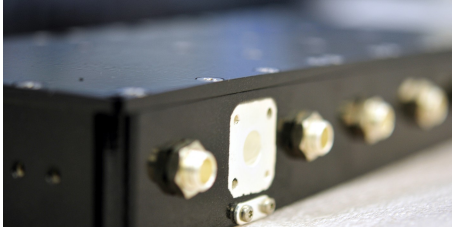


## Accuprobe: Equalized Response Probes

COM-TECH exclusive and proprietary equalization technique, available on Directional Couplers (DC Series):

- Accurate coupling level equalization (typical flatness:  $\pm 0.05$  dB).
- Easily interchangeable SMA or N Female Probes (UHF, VHF B, III, B.I-II, FM, Non Equalized)
- Transmitters: enhanced wideband agility; channel changes do not affect the measured level
- Combiners: measured output level constant for every channel; frequency correction table not required

# Interchangeable Connector System



## 25 mm Panel

Native panel for N connections, extends up to 7-16 connections

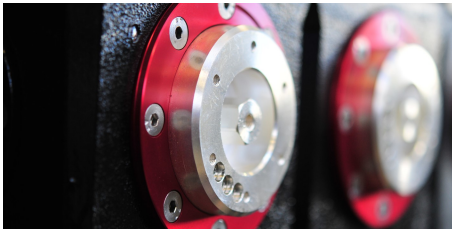
Code	Connection
C, C3	N Female, Angular Female
D	N Male
E	7-16 Female
F	7-16 Male



## 32 mm Panel

Native panel for 7-16 and 7/8" connections, extends up to 1+5/8" connections and down to N

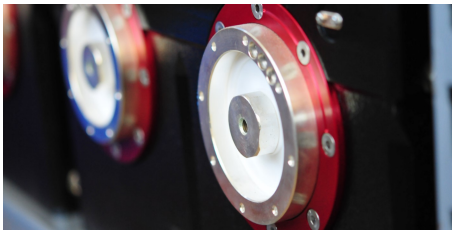
Code	Connection
C; D	N Female; N Male
E; F	7-16 Female; 7-16 Male
G, G1, G2	7/8", WX-20D Socket
H, H1	7/8" EIA Flange
I, I0, I1, I2	7/8", WX-20D Plug, 7/8" Quick Plug
J, J1, J2	1+5/8", WX-39D Socket
K, K1	1+5/8" EIA Flange



## 64 mm Panel

Native panel for 1+5/8" connections, extends up to 3+1/8" connections and down to all smaller connections

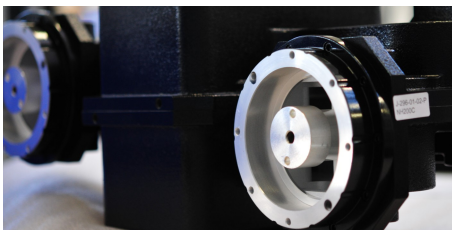
Code	Connection
J, J1, J2	1+5/8", WX-39D Socket
K, K1	1+5/8" EIA Flange
L, L1, L2	1+5/8", WX-39D Plug
M, M1, M2	3+1/8", NAX-77D Socket
N, N1	3+1/8" EIA Flange



## 100 mm Panel

Native panel for 3+1/8" connections, extends up to 4+1/2" connections and down to all smaller connections

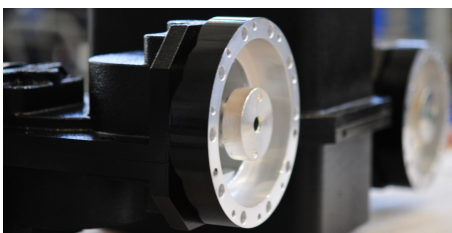
Code	Connection
M, M1, M2, M4	3+1/8", NAX-77D, WX-77D, Socket
N, N1	3+1/8" EIA Flange
O, O1, O2, O4	3+1/8", NAX-77D, WX-77D, Plug
P	4+1/2" Socket
Q	4+1/2" Flange



## 130 mm Panel

Native panel for 4+1/2" connections, extends up to RL-120 connections and down to all smaller connections

Code	Connection
P, P2	4+1/2", WX-103D Socket
Q	4+1/2" Flange
R	4+1/2" Plug
S	RL-120 Socket
X	RL-120 Flange



## 150 mm Panel

Native panel for RL-120 and 6+1/8" connections, extends down to all smaller connections

Code	Connection
S	RL-120 Socket
X	RL-120 Flange
T	RL-120 Plug
U	6+1/8" Socket
V	6+1/8" Flange
W	6+1/8" Plug



# Power Ratings & Environmental Conditions



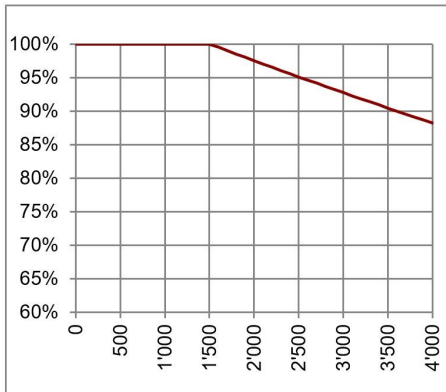
## Power Ratings

Power ratings reported in the datasheets refer to the following standard operating conditions:

- Altitude: below 1.500 m (4.900 ft.). (See Altitude Thermal Derating)
- Free air, no enclosures (e.g. Racks), no obstructions to natural air convection
- Heat Sinks: Fins in vertical position, and no obstructions to air flow
- Standard Environmental Conditions (see Environmental Conditions)
- Body temperature below the maximum operating value (See Product Datasheet)

### Note:

- *Specific calculations need to be carried out to determine the effective power rating in case one or more of the previous conditions are not met*



## Altitude Thermal Derating

Power ratings for COM-TECH Components refer to a maximum altitude of 1.500 m (4.900 ft.). When installed at higher altitudes, power ratings must be reduced according to the following table:

Altitude	Relative Power
0-1.500 m (4.900 ft.)	100%
2.000 m (6.500 ft.)	97.5%
2.500 m (8.200 ft.)	95.1%
3.000 m (9.800 ft.)	92.8%
3.500 m (11.400 ft.)	90.5%
4.000 m (13.000 ft.)	88.2%
4.500 m (14.700 ft.)	86.0%
5.000 m (16.400 ft.)	83.9%

### Notes:

- *The above derating is related to the decreased thermal dissipation of rarified air. Filters and Combiners may undergo an additional power reduction due to voltage safety factors. This reduction depends on the design and the cooling technique (typically Forced Air Cooling and Liquid Cooling)*



## Environmental Conditions

COM-TECH components withstand to the following Operational, Transport, and Storage conditions:

### Operational Conditions:

- ETSI EN 300 019-1-3 V.2.4.1 (2014-04), Class 3.1, Normal Conditions
- Maximum Operating Temperature: see Product Datasheet

### Transport Conditions:

- ETSI EN 300 019-1-2 V.2.2.1 (2014-04), Class 2.2

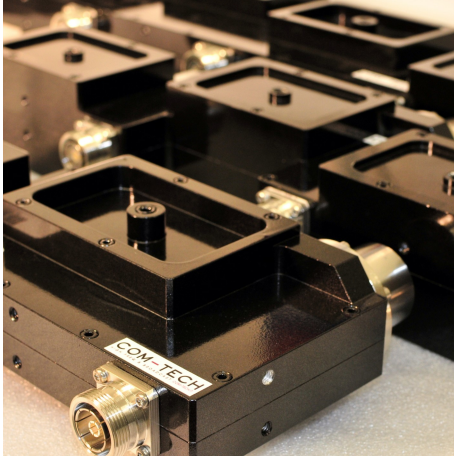
### Storage Conditions:

- ETSI EN 300 019-1-1 V.2.2.1 (2014-04), Class 1.1

### Notes:

- *COM-TECH products are designed for indoor use, and are not waterproof. Maximum attention should be carried out to prevent contact with water, especially during transportation and installation*

# Power Amplifiers Combination Systems



## Power Combination Solutions

COM-TECH proprietary and complete solutions, offering practical and efficient components to drive and combine several Power Amplifiers, providing the maximum possible overall efficiency of the Transmitter.

### Techniques

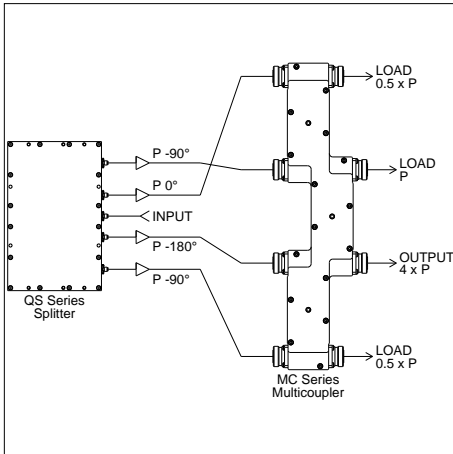
Two different systems, with different techniques, are available:

- Quadrature Power Combination System (MC Series Multicouplers and QS Series Splitters)
- Progressive Power Combination System (MH Series Multicouplers and SP Series Splitters)

### Components

Both systems include two main components:

- Multicoupler: sums the power of the Amplifiers, and can be conveniently plugged-in at the back of the Power Amplifiers themselves, thanks to the Unified Connector Spacing, which enables connectors to be spaced a multiple of Rack Units (2U, 3U, 3.5U...)  
In case of 2-way combination a simple Hybrid Coupler is used.
- Splitter: divides the power into the correct number of outputs, driving the Power Amplifiers with accurately balanced amplitudes and correct phases in order to be subsequently be re-combined by the Multicoupler with the highest possible efficiency



## Quadrature Power Combination System

This cost-effective system makes use of Quadrature Couplers and Splitters:

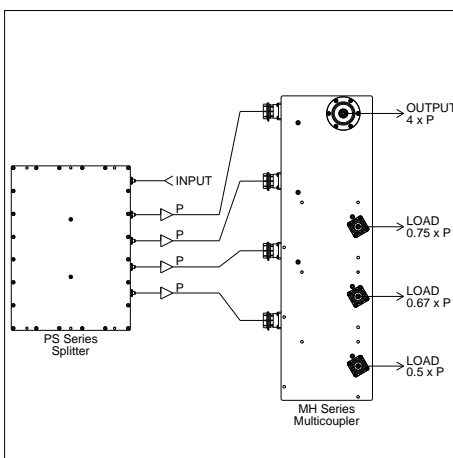
- 3, 4 and 5-way combinations available (2-way with a Hybrid Coupler)
- 3U and 3.5U Unified Connector Spacing
- Direct plug-in into Power Amplifiers (Quick Plug Connectors available)
- Cost effective solution
- Low and medium power
- Ideal for Air-Cooled transmitters

### MC Series Quadrature Multicouplers

- High Efficiency (Typical 99%, corresponding to 0.04 dB overall Insertion Loss)
- High Port Isolation (> 30 dB), allowing partial operation and hot replacement of amplifiers
- Phase Compensated Design (3-way and 5-way)

### QS Series Quadrature Splitters

- Outputs with proper phase and balanced amplitude levels, providing optimum amplifier performance
- 2, 4, and 8-way Splitters available; odd-numbered Splitters obtained by the even-numbered Splitters terminating the unused outputs



## Progressive Power Combination System

This innovative system makes use of Progressive Couplers and Splitters:

- 3, 4, 5, 6, 8, 10-way combinations available
- 2U and 3U Unified Connector Spacing
- Direct plug-in into Power Amplifiers (Quick Plug Connectors available)
- Integrated Liquid Cooled load (Option)
- High power
- Ideal for Liquid-Cooled transmitters

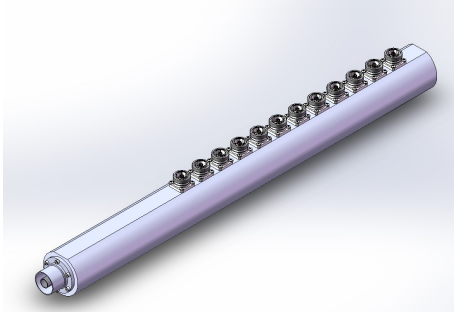
### MH Series Progressive Multicouplers

- High Efficiency (Typical 99%, corresponding to 0.04 dB overall Insertion Loss)
- High Port Isolation (> 30 dB), allowing partial operation and hot replacement of amplifiers

### PS Series Progressive Splitters

- Outputs with proper phase and equalized amplitude levels, providing optimum amplifier performance
- 3, 4 and 5-way Splitters available

# High Power Combination Techniques

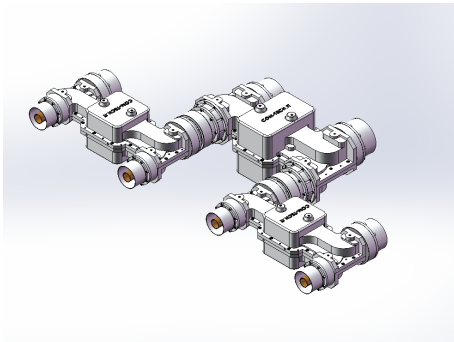


## Non-Isolated Combiners

The most simple technique to combine several amplifiers; the necessary isolation is normally provided by circulators at each input. Absorbing Loads are connected to the circulators. They can be designed for any number of inputs (typically up to 20 inputs), and according to different architectures (planar, linear, radial). Loads on circulators are all the same power.

COM-TECH can design and manufacture Non-Isolated combiners according to the custom requirements:

- Center Frequency: 100 MHz to 800 MHz
- Number of Ways: 2 to 20

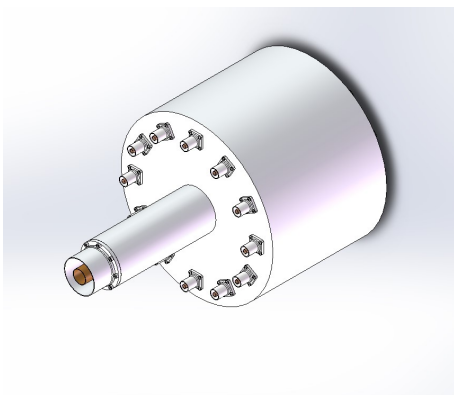


## Quadrature Combiners

Based on a cascade of Hybrid Couplers, they allow binary combinations (2, 4, 8 ...) of amplifiers. Balancing Loads provide high levels of isolation; load powers increase along the chain, the output load requirement is  $\frac{1}{4}$  of the output power.

COM-TECH can design and manufacture Quadrature combiners according to the custom requirements:

- Center Frequency: 100 MHz to 800 MHz
- Number of Ways: 2, 4, 8, 16



## Gysel Combiners

Isolated In-Phase power combiners, can be designed for virtually any number of inputs (practical realization up to 20 ways are possible). Balancing Loads are all the same power. Inputs are radially distributed, making the connections quite complicated.

COM-TECH can design and manufacture Gysel combiners according to the custom requirements:

- Center Frequency: 100 MHz to 800 MHz
- Number of Ways: 2 to 20

# FastLine Rigid Line System



## Range of Components

*FastLine*, COM-TECH proprietary Rigid Line system for indoor applications, comprehends a complete range of connections and components from 7/8" to 6+1/8", fully compliant with EIA and JEITA standards:

- Rigid Lines: 2m or 4m line lengths
- Elbows: with quick Plug or Flanged connections
- Junctions: quick direct connections between Rigid Lines
- Flanges: with extra threads for direct connection without using nuts
- Inner Connections: to connect Flanges
- Inner Supports: to support the inner conductor of the rigid line

Different Cutbacks (offset between the outer and inner conductor) are available:

- Flush (Zero) Cutback, for convenient and simple installations
- Recessed (Offset) Cutbacks, for compatibility with NAX/WX and legacy standards

Two different types of connections are available:

- COM-TECH Socket-Plug system for more compact, more efficient, faster and cheaper connections
- Traditional Flanged connections for full compatibility with all EIA systems



## Choice of Materials

*FastLine* has been developed with an innovative choice of materials:

- Inner conductor: Highly Conductive ETP Copper for low losses (as the Insertion Losses depends mainly on the inner conductor)
- Outer conductor: Highly Conductive Hardened Aluminium, for better mechanical properties (flexibility, and lightness) and cost reduction
- Optimal temperature compensation between Outer and Inner conductors: the highest temperature of the inner conductor is compensated by the lower coefficient of expansion of Copper
- Full galvanic compatibility between metals, as Copper is matched to Copper (or compatible metal, as silver plated copper alloy), whereas Aluminium is connected to Aluminium



## Connections Power Ratings

Power ratings for COM-TECH Connectors and *FastLine* Rigid Lines:

Connections	800 MHz		250 MHz		100 MHz	
N	500 W		950 W		1.4 kW	
7-16	2.0 kW		3.75 kW		5.5 kW	
	Default	Painted	Default	Painted	Default	Painted
7/8"	2.0 kW	2.5 kW	3.75 kW	4.75 kW	5.5 kW	7.0 kW
1+5/8"	5.5 kW	7.0 kW	11.0 kW	13.0 kW	16.0 kW	20.0 kW
3+1/8"	17.0 kW	21.0 kW	32.5 kW	40.0 kW	47.5 kW	60.0 kW
4+1/2"	27.5 kW	35.0 kW	55.0 kW	65.0 kW	80.0 kW	100.0 kW
RL-120	35.0 kW	45.0 kW	70.0 kW	85.0 kW	100.0 kW	130.0 kW
6+1/8"	55.0 kW	70.0 kW	100.0 kW	130.0 kW	160.0 kW	200.0 kW

Notes:

- Maximum Operating Temperature (Outer Conductor): 70°C (158°F); Recommended: < 65°C (149°F)
- Power referred to 1.500 m (4.900 ft.). See Altitude Thermal Derating

## Couplers & Splitters

### Hybrid Couplers

Code	Frequency Range	Max RMS Output Power	Unified Connector Spacing
<b>HF-HC Series</b>			
HF60B	160-250 MHz	27.5 kW	3.5U
HC100B	160-250 MHz	80.0 kW	-
HC150B	160-250 MHz	110.0 kW	-
HC60C	450-800 MHz	15.0 kW	3.5U
HC80C	450-800 MHz	20.0 kW	-
HC100C	450-800 MHz	27.5 kW	6U
<b>NH Series</b>			
NH100C	400-800 MHz	45.0 kW	9U
NH140C	400-800 MHz	65.0 kW	9U
NH200C	400-800 MHz	100.0 kW	9U

### Multicouplers

Code	Frequency Range	Max RMS Input / Output Power	No. of Inputs	Unified Connector Spacing
<b>MC Series</b>				
MC3Q60B	160-250 MHz	9.167 kW / 27.5 kW	3	3.5U
MC4Q60B	160-250 MHz	8.875 kW / 27.5 kW	4	3.5U
MC5Q60B	160-250 MHz	5.5 kW / 27.5 kW	5	3.5U
MC3Q60C	450-800 MHz	5.0 kW / 15.0 kW	3	3.5U
MC4Q60C	450-800 MHz	3.75 kW / 15.0 kW	4	3.5U
MC5Q60C	450-800 MHz	3.0 kW / 15.0 kW	5	3.5U
<b>MH Series</b>				
MH3P60C	450-800 MHz	2.5 kW / 7.5 kW	3	3U
MH4P60C	450-800 MHz	2.5 kW / 10.0 kW	4	3U
MH5P60C	450-800 MHz	2.5 kW / 12.5 kW	5	3U
MH6P60C	450-800 MHz	2.5 kW / 15.0 kW	6	3U
MH8P60C	450-800 MHz	2.5 kW / 18.0 kW	8	3U
MH10P60C	450-800 MHz	2.5 kW / 25.0 kW	10	3U
MH3P60RC	450-800 MHz	2.5 kW / 7.5 kW	3	2U
MH4P60RC	450-800 MHz	2.5 kW / 10.0 kW	4	2U
MH5P60RC	450-800 MHz	2.5 kW / 12.5 kW	5	2U
MH6P60RC	450-800 MHz	2.5 kW / 15.0 kW	6	2U
MH8P60RC	450-800 MHz	2.5 kW / 20.0 kW	8	2U
MH10P60RC	450-800 MHz	2.5 kW / 25.0 kW	10	2U

### Splitters

Code	Frequency Range	No. of Ways
<b>QS Series</b>		
QS2C	450-800 MHz	2
QS4C	450-800 MHz	4
QS8C	450-800 MHz	8
<b>PS Series</b>		
PS3C	450-800 MHz	3
PS5C	450-800 MHz	5

### Power Couplers

Code	Frequency Range	Max RMS Output Power
<b>RH Series</b>		
RH80Q176	176 MHz $\pm$ 2 MHz	2x 37.5 kW / 75 kW
RH110Q176	176 MHz $\pm$ 2 MHz	2x 75 kW / 150 kW
RH150Q176	176 MHz $\pm$ 2 MHz	2x 150 kW / 300 kW
RH80Q352	352 MHz $\pm$ 2 MHz	2x 27.5 kW / 55 kW
RH110Q352	352 MHz $\pm$ 2 MHz	2x 55 kW / 110 kW
RH150Q352	352 MHz $\pm$ 2 MHz	2x 110 kW / 220 kW

## Coaxial Components

### Directional Couplers

Code	Frequency Range	Max RMS Input Power 100 MHz	Max RMS Input Power 800 MHz	No. of Slots
<b>DC Series</b>				
DC2A23	100-800 MHz	7.0 kW	2.5 kW	Up to 3
DC4A23	100-800 MHz	7.0 kW	2.5 kW	Up to 6
DC3A39	100-800 MHz	20.0 kW	7.0 kW	Up to 3
DC6A39	100-800 MHz	20.0 kW	7.0 kW	Up to 6
DC3A77	100-800 MHz	60.0 kW	21.0 kW	Up to 3
DC6A77	100-800 MHz	60.0 kW	21.0 kW	Up to 6
DC3A103	100-800 MHz	100.0 kW	35.0 kW	Up to 3
DC6A103	100-800 MHz	100.0 kW	35.0 kW	Up to 6
DC3A120	100-800 MHz	130.0 kW	45.0 kW	Up to 3
DC6A120	100-800 MHz	130.0 kW	45.0 kW	Up to 6

### Matching Lines

Code	Frequency Range	Max RMS Input Power
<b>ML Series</b>		
ML39C	400-800 MHz	2.5 kW
ML77C	400-800 MHz	2.5 kW
ML120C	400-800 MHz	7.0 kW

### Lowpass Filters

Code	Frequency Range (Low Pass Frequency)	Max RMS Input Power
<b>LC Series</b>		
LC39B	DC to 240 MHz	5.5 kW
LC39RC	DC to 806 MHz	2.5 kW
LC39C	DC to 862 MHz	2.5 kW
<b>LP Series</b>		
LP39B	DC to 240 MHz	5.5 kW
LP39RC	DC to 806 MHz	3.5 kW
LP39C	DC to 862 MHz	6.5 kW
LP77B	DC to 240 MHz	18.0 kW
LP77RC	DC to 806 MHz	8.5 kW
LP77C	DC to 862 MHz	11.0 kW

### Loads

Code	Frequency Range	Max RMS Input Power	Application / Technology
<b>DT Series</b>			
DT300HC	DC-800 MHz	1.2 kW	With Heat Sink
DT300C	DC-800 MHz	1.8 kW	For Integration
DT300SC	DC-800 MHz	3.0 kW	For Integration
DT300LC	DC-800 MHz	3.25 kW	For Integration, Liq. Cooling
<b>DP Series</b>			
DP2C	DC-800 MHz	2.5 kW	Oil
DP4C	DC-800 MHz	4.0 kW	Oil
DP5C	DC-800 MHz	5.0 kW	Oil
DP10	DC-800 MHz	10.0 kW	Oil
DP15C	DC-800 MHz	15.0 kW	Water
DP25C	DC-800 MHz	25.0 kW	Water
DP50C	DC-800 MHz	50.0 kW	Water



## Connections

### Rigid Lines Connections

Code	Size	Max RMS Power 100 MHz	Max RMS Power 800 MHz
<b>RL Series</b>			
RL-23	7/8" (WX-20D)	7.0 kW	2.5 kW
RL-39	1+5/8" (WX-39D)	20.0 kW	7.0 kW
RL-77	3+1/8" (WX-77D)/NAX-77D	60.0 kW	21.0 kW
RL-103	4+1/2"	100.0 kW	35.0 kW
RL-120	RL-120 (WX-120D)/NAX-120D	130.0 kW	45.0 kW
RL-152	6+1/8" (WX-152D)	200.0 kW	70.0 kW

### Adapters

Code	Size	Available Connections
<b>AC Series</b>		
AC32	32 mm	N, 7-16, 7/8"
AC64	64 mm	7/8", 1+5/8", 3+1/8"
AC100	100 mm	1+5/8", 3+1/8"
AC130	130 mm	3+1/8", 4+1/2"
AC150	150 mm	4+1/2", RL-120, 6+1/8"
<b>SC Series</b>		
SC32	32 mm	N, 7-16, 7/8"
SC64	64 mm	N, 7-16, 7/8", 1+5/8"
SC100	100 mm	N, 7-16, 7/8", 1+5/8", 3+1/8"
SC130	130 mm	N, 7-16, 7/8", 1+5/8", 3+1/8", 4+1/2"
SC150	150 mm	N, 7-16, 7/8", 1+5/8", 3+1/8", 4+1/2", RL-120, 6+1/8"
SC206	-	6+1/8" to 9+3/16" Flange Adapter



## Industry, Communication, Misc

### Bandpass Filters for Internet of Things

Code	Frequency Range / Bandwidth	Order / Cavity	Case
<b>CL Series</b>			
CL3PW868	868 MHz ( $\pm 3$ MHz)	3-Pole / 30 mm	IP65 Case, Mast Fixing Kit
CL3P868	868 MHz ( $\pm 3$ MHz)	3-Pole / 30 mm	-

### Microwave Filters for Radio Links

Code	Frequency Range / Bandwidth	Order / Cavity
<b>CL Series</b>		
CL2500/10	950 to 2300 MHz / 10 MHz	4-Pole / 25 mm
CL2500/20	950 to 2300 MHz / 20 MHz	4-Pole / 25 mm
CL2500/30	950 to 2300 MHz / 30 MHz	4-Pole / 25 mm

### Multiport Branching Systems for Road Networks

Code	Frequency Ranges				
<b>MS Series</b>					
MS5X	77-78.3 MHz	87.5-108 MHz	168-172.8 MHz	188 - 230 MHz	412-423 MHz

### Directional Couplers for Measurement

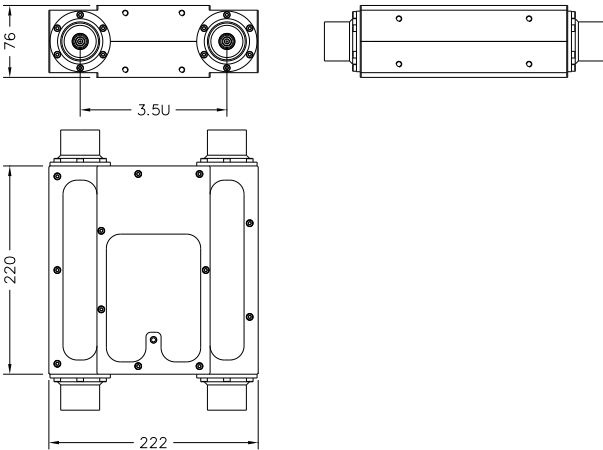
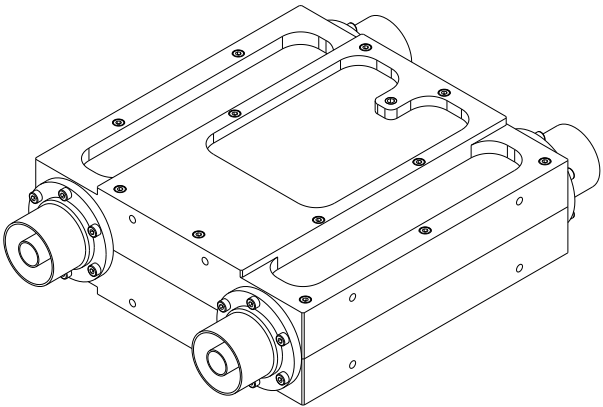
Code	Frequency Range	No. of Probes
<b>DC Series</b>		
DC2M23	100-2.000 MHz	2 Probes, Equalized Response

### Filters and Duplexers for Weather and Hydrological Monitoring

Code	Frequency Range / Bandwidth	Order / Cavity
<b>450 Series</b>		
CF450	437-449 MHz / $\pm 280$ kHz	1-Pole / 25 mm
CL450	442.8 MHz / 11.5 MHz	4-Pole / 20 mm
DX450	437-449 MHz / 1.6 MHz	4-Pole / 50 mm

# Hybrid Coupler

HF60B



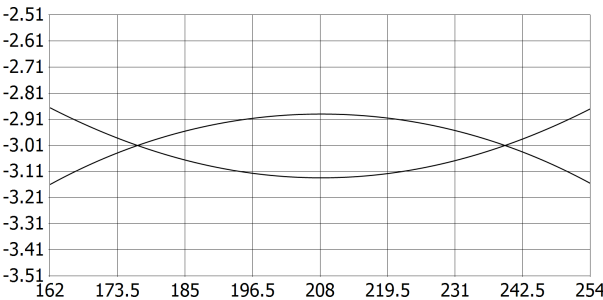
### FEATURES

- Crossed Configuration
- 3.5U Unified Connector Spacing
- Interchangeable Connector System

### SPECIFICATIONS

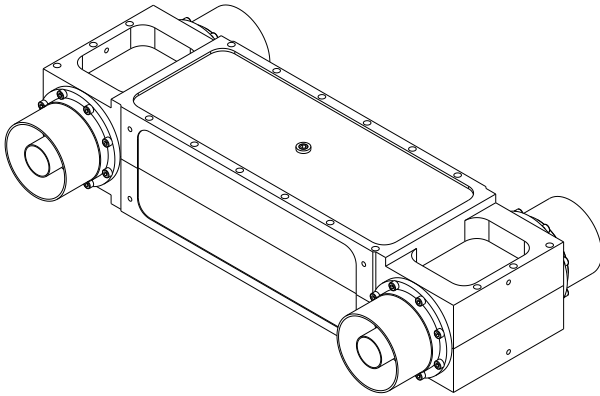
Code / Revision	C-HF60B / A
Frequency Range	160-250 MHz
Max RMS Output Power	27.5 kW @ 160 MHz 21.0 kW @ 250 MHz
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.03 ±0.15 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	222x220x76 mm / 5 kg (11 lb.)
Connectors <sup>(2)</sup>	<b>4x 64 mm Inputs (2x); Outputs (2x)</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration    <sup>(2)</sup> Other Connectors available



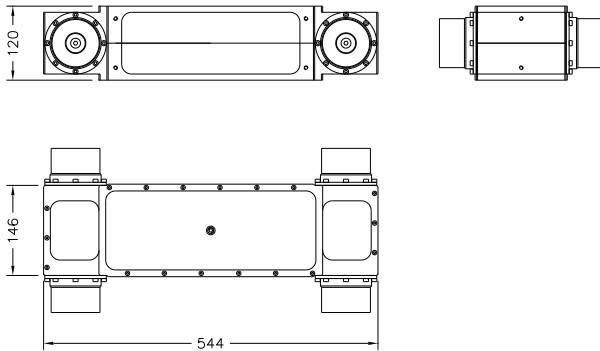
# Hybrid Coupler

## HC100B



### FEATURES

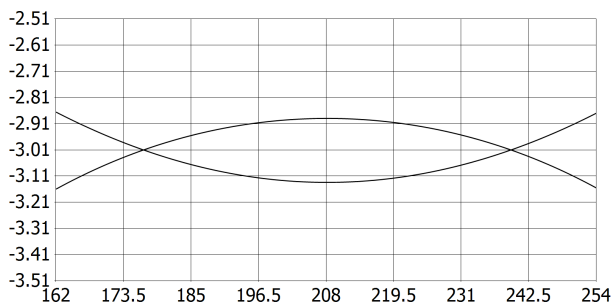
- Crossed Configuration
- Interchangeable Connector System



### SPECIFICATIONS

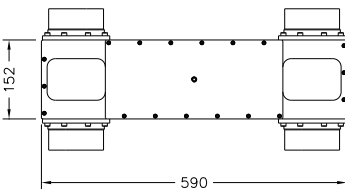
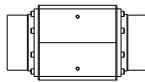
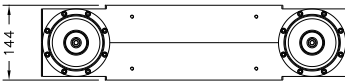
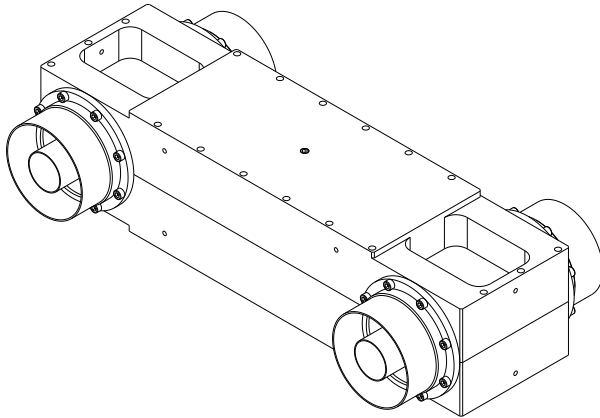
Code / Revision	C-HC100B / A
Frequency Range	160-250 MHz
Max RMS Output Power	80.0 kW @ 160 MHz 65.0 kW @ 250 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.03 ±0.15 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	544x146x120 mm / 9.5 kg (20.9 lb.)
Connectors <sup>(2)</sup>	<b>4x 100 mm Inputs (2x); Outputs (2x)</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# Hybrid Coupler

## HC150B



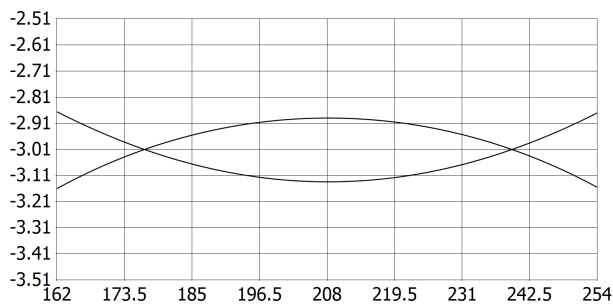
### FEATURES

- Crossed Configuration
- Interchangeable Connector System

### SPECIFICATIONS

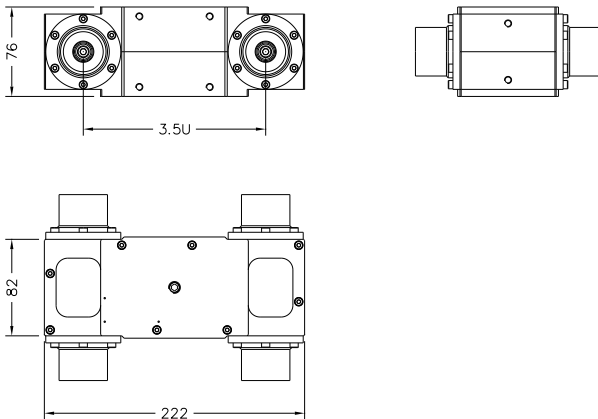
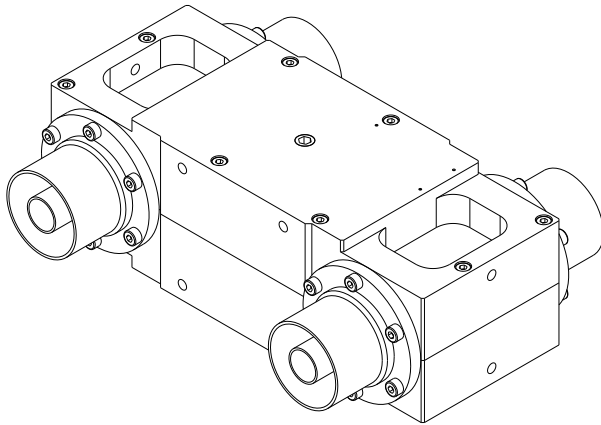
Code / Revision	C-HC150B / A
Frequency Range	160-250 MHz
Max RMS Output Power	110.0 kW @ 160 MHz
	85.0 kW @ 250 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.03 ±0.15 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	590x152x144 mm / 15 kg (33 lb.)
Interchangeable Connector System	4x 130 mm
Connectors <sup>(2)</sup>	<b>4x 130 mm Inputs (2x); Outputs (2x)</b>
	D-PC130M 3+1/8" FastLine Socket
	D-PC130N 3+1/8" EIA FastLine Flange
	D-PC130O 3+1/8" FastLine Plug
	D-PC130P 4+1/2" FastLine Socket (Default)
	D-PC130Q 4+1/2" EIA FastLine Flange
	D-PC130R 4+1/2" FastLine Plug
	D-PC130S RL-120 FastLine Socket
	D-PC130X RL-120 FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# Hybrid Coupler

## HC60C



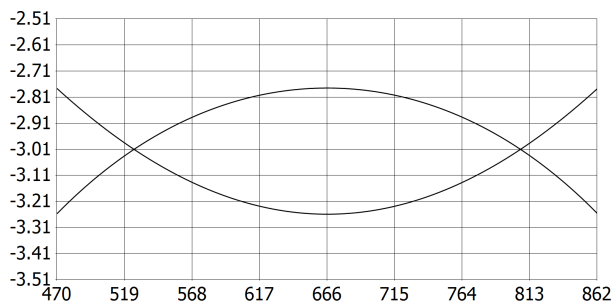
### FEATURES

- Crossed Configuration
- 3.5U Unified Connector Spacing
- Interchangeable Connector System

### SPECIFICATIONS

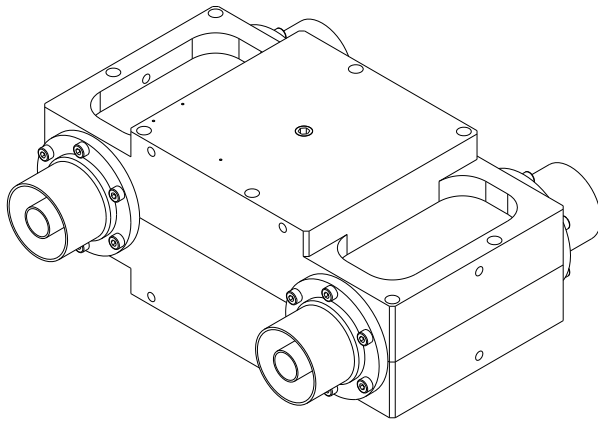
Code / Revision	C-HC60C / A
Frequency Range	450-800 MHz
Max RMS Output Power	15.0 kW @ 450 MHz 11.0 kW @ 800 MHz
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ±0.30 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	222x82x76 mm / 2.5 kg (5.5 lb.)
Connectors <sup>(2)</sup>	<b>4x 64 mm Inputs (2x); Outputs (2x)</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



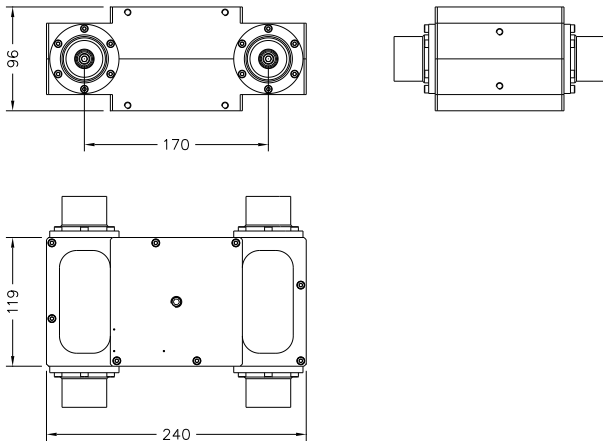
# Hybrid Coupler

## HC80C



### FEATURES

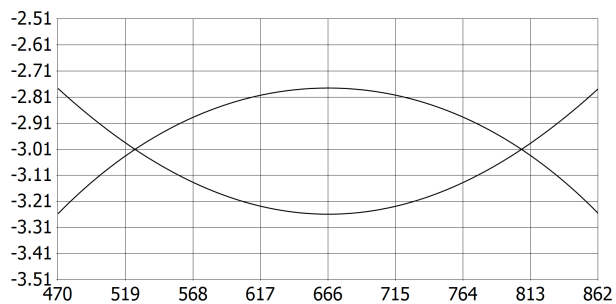
- Crossed Configuration
- Interchangeable Connector System



### SPECIFICATIONS

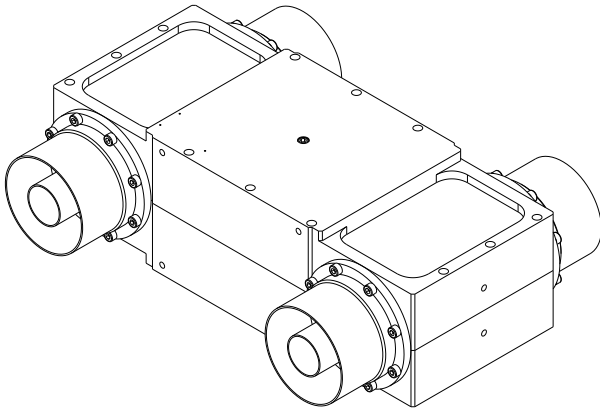
Code / Revision	C-HC80C / A
Frequency Range	450-800 MHz
Max RMS Output Power	20.0 kW @ 450 MHz 15.0 kW @ 800 MHz
Connector Spacing (Center-to-Center)	-
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ± 0.30 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	240x119x96 mm / 3.5 kg (7.7 lb.)
Connectors <sup>(2)</sup>	<b>4x 64 mm Inputs (2x); Outputs (2x)</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



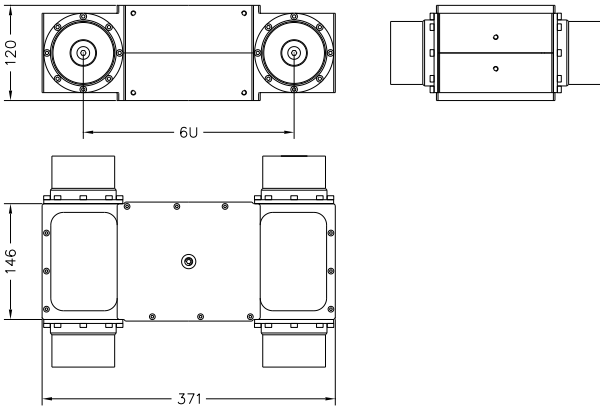
# Hybrid Coupler

## HC100C



### FEATURES

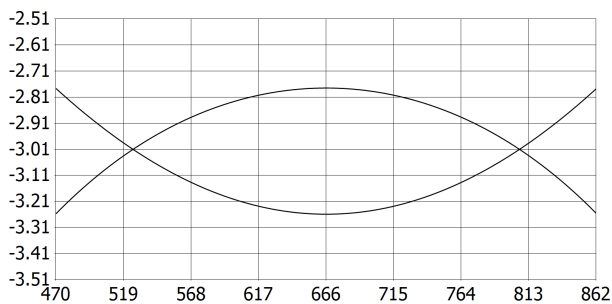
- Crossed Configuration
- 6U Unified Connector Spacing
- Interchangeable Connector System



### SPECIFICATIONS

Code / Revision	C-HC100C / A
Frequency Range	450-800 MHz
Max RMS Output Power	27.5 kW @ 450 MHz 21.0 kW @ 800 MHz
Connector Spacing (Center-to-Center)	6U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ± 0.30 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	371x146x120 mm / 10.5 kg (23.1 lb.)
Connectors <sup>(2)</sup>	<b>4x 100 mm Inputs (2x); Outputs (2x)</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange

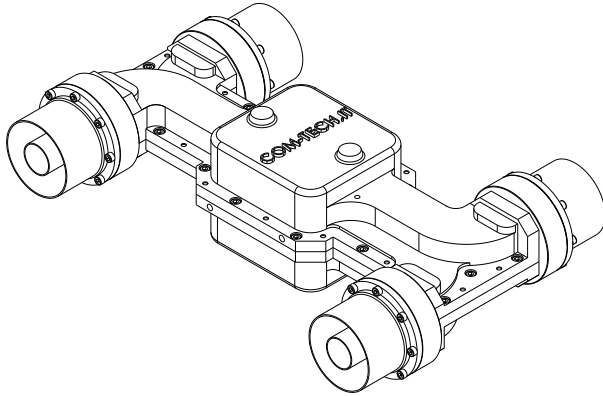
<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available





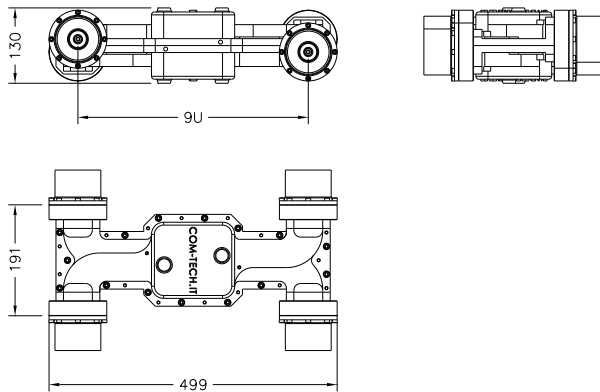
# Hybrid Coupler

## NH100C



### FEATURES

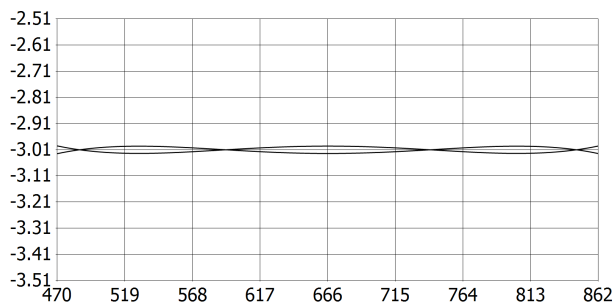
- Crossed Configuration
- *MultiStep*: Ultra-Flat Frequency Response
- 9U Unified Connector Spacing
- Interchangeable Connector System



### SPECIFICATIONS

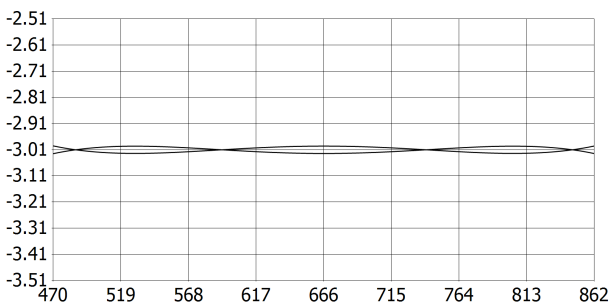
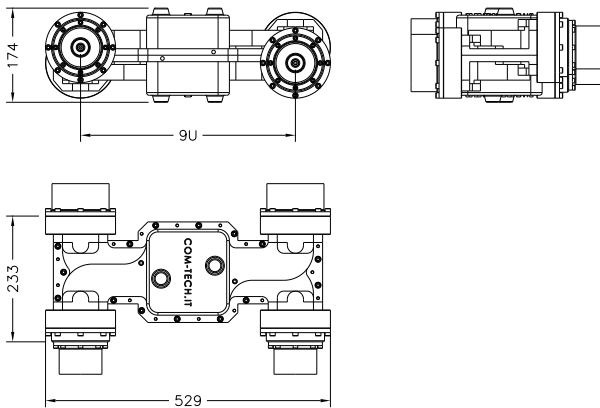
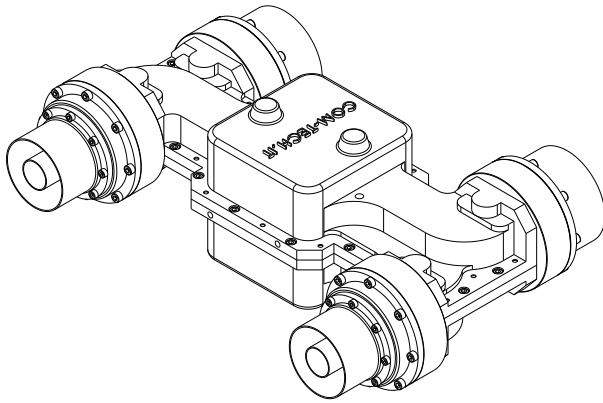
Code / Revision	C-NH100C / A
Frequency Range	400-800 MHz
Max RMS Output Power	45.0 kW @ 450 MHz 32.5 kW @ 800 MHz
Connector Spacing (Center-to-Center)	9U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ± 0.10 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	499x191x130 mm / 8 kg (17.6 lb.)
Connectors <sup>(2)</sup>	<b>4x 100 mm Inputs (2x); Outputs (2x)</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# Hybrid Coupler

## NH140C



### FEATURES

- Crossed Configuration
- *MultiStep*: Ultra-Flat Frequency Response
- 9U Unified Connector Spacing
- Interchangeable Connector System

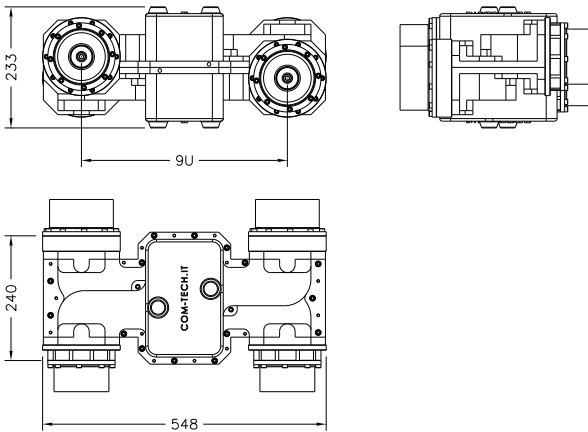
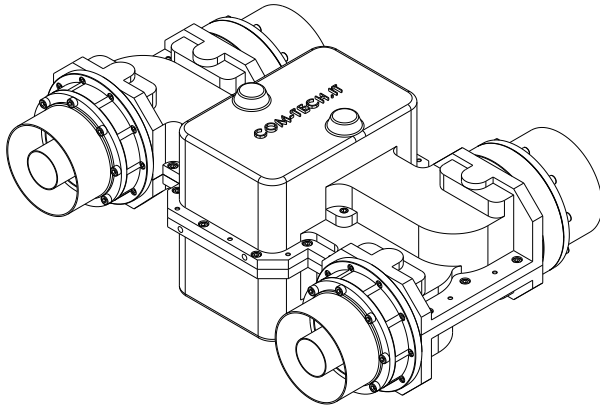
### SPECIFICATIONS

Code / Revision	C-NH140C / A
Frequency Range	400-800 MHz
Max RMS Output Power	65.0 kW @ 400 MHz 45.0 kW @ 800 MHz
Connector Spacing (Center-to-Center)	9U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ± 0.10 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	529x233x174 mm / 13 kg (17.6 lb.)
Connectors <sup>(2)</sup>	<b>2x 100 mm Inputs</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange <b>2x 130 mm Outputs</b> D-PC130P 4+1/2" FastLine Socket (Default) D-PC130Q 4+1/2" EIA FastLine Flange D-PC130R 4+1/2" FastLine Plug D-PC130S RL-120 FastLine Socket D-PC130X RL-120 FastLine Flange
Options <sup>(2)</sup>	D-NH100.130 Input Connector Upgraded

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

# Hybrid Coupler

## NH200C



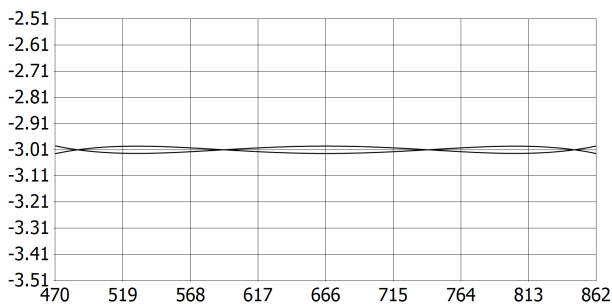
### FEATURES

- Crossed Configuration
- *MultiStep*: Ultra-Flat Frequency Response
- 9U Unified Connector Spacing
- Interchangeable Connector System

### SPECIFICATIONS

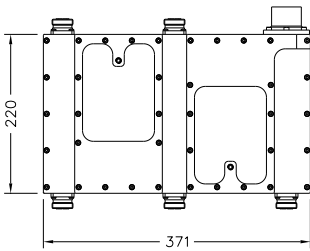
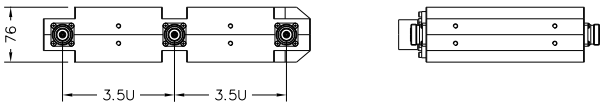
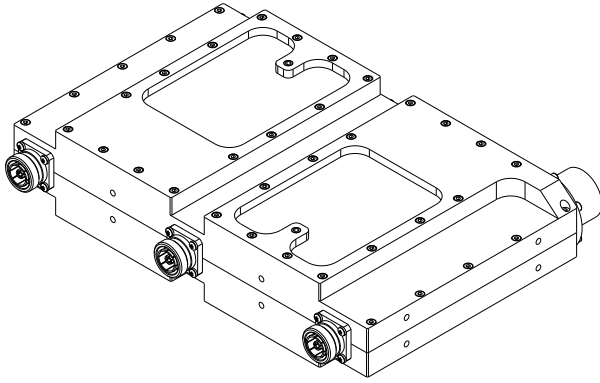
Code / Revision	C-NH200C / A
Frequency Range	400-800 MHz
Max RMS Output Power	100.0 kW @ 400 MHz 70.0 kW @ 800 MHz
Connector Spacing (Center-to-Center)	9U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	3.05 ± 0.10 dB
Phase Response	0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	548x240x233 mm / 21 kg (46 lb.)
Connectors <sup>(2)</sup>	<b>2x 130 mm Inputs</b> D-PC130P 4+1/2" FastLine Socket (Default) D-PC130Q 4+1/2" EIA FastLine Flange D-PC130R 4+1/2" FastLine Plug <b>2x 150 mm Outputs</b> D-PC150S RL-120 FastLine Socket (Default) D-PC150T RL-120 FastLine Plug D-PC150X RL-120 FastLine Flange D-PC150U 6+1/8" FastLine Socket D-PC150V 6+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	D-NH130.150 Input Connector Upgraded

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# 3-Input Quadrature Multicoupler

## MC3Q60B



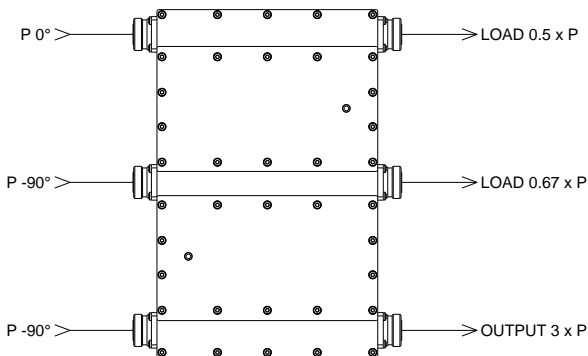
### FEATURES

- 3-Input
- Quadrature Multicoupler Design
- Phase Compensated Design
- 3.5U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)

### SPECIFICATIONS

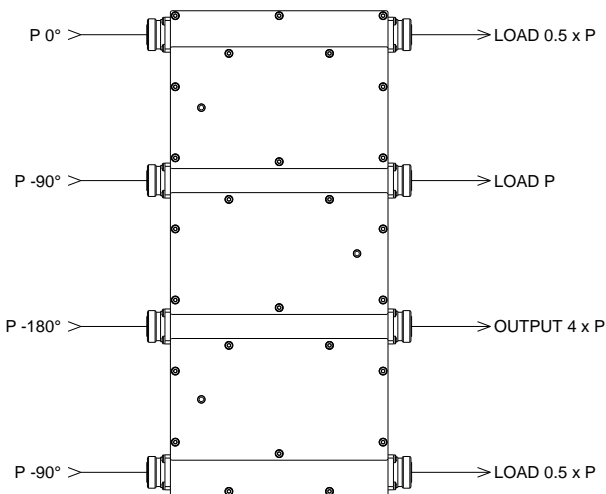
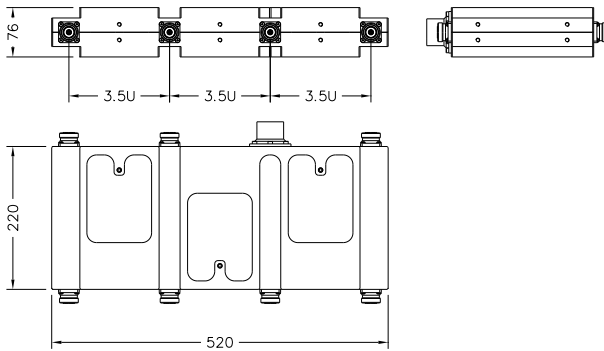
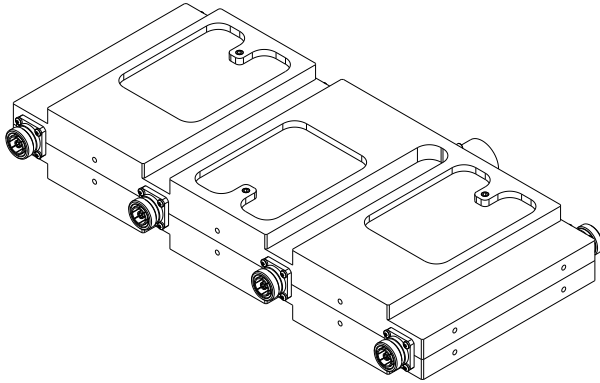
Code / Revision	C-MC3Q60B / A
Frequency Range	160-250 MHz
Max RMS Input / Output Power	9.167 kW / 27.5 kW @ 160 MHz 7.0 kW / 21.0 kW @ 250 MHz
No. of Inputs	3
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-4.80 ±0.3 dB
Phase Response	-180° / -90° / -90° (±10°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	371x220x76 mm / 8 kg (17.6 lb.)
Connectors <sup>(2)</sup>	<b>5x 32 mm Inputs (3x); Loads (2x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



## 4-Input Quadrature Multicoupler

MC4Q60B



## FEATURES

- 4-Input
- Quadrature Multicoupler Design
- 3.5U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)

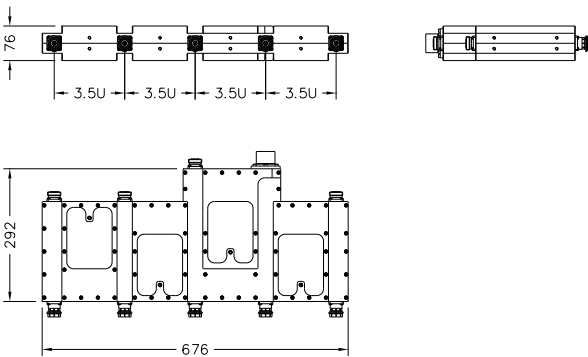
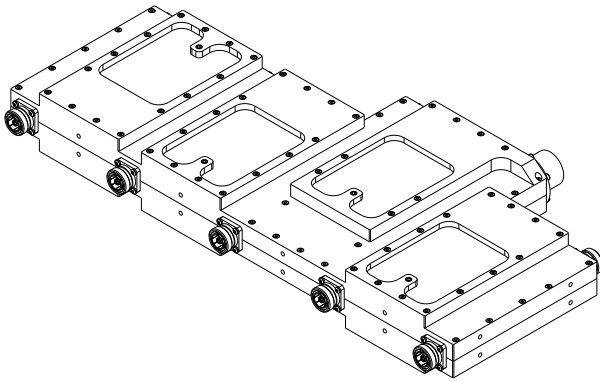
## SPECIFICATIONS

Code / Revision	C-MC4Q60B / A
Frequency Range	160-250 MHz
Max RMS Input / Output Power	8.875 kW / 27.5 kW @ 160 MHz 5.25 kW / 21.0 kW @ 250 MHz
No. of Inputs	4
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-6.10 ±0.4 dB
Phase Response	-180° / -90° / 0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	520x220x76 mm / 9.5 kg (20.9 lb.)
Connectors <sup>(2)</sup>	<b>7x 32 mm Inputs (4x); Loads (3x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

# 5-Input Quadrature Multicoupler

## MC5Q60B



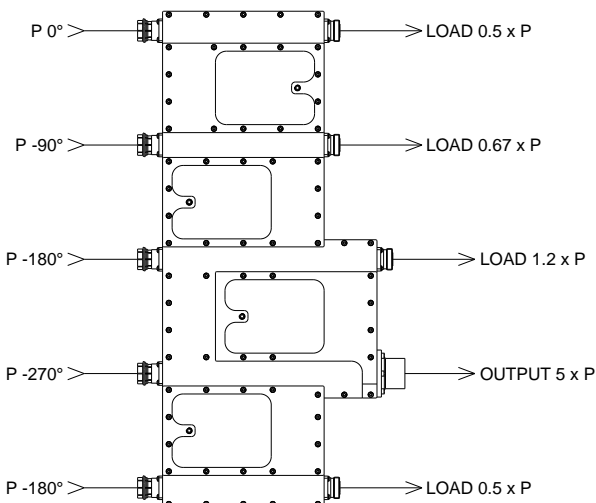
### FEATURES

- 5-Input
- Quadrature Multicoupler Design
- Phase Compensated Design
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)

### SPECIFICATIONS

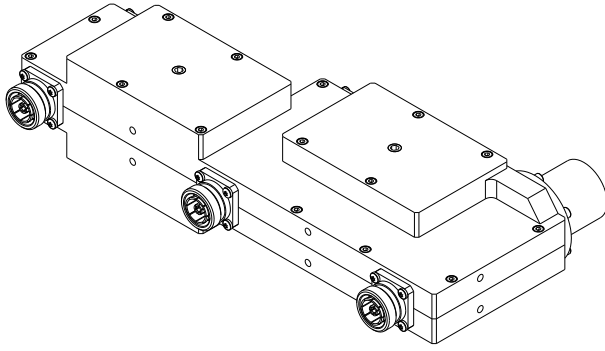
Code / Revision	C-MC5Q60B / A
Frequency Range	160-250 MHz
Max RMS Input / Output Power	5.5 kW / 27.5 kW @ 160 MHz 4.2 kW / 21.0 kW @ 250 MHz
No. of Inputs	5
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-7.10 ±0.5 dB
Phase Response	-270° / -180° / -180° / -90° / -180° (±10°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	676x292x76 mm / 16 kg (35.2 lb.)
Connectors <sup>(2)</sup>	<b>9x 32 mm Inputs (5x); Loads (4x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



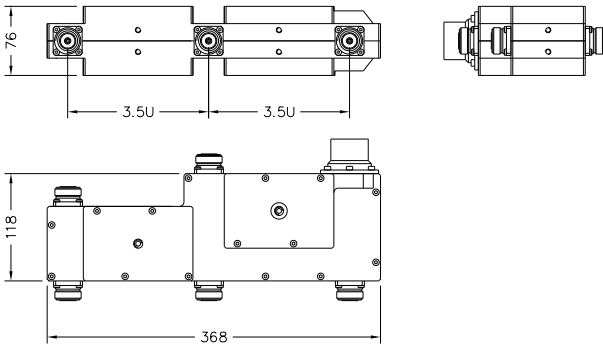
# 3-Input Quadrature Multicoupler

## MC3Q60C



### FEATURES

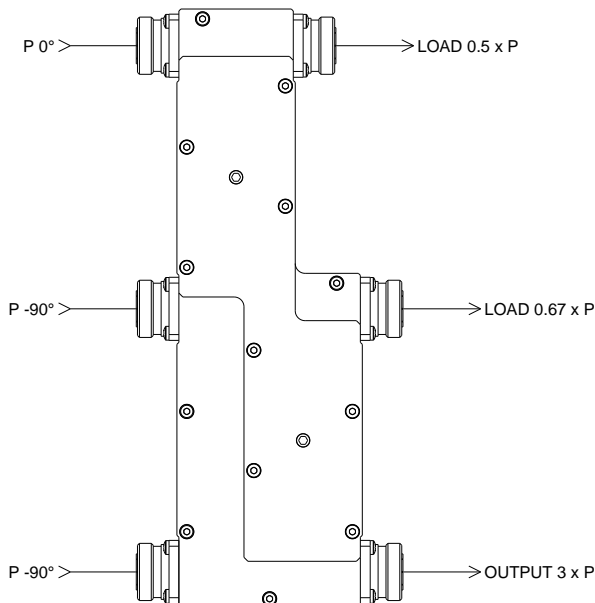
- 3-Input
- Quadrature Power Combination System
- Phase Compensated Design
- 3.5U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)



### SPECIFICATIONS

Code / Revision	C-MC3Q60C / A
Frequency Range	400-800 MHz
Max RMS Input / Output Power	5.0 kW / 15.0 kW @ 400 MHz 3.667 kW / 11.0 kW @ 800 MHz
No. of Inputs	3
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-4.80 ±0.6 dB
Phase Response	-180° / -90° / -90° (±10°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	368x118x76 mm / 4 kg (8.8 lb.)
Connectors <sup>(2)</sup>	<b>5x 32 mm Inputs (3x); Loads (2x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

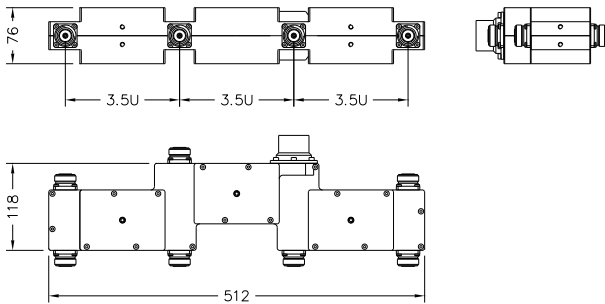
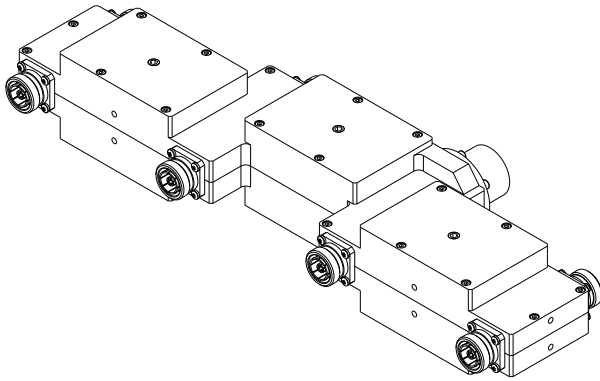
<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available





## 4-Input Quadrature Multicoupler

MC4Q60C



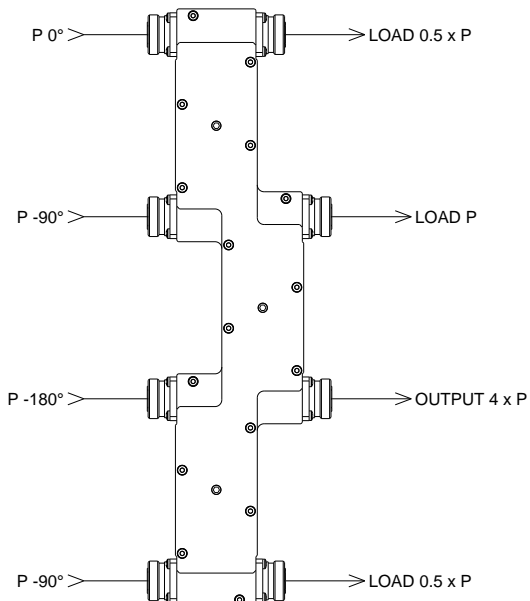
## FEATURES

- 4-Input
- Quadrature Power Combination System
- 3.5U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)

## SPECIFICATIONS

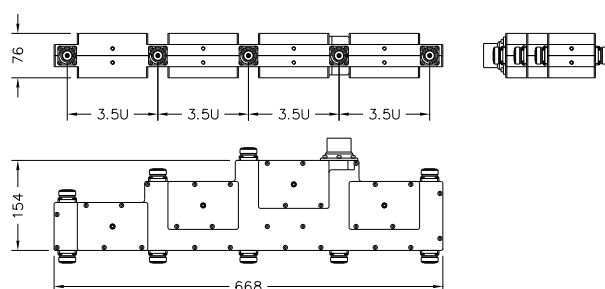
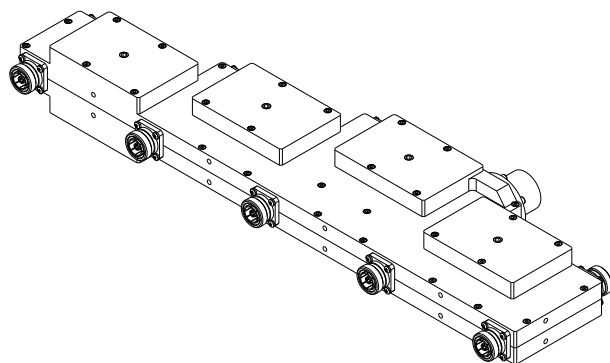
Code / Revision	C-MC4Q60C / A
Frequency Range	400-800 MHz
Max RMS Input / Output Power	3.75 kW / 15.0 kW @ 400 MHz 2.75 kW / 11.0 kW @ 800 MHz
No. of Inputs	4
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-6.10 ±0.7 dB
Phase Response	-180° / -90° / 0° / -90° (±1°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	512x118x76 mm / 4.5 kg (9.9 lb.)
Connectors <sup>(2)</sup>	<b>7x 32 mm Inputs (4x); Loads (3x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



## 5-Input Quadrature Multicoupler

MC5Q60C



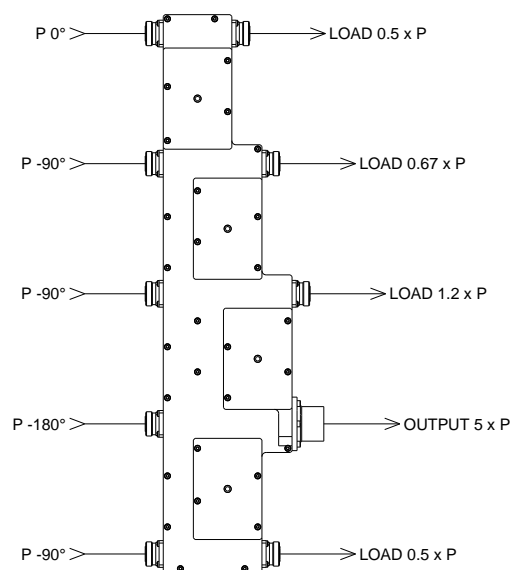
## FEATURES

- 5-Input
- Quadrature Power Combination System
- Phase Compensated Design
- 3.5U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: QS Series (Optional)

## SPECIFICATIONS

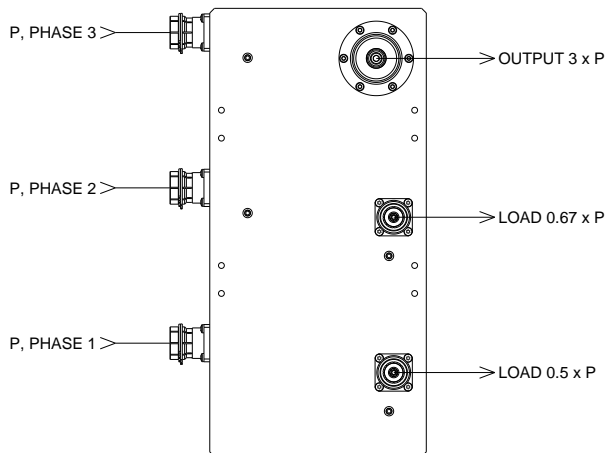
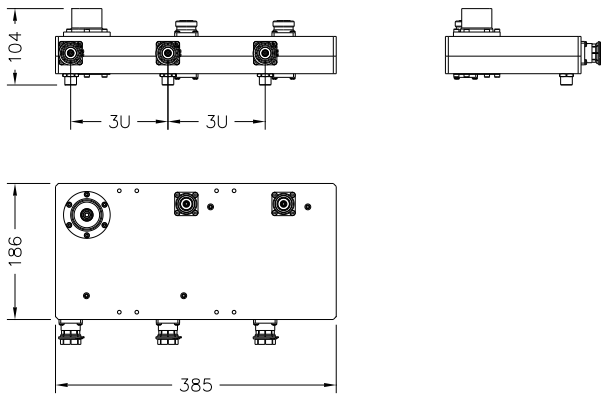
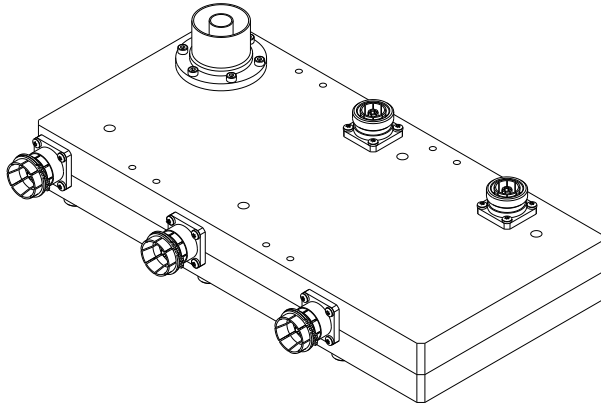
Code / Revision	C-MC5Q60C / A
Frequency Range	400-800 MHz
Max RMS Input / Output Power	3.0 kW / 15.0 kW @ 400 MHz 2.2 kW / 11.0 kW @ 800 MHz
No. of Inputs	5
Connector Spacing (Center-to-Center)	3.5U
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-7.10 ±0.7 dB
Phase Response	-270° / -180° / -180° / -90° / -180° (±10°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	668x154x76 mm / 6 kg (13.2 lb.)
Connectors <sup>(2)</sup>	<b>9x 32 mm Inputs (5x); Loads (4x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# 3-Input Progressive Multicoupler

## MH3P60C



### FEATURES

- 3-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

### OPTIONS

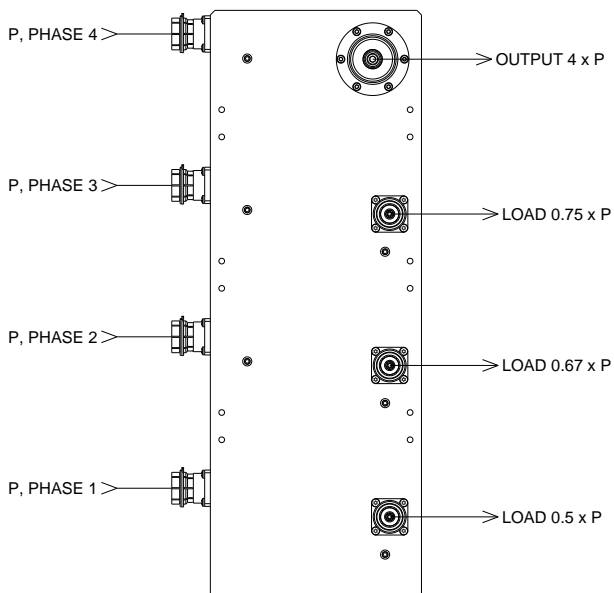
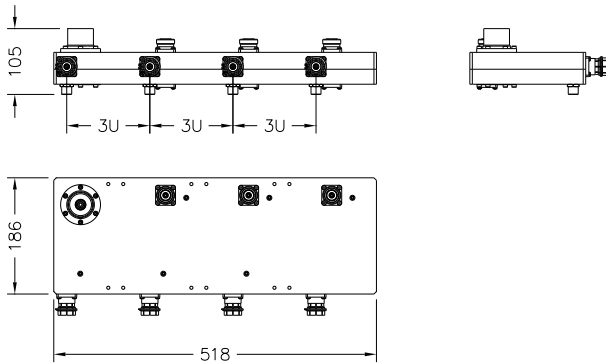
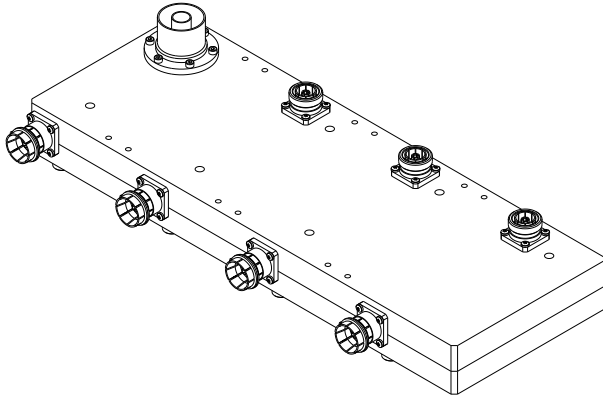
- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

### SPECIFICATIONS

Code / Revision	C-MH3P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 7.5 kW @ 450 MHz 2.0 kW / 6.0 kW @ 800 MHz
No. of Inputs	3
Connector Spacing	3U
Return Loss / VSWR	> 26 dB / < 1.11
Isolation	> 30 dB
Amplitude Response	-4.80 ±0.6 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	385x186x104 mm / 10 kg (22 lb.)
Connectors <sup>(2)</sup>	<b>5x 32 mm Inputs (3x); Loads (2x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

# 4-Input Progressive Multicoupler

**MH4P60C**


## FEATURES

- 4-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

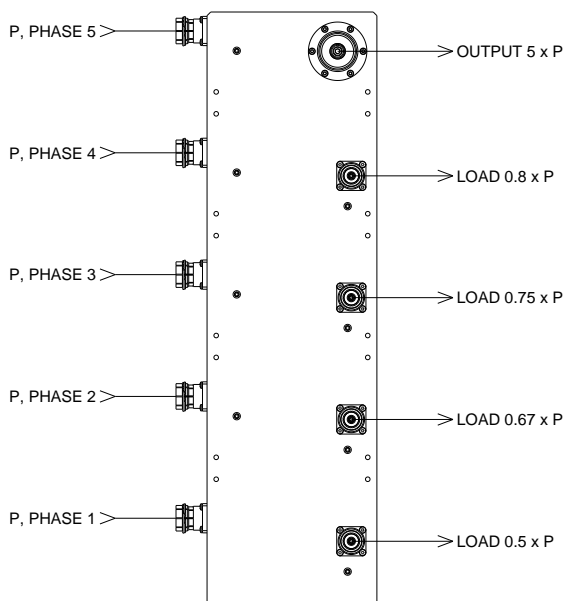
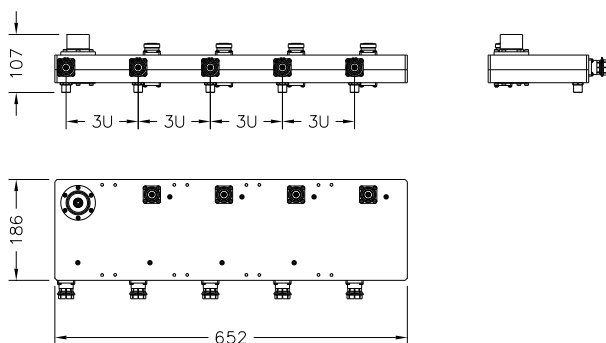
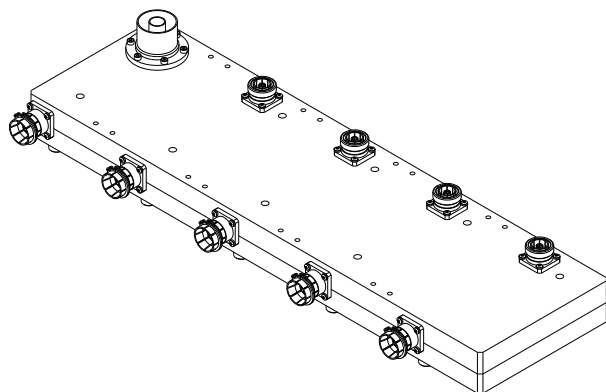
## SPECIFICATIONS

Code / Revision	C-MH4P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 10.0 kW @ 450 MHz 2.0 kW / 8.0 kW @ 800 MHz
No. of Inputs	4
Connector Spacing	3U
Return Loss / VSWR	> 26 dB / < 1.11
Isolation	> 30 dB
Amplitude Response	-6.10 ±0.7 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	518x186x105 mm / 13 kg (29 lb.)
Connectors <sup>(2)</sup>	<b>7x 32 mm Inputs (4x); Loads (3x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 5-Input Progressive Multicoupler

MH5P60C



## FEATURES

- 5-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

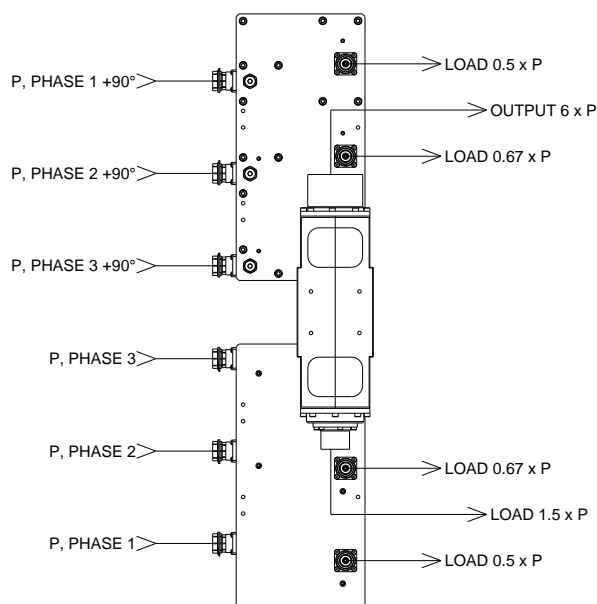
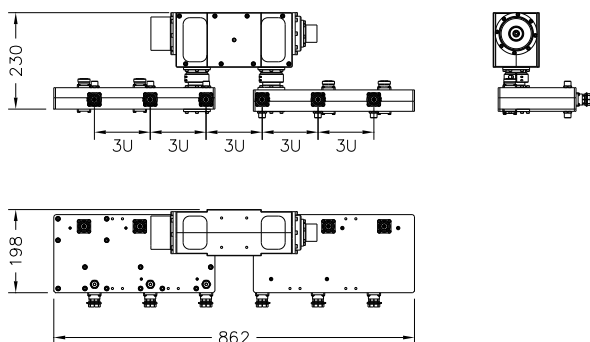
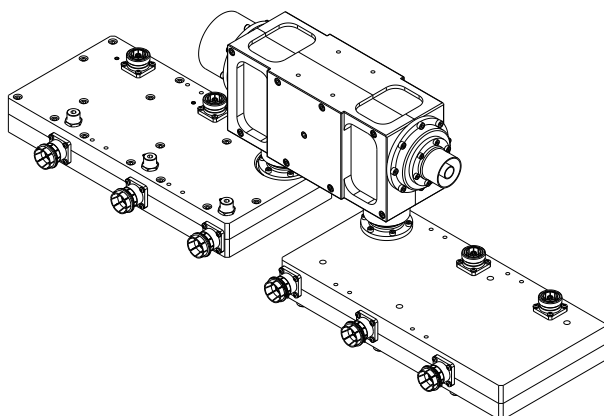
## SPECIFICATIONS

Code / Revision	C-MH5P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 12.5 kW @ 450 MHz 2.0 kW / 10.0 kW @ 800 MHz
No. of Inputs	5
Connector Spacing	3U
Return Loss / VSWR	> 24 dB / < 1.13
Isolation	> 30 dB
Amplitude Response	-7.10 ±0.7 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	652x186x107 mm / 16 kg (36 lb.)
Connectors <sup>(2)</sup>	<b>9x 32 mm Inputs (5x); Loads (4x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 6-Input Progressive Multicoupler

MH6P60C



## FEATURES

- 6-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

## SPECIFICATIONS

Code / Revision	C-MH6P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 15.0 kW @ 450 MHz 2.0 kW / 12.0 kW @ 800 MHz
No. of Inputs	6
Connector Spacing	3U
Return Loss / VSWR	> 25 dB / < 1.12
Isolation	> 30 dB
Amplitude Response	-7.90 ±1.1 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	862x198x230 mm / 24 kg (53 lb.)

Connectors <sup>(2)</sup>	<b>10x 32 mm Inputs (6x); Loads (4x)</b>
	D-PC32E 7-16 Female (Default)
	D-PC32F 7-16 Male
	D-PC32G 7/8" FastLine Socket
	D-PC32H 7/8" EIA FastLine Flange
	D-PC32I 7/8" FastLine Plug
	D-PC32IO 7/8" Quick Plug
	<b>1x 64 mm Load</b>
	D-PC64J 1+5/8" FastLine Socket (Default)
	D-PC64K 1+5/8" EIA FastLine Flange
	<b>1x 100 mm Output</b>
	D-PC100M 3+1/8" FastLine Socket (Default)
	D-PC100N 3+1/8" EIA FastLine Flange
	D-PC100O 3+1/8" FastLine Plug
	D-PC100P 4+1/2" FastLine Socket
	D-PC100Q 4+1/2" EIA FastLine Flange

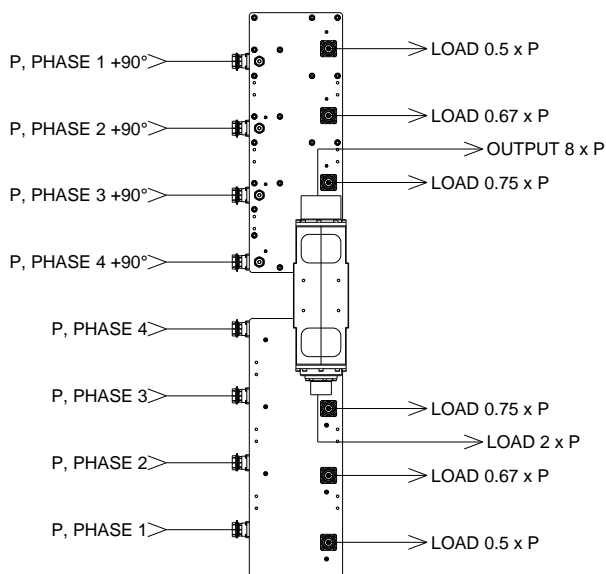
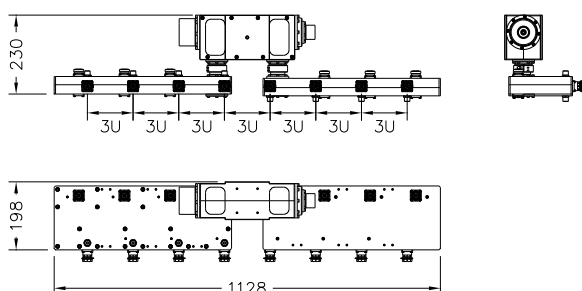
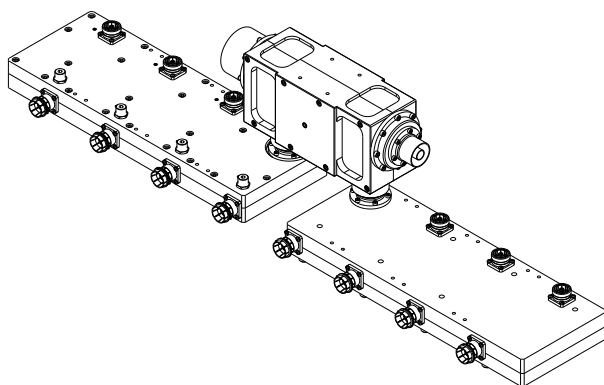
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads
	O-MH.02 Output on the Left
	O-MH.03 Loads on the Left

Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 8-Input Progressive Multicoupler

MH8P60C



## FEATURES

- 8-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

## SPECIFICATIONS

Code / Revision	C-MH8P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 18.0 kW @ 450 MHz 2.0 kW / 16.0 kW @ 800 MHz
No. of Inputs	8
Connector Spacing	3U
Return Loss / VSWR	> 25 dB / < 1.12
Isolation	> 30 dB
Amplitude Response	-9.20 ±1.2 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	1128x198x230 mm / 27 kg (60 lb.)

Connectors <sup>(2)</sup>**14x 32 mm Inputs (8x); Loads (6x)**

D-PC32E	7-16 Female (Default)
D-PC32F	7-16 Male
D-PC32G	7/8" FastLine Socket
D-PC32H	7/8" EIA FastLine Flange
D-PC32I	7/8" FastLine Plug
D-PC32IO	7/8" Quick Plug

**1x 64 mm Load**

D-PC64J	1+5/8" FastLine Socket (Default)
D-PC64K	1+5/8" EIA FastLine Flange

**1x 100 mm Output**

D-PC100M	3+1/8" FastLine Socket (Default)
D-PC100N	3+1/8" EIA FastLine Flange
D-PC100O	3+1/8" FastLine Plug
D-PC100P	4+1/2" FastLine Socket
D-PC100Q	4+1/2" EIA FastLine Flange

Options <sup>(2)</sup>

O-MH.01	Integrated Liquid Cooled Loads
O-MH.02	Output on the Left
O-MH.03	Loads on the Left

Liquid Cooling Interface <sup>(2)</sup>

3/8" NPT Male

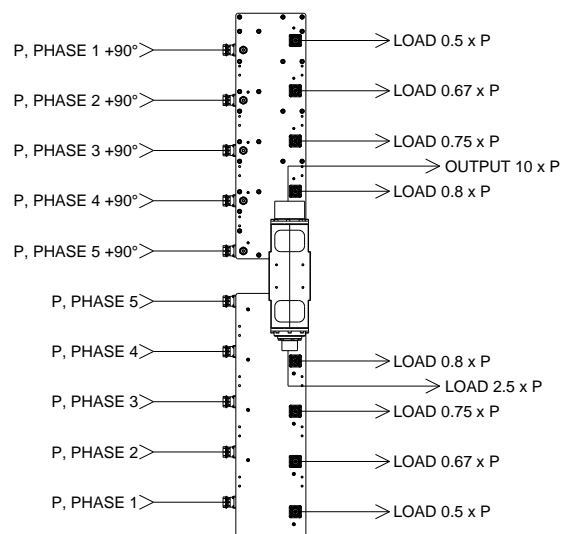
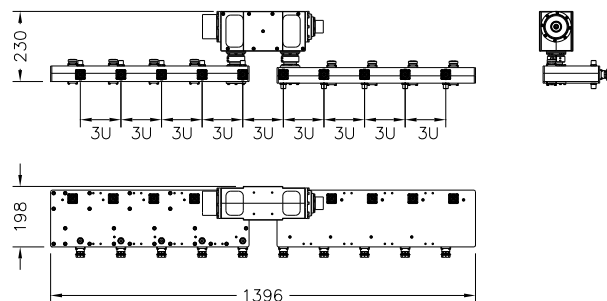
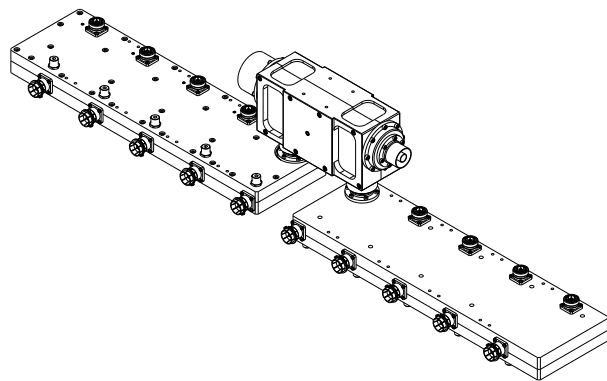
Coolant / Liquid Flow

Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 10-Input Progressive Multicoupler

MH10P60C



## FEATURES

- 10-Input
- Progressive Power Combination System
- 3U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

## SPECIFICATIONS

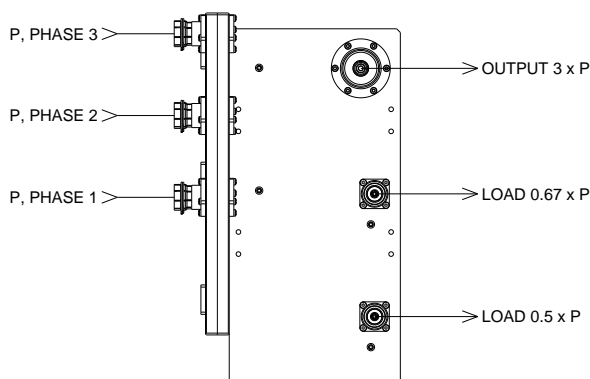
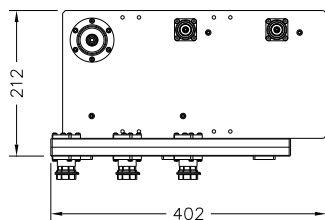
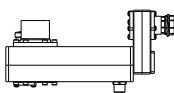
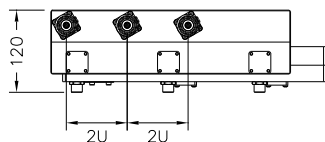
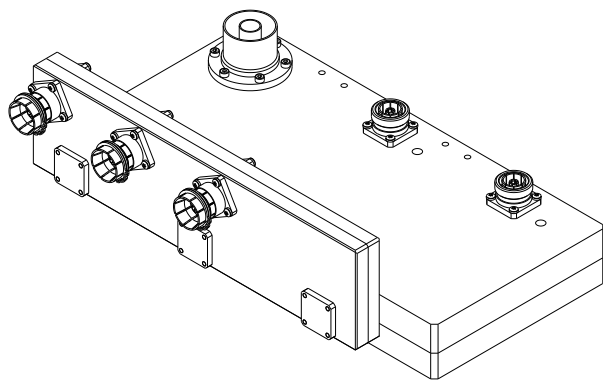
Code / Revision	C-MH10P60C / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 25.0 kW @ 450 MHz 2.0 kW / 20.0 kW @ 800 MHz
No. of Inputs	10
Connector Spacing	3U
Return Loss / VSWR	> 23 dB / < 1.15
Isolation	> 30 dB
Amplitude Response	-10.20 ±1.2 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	1396x198x230 mm / 36 kg (79 lb.)
Connectors <sup>(2)</sup>	<b>18x 32 mm Inputs (10x); Loads (8x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Load</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange <b>1x 100 mm Output</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



## 3-Input Progressive Multicoupler

MH3P60RC



## FEATURES

- 3-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

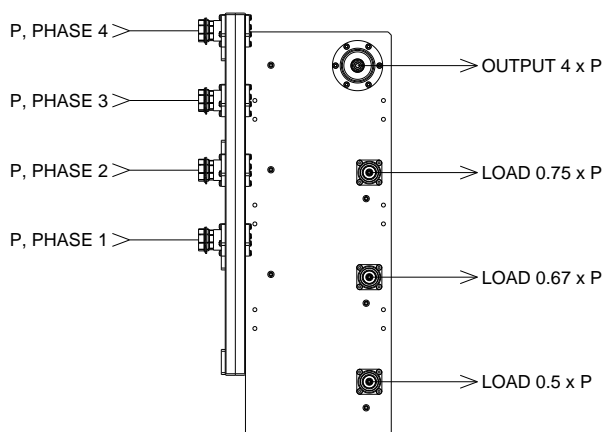
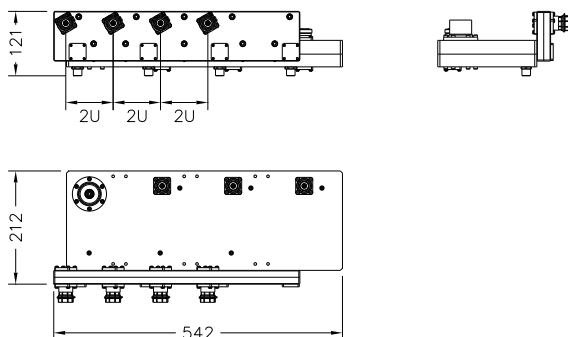
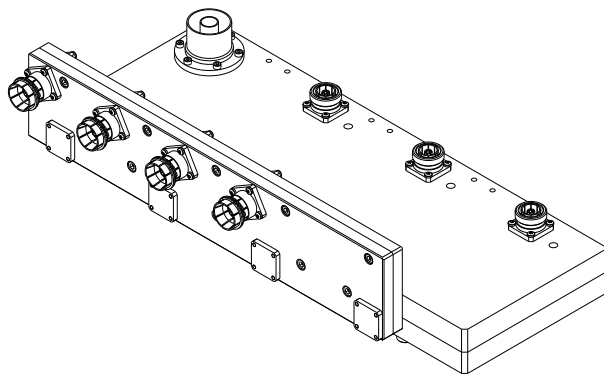
## SPECIFICATIONS

Code / Revision	C-MH3P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 7.5 kW @ 450 MHz 2.0 kW / 6.0 kW @ 800 MHz
No. of Inputs	3
Connector Spacing	2U
Return Loss / VSWR	> 26 dB / < 1.11
Isolation	> 30 dB
Amplitude Response	-4.80 ±0.6 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	402x212x120 mm / 10.2 kg (22.4 lb.)
Connectors <sup>(2)</sup>	<b>5x 32 mm Inputs (3x); Loads (2x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 4-Input Progressive Multicoupler

MH4P60RC



## FEATURES

- 4-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

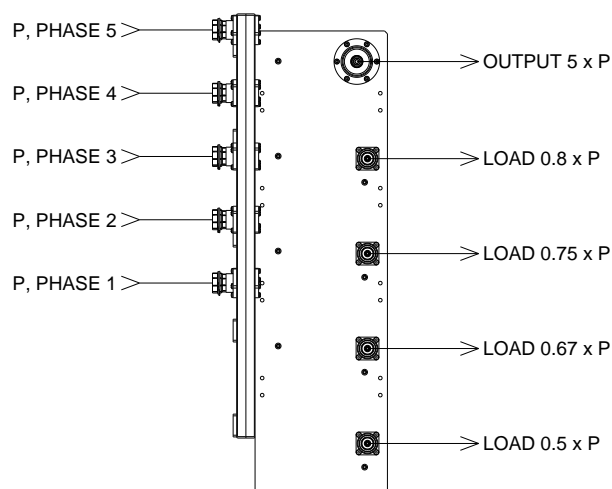
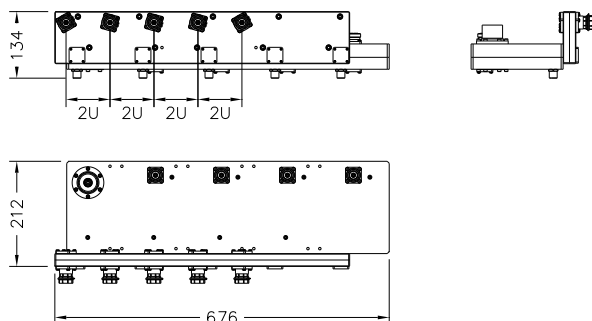
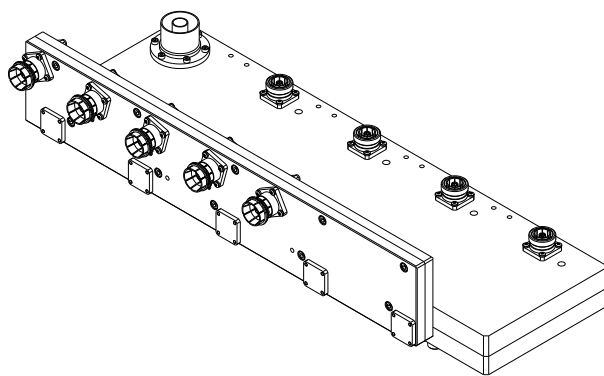
## SPECIFICATIONS

Code / Revision	C-MH4P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 10.0 kW @ 450 MHz 2.0 kW / 8.0 kW @ 800 MHz
No. of Inputs	4
Connector Spacing	2U
Return Loss / VSWR	> 26 dB / < 1.11
Isolation	> 30 dB
Amplitude Response	-6.10 ±0.7 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	542x212x121 mm / 13.7 kg (30.2 lb.)
Connectors <sup>(2)</sup>	<b>7x 32 mm Inputs (4x); Loads (3x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug D-PC64M 3+1/8" FastLine Socket D-PC64N 3+1/8" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 5-Input Progressive Multicoupler

MH5P60RC



## FEATURES

- 5-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

## SPECIFICATIONS

Code / Revision	C-MH5P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 12.5 kW @ 450 MHz 2.0 kW / 10.0 kW @ 800 MHz
No. of Inputs	5
Connector Spacing	2U
Return Loss / VSWR	> 24 dB / < 1.13
Isolation	> 30 dB
Amplitude Response	-7.10 ±0.7 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	676x212x134 mm / 18.2 kg (40.1 lb.)
Connectors <sup>(2)</sup>	<b>9x 32 mm Inputs (5x); Loads (4x)</b>

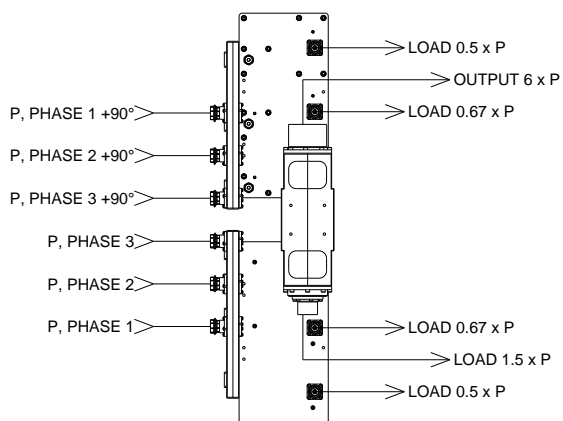
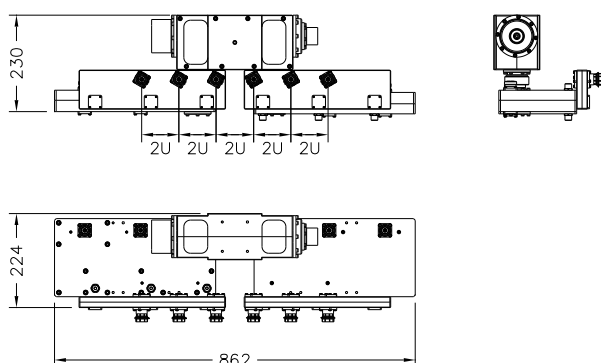
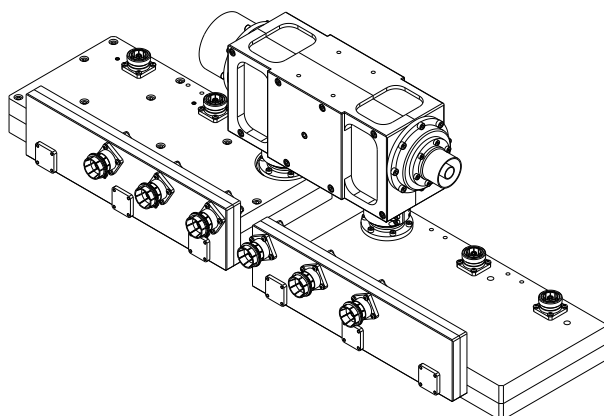
D-PC32E	7-16 Female (Default)
D-PC32F	7-16 Male
D-PC32G	7/8" FastLine Socket
D-PC32H	7/8" EIA FastLine Flange
D-PC32I	7/8" FastLine Plug
D-PC32IO	7/8" Quick Plug
<b>1x 64 mm Output</b>	
D-PC64J	1+5/8" FastLine Socket (Default)
D-PC64K	1+5/8" EIA FastLine Flange
D-PC64L	1+5/8" FastLine Plug
D-PC64M	3+1/8" FastLine Socket
D-PC64N	3+1/8" EIA FastLine Flange

Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads
	O-MH.02 Output on the Left
	O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 6-Input Progressive Multicoupler

MH6P60RC



## FEATURES

- 6-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

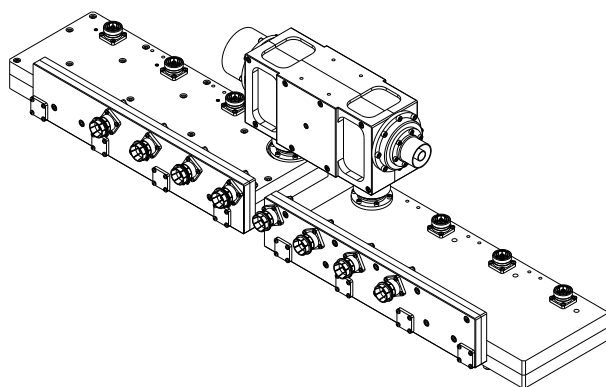
## SPECIFICATIONS

Code / Revision	C-MH6P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 15.0 kW @ 450 MHz 2.0 kW / 12.0 kW @ 800 MHz
No. of Inputs	6
Connector Spacing	2U
Return Loss / VSWR	> 25 dB / < 1.12
Isolation	> 30 dB
Amplitude Response	-7.90 ±1.1 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	862x224x230 mm / 28 kg (62 lb.)
Connectors <sup>(2)</sup>	<b>10x 32 mm Inputs (6x); Loads (4x)</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug D-PC32IO 7/8" Quick Plug <b>1x 64 mm Load</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange <b>1x 100 mm Output</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug D-PC100P 4+1/2" FastLine Socket D-PC100Q 4+1/2" EIA FastLine Flange
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads O-MH.02 Output on the Left O-MH.03 Loads on the Left
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## 8-Input Progressive Multicoupler

MH8P60RC

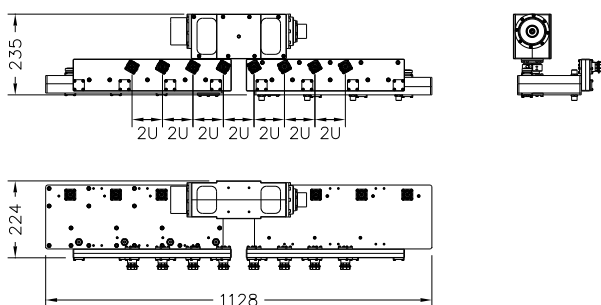


## FEATURES

- 8-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left



## SPECIFICATIONS

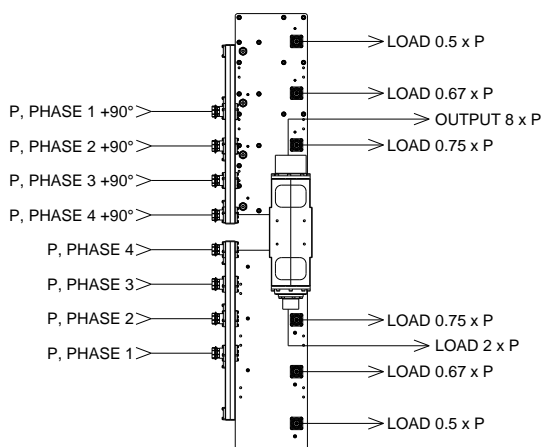
Code / Revision	C-MH8P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 20.0 kW @ 450 MHz 2.0 kW / 16.0 kW @ 800 MHz
No. of Inputs	8
Connector Spacing	2U
Return Loss / VSWR	> 25 dB / < 1.12
Isolation	> 30 dB
Amplitude Response	-9.20 ±1.2 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	1128x224x235 mm / 32 kg (71 lb.)

Connectors <sup>(2)</sup>	<b>14x 32 mm Inputs (8x); Loads (6x)</b>
	D-PC32E 7-16 Female (Default)
	D-PC32F 7-16 Male
	D-PC32G 7/8" FastLine Socket
	D-PC32H 7/8" EIA FastLine Flange
	D-PC32I 7/8" FastLine Plug
	D-PC32IO 7/8" Quick Plug
	<b>1x 64 mm Load</b>
	D-PC64J 1+5/8" FastLine Socket (Default)
	D-PC64K 1+5/8" EIA FastLine Flange
	<b>1x 100 mm Output</b>
	D-PC100M 3+1/8" FastLine Socket (Default)
	D-PC100N 3+1/8" EIA FastLine Flange
	D-PC100O 3+1/8" FastLine Plug
	D-PC100P 4+1/2" FastLine Socket
	D-PC100Q 4+1/2" EIA FastLine Flange

Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads
	O-MH.02 Output on the Left
	O-MH.03 Loads on the Left

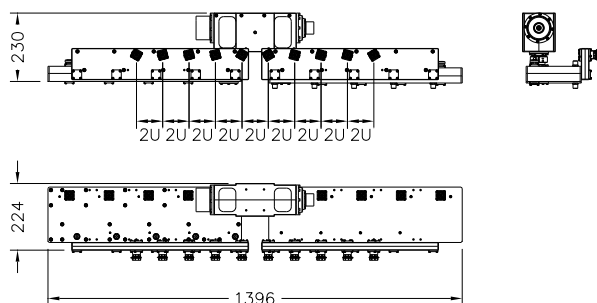
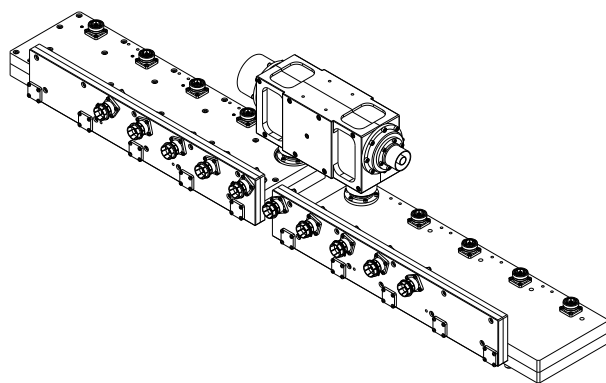
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



## 10-Input Progressive Multicoupler

MH10P60RC



## FEATURES

- 10-Input
- Progressive Power Combination System
- 2U Unified Connector Spacing
- Interchangeable Connector System
- Driving Splitter: PS Series (Optional)

## OPTIONS

- Liquid Cooled Integrated Loads
- Output on the Left
- Loads on the Left

## SPECIFICATIONS

Code / Revision	C-MH10P60RC / A
Frequency Range	450-800 MHz
Max RMS Input / Output Power	2.5 kW / 25.0 kW @ 450 MHz 2.0 kW / 20.0 kW @ 800 MHz
No. of Inputs	10
Connector Spacing	2U
Return Loss / VSWR	> 23 dB / < 1.15
Isolation	> 30 dB
Amplitude Response	-10.20 ±1.2 dB
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	1396x224x230 mm / 44 kg (97 lb.)

Connectors <sup>(2)</sup> 18x 32 mm Inputs (10x); Loads (8x)

D-PC32E	7-16 Female (Default)
D-PC32F	7-16 Male
D-PC32G	7/8" FastLine Socket
D-PC32H	7/8" EIA FastLine Flange
D-PC32I	7/8" FastLine Plug
D-PC32IO	7/8" Quick Plug

## 1x 64 mm Load

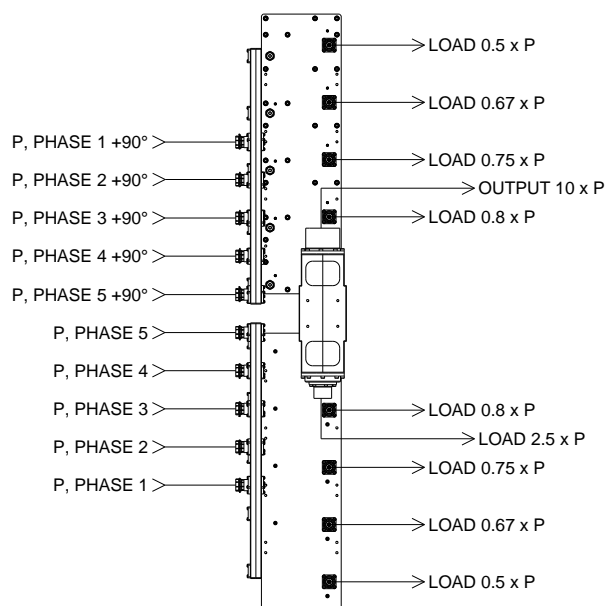
D-PC64J	1+5/8" FastLine Socket (Default)
D-PC64K	1+5/8" EIA FastLine Flange

## 1x 100 mm Output

D-PC100M	3+1/8" FastLine Socket (Default)
D-PC100N	3+1/8" EIA FastLine Flange
D-PC100O	3+1/8" FastLine Plug
D-PC100P	4+1/2" FastLine Socket
D-PC100Q	4+1/2" EIA FastLine Flange

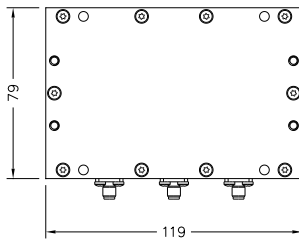
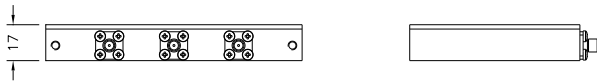
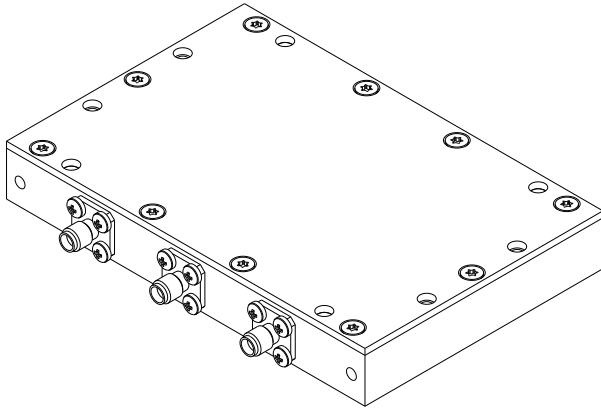
Options <sup>(2)</sup>	O-MH.01 Integrated Liquid Cooled Loads
	O-MH.02 Output on the Left
	O-MH.03 Loads on the Left

Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Male
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# 2-Way Quadrature Splitter

**QS2C**


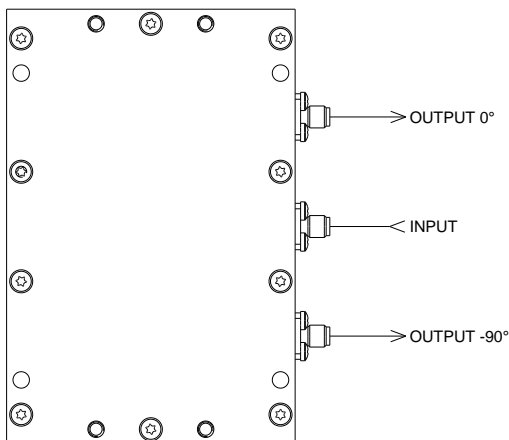
## FEATURES

- 2-Way
- Quadrature Power Combination System
- Flat Frequency Response
- Designed for "MC Series" Multicouplers

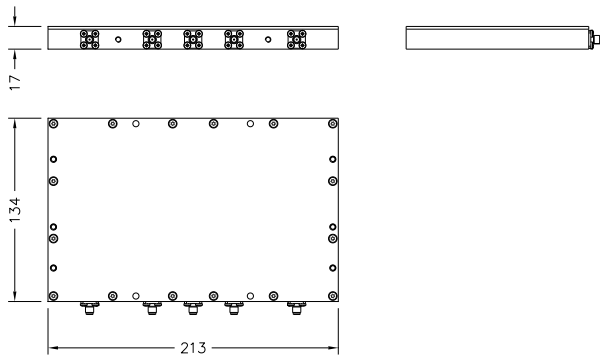
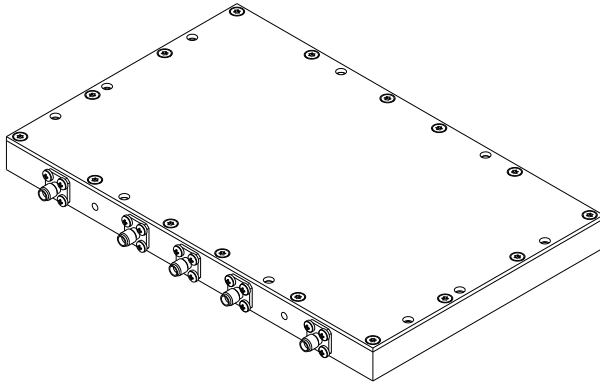
## SPECIFICATIONS

Code / Revision	C-QS2C / A
Frequency Range	470-862 MHz
Max RMS Input Power	10.0 W
Insertion Loss	< 0.6 dB (over the theoretical -3.01 dB)
Return Loss / VSWR	> 22 dB / < 1.17
Isolation	> 22 dB
Amplitude Balance	< ±0.1 dB
Phase Response	-90° / 0° (±3°)
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	119x79x17 mm / 0.3 kg (0.7 lb.)
Connectors <sup>(2)</sup>	<b>3x 12 mm Input (1x); Outputs (2x)</b> D-PC12A SMA Female (Default) D-PC12C N Female

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# 4-Way Quadrature Splitter

**QS4C**


## FEATURES

- 4-Way
- 3-Way obtained by terminating unused output port
- Quadrature Power Combination System
- Flat Frequency Response
- Designed for "MC Series" Multicouplers

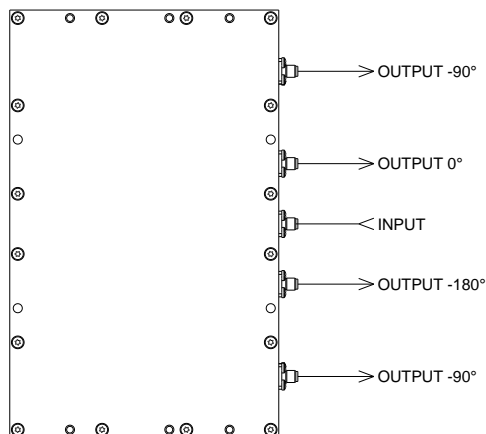
## OPTIONS

- SMA / N Loads

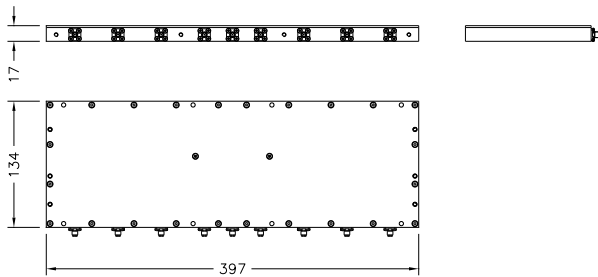
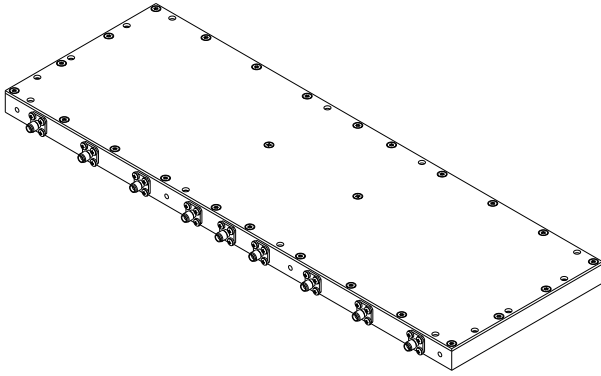
## SPECIFICATIONS

Code / Revision	C-QS4C / A
Frequency Range	470-862 MHz
Max RMS Input Power	10.0 W
Insertion Loss	< 1.2 dB (over the theoretical -6.02 dB)
Return Loss / VSWR	> 22 dB / < 1.17
Isolation	> 22 dB
Amplitude Balance	< $\pm 0.2$ dB
Phase Response	-180° / -90° / -90° / 0° ( $\pm 6^\circ$ )
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	213x134x17 mm / 0.8 kg (1.8 lb.)
Connectors <sup>(2)</sup>	<b>5x 12 mm Input (1x); Outputs (4x)</b>
	D-PC12A SMA Female (Default)
	D-PC12C N Female
Options	O-QL.01 SMA Load
	O-QL.02 N Load

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



# 8-Way Quadrature Splitter

**QS8C**


## FEATURES

- 8-Way
- 6-Way, 5-Way obtained by terminating unused output ports
- Quadrature Power Combination System
- Flat Frequency Response
- Designed for "MC Series" Multicouplers

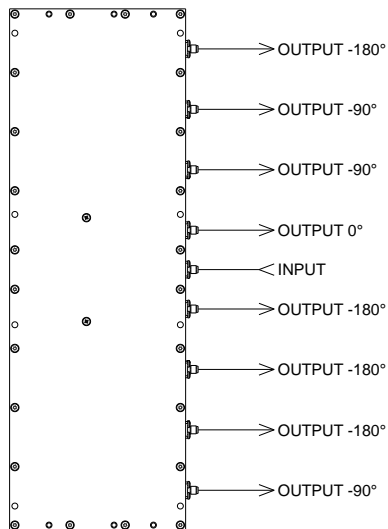
## OPTIONS

- SMA / N Loads

## SPECIFICATIONS

Code / Revision	C-QS8C / A
Frequency Range	470-862 MHz
Max RMS Input Power	10.0 W
Insertion Loss	< 1.8 dB (over the theoretical -9.03 dB)
Return Loss / VSWR	> 22 dB / < 1.17
Isolation	> 22 dB
Amplitude Balance	< $\pm 0.3$ dB
Phase Response	-90° / -180° / -180° / -270° / 0° / -90° / -90°/-180° ( $\pm 9^\circ$ )
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	397x134x17 mm / 1.5 kg (3.3 lb.)
Connectors <sup>(2)</sup>	<b>9x 12 mm</b> <b>Input (1x); Outputs (8x)</b> D-PC12A SMA Female (Default) D-PC12C N Female
Options	O-QL.01 SMA Load O-QL.02 N Load

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



3-Way Progressive Splitter

PS3C

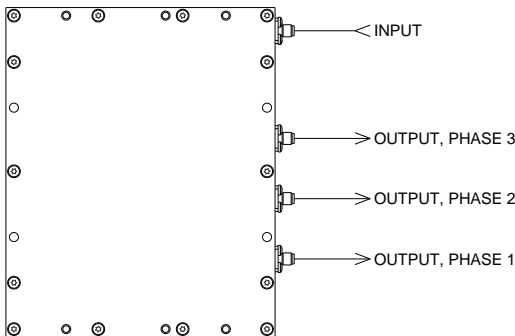
FEATURES

- 3-Way
- Progressive Power Combination System
- Designed for “MH Series” Multicouplers

SPECIFICATIONS

Code / Revision	C-PS3C / A
Frequency Range	470-800 MHz
Max RMS Input Power	10.0 W
Insertion Loss	< 3.5 dB (over the theoretical –4.77 dB)
Return Loss / VSWR	> 20 dB / < 1.22
Isolation	> 20 dB
Amplitude Balance	< ±0.5 dB
Phase Response	Matched to MH3P60C / MH3P60RC
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	-
Connector Interface	4 x 12 mm
Connectors <sup>(2)</sup>	<b>4x 12 mm Input (1x); Output (3x)</b> D-PC12A SMA Female (Default) D-PC12C N Female

<sup>(1)</sup> Default configuration    <sup>(2)</sup> Other Connectors available



5-Way Progressive Splitter

PS5C

FEATURES

- 5-Way
- 4-Way obtained by terminating unused output port
- Progressive Power Combination System
- Designed for “MH Series” Multicouplers

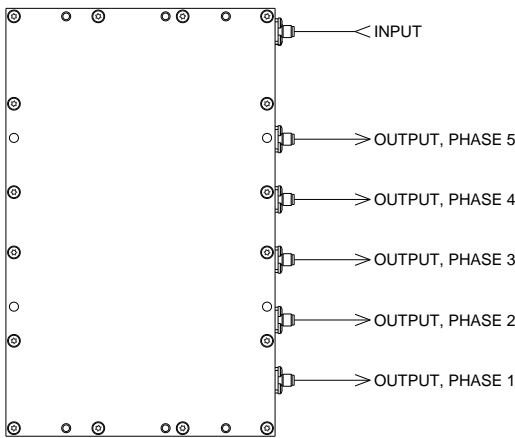
OPTIONS

- SMA / N Loads

SPECIFICATIONS

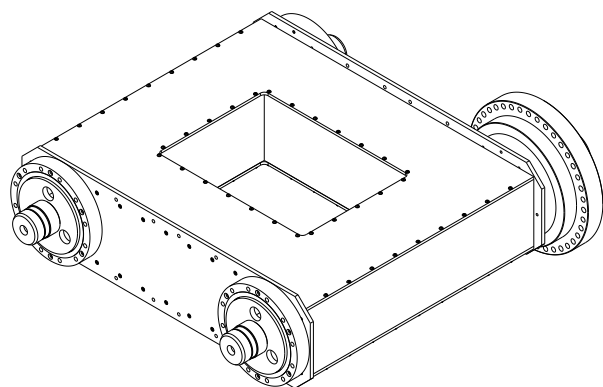
Code / Revision	C-PS5C / A
Frequency Range	470-800 MHz
Max RMS Input Power	10.0 W
Insertion Loss	< 4.0 dB (over the theoretical -6.99 dB)
Return Loss / VSWR	> 20 dB / < 1.22
Isolation	> 20 dB
Amplitude Balance	< ±0.5 dB
Phase Response	Matched to MH5P60C / MH5P60RC
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	-
Connector Interface	6 x 12 mm
Connectors <sup>(2)</sup>	<b>6x 12 mm Input (1x); Output (5x)</b> D-PC12A SMA Female (Default) D-PC12C N Female
Options	O-QL.01 SMA Load O-QL.02 N Load

<sup>(1)</sup> Default configuration    <sup>(2)</sup> Other Connectors available



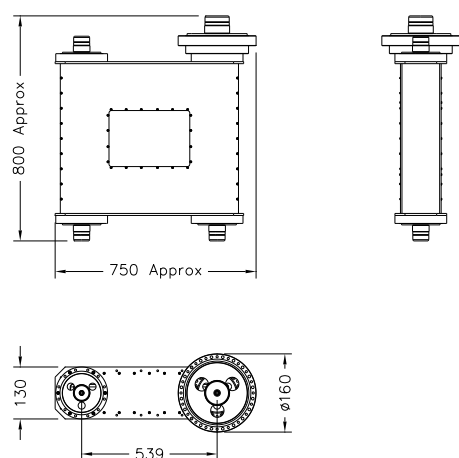
## 176 MHz Power Coupler

RH80Q176



## FEATURES

- Crossed configuration
- Hybrid Ring Design



## SPECIFICATIONS

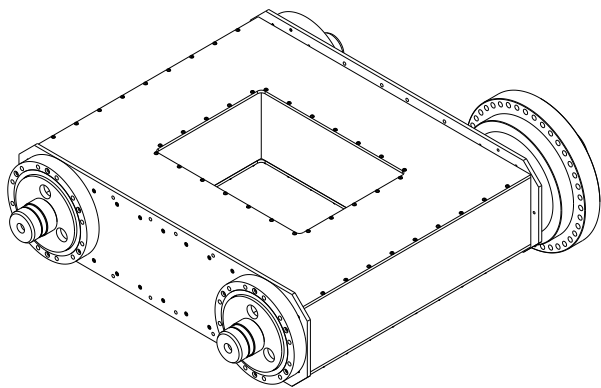
Code / Revision	E-RH80Q176 / A
Frequency Range	176 $\pm$ 2 MHz
Max RMS Input / Output Power	2x 37.5 kW / 75 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 $\pm$ 0.1 dB
Phase Response	0° / -90° $\pm$ 0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	130x800x750 mm
Connectors	3x EIA 3+1/8" Flange
	1x EIA 4+1/2" Flange

<sup>(1)</sup> Default configuration



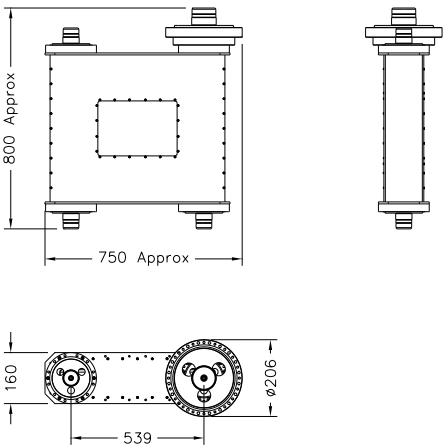
176 MHz Power Coupler

RH110Q176



FEATURES

- Crossed configuration
- Hybrid Ring Design

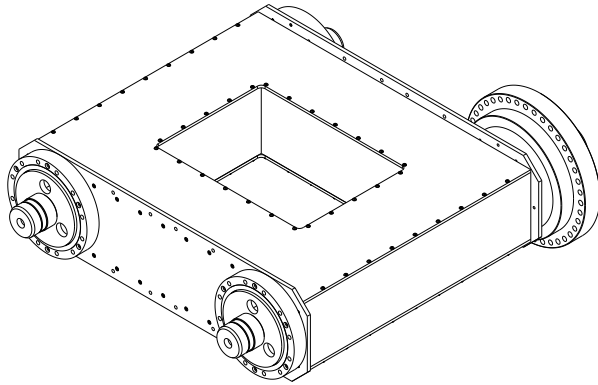


SPECIFICATIONS

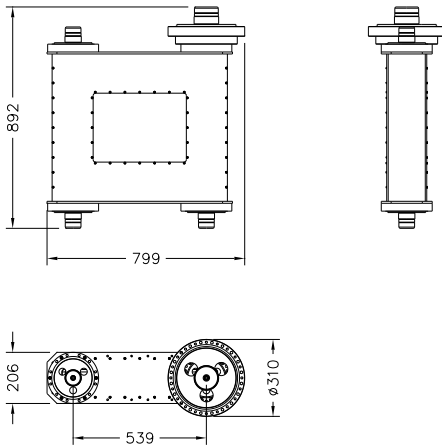
Code / Revision	E-RH110Q176 / A
Frequency Range	176 ±2 MHz
Max RMS Input / Output Power	2x 75 kW / 150 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 ±0.1 dB
Phase Response	0° / -90° ±0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	160x800x750 mm
Connectors	3x EIA 4+1/2" Flange
	1x EIA 6+1/8" Flange

<sup>(1)</sup> Default configuration

## 176 MHz Power Coupler

**RH150Q176****FEATURES**

- Crossed configuration
- Hybrid Ring Design

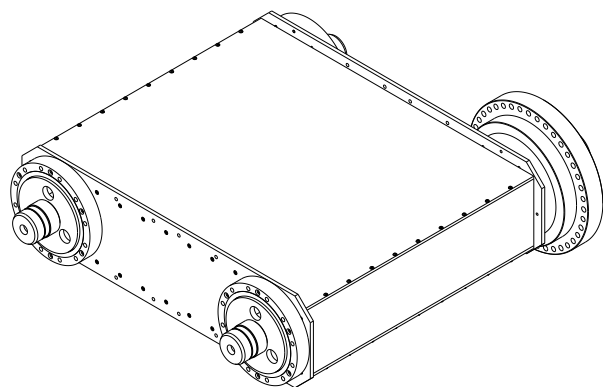
**SPECIFICATIONS**

Code / Revision	E-RH150Q176 / A
Frequency Range	176 $\pm$ 2 MHz
Max RMS Input / Output Power	2x 150 kW / 300 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 $\pm$ 0.1 dB
Phase Response	0° / -90° $\pm$ 0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	206x892x799 mm / 67 kg (148 lb.)
Connectors	3x EIA 6+1/8" Flange
	1x EIA 9+3/16" Flange with inner connector

<sup>(1)</sup> Default configuration

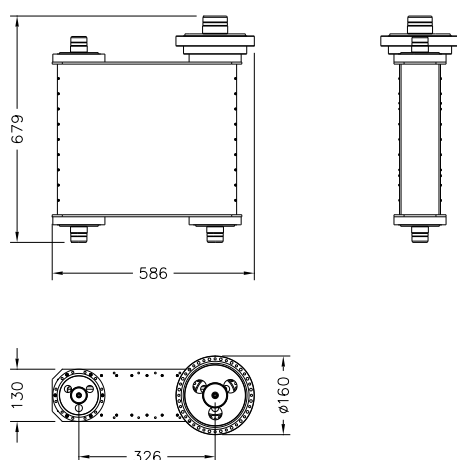
## 352 MHz Power Coupler

RH80Q352



## FEATURES

- Crossed configuration
- Hybrid Ring Design



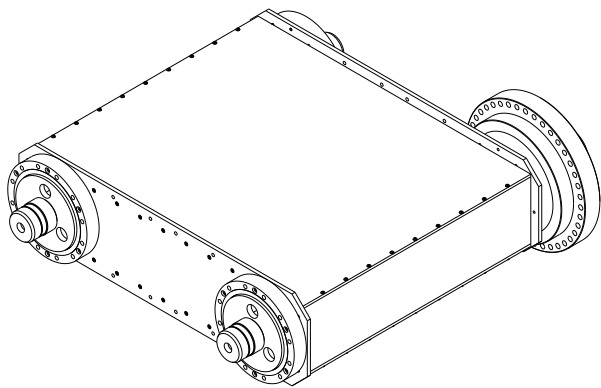
## SPECIFICATIONS

Code / Revision	E-RH80Q352 / A
Frequency Range	352 $\pm$ 2 MHz
Max RMS Input / Output Power	2x 27.5 kW / 55 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 $\pm$ 0.1 dB
Phase Response	0° / -90° $\pm$ 0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	130x679x586 mm
Connectors	3x EIA 3+1/8" Flange
	1x EIA 4+1/2" Flange

<sup>(1)</sup> Default configuration

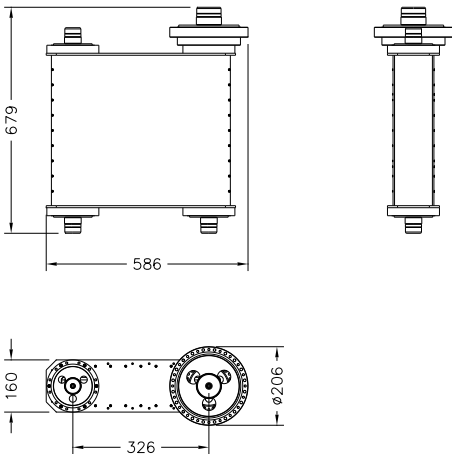
352 MHz Power Coupler

RH110Q352



FEATURES

- Crossed configuration
- Hybrid Ring Design



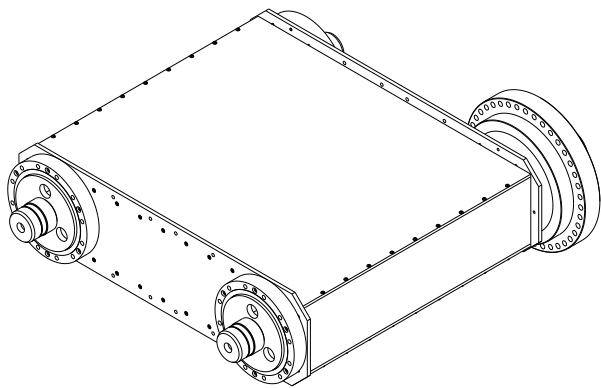
SPECIFICATIONS

Code / Revision	E-RH110Q352 / A
Frequency Range	352 $\pm$ 2 MHz
Max RMS Input / Output Power	2x 55 kW / 110 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 $\pm$ 0.1 dB
Phase Response	0° / -90° $\pm$ 0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	160x679x586 mm
Connectors	3x EIA 4+1/2" Flange
	1x EIA 6+1/8" Flange

<sup>(1)</sup> Default configuration

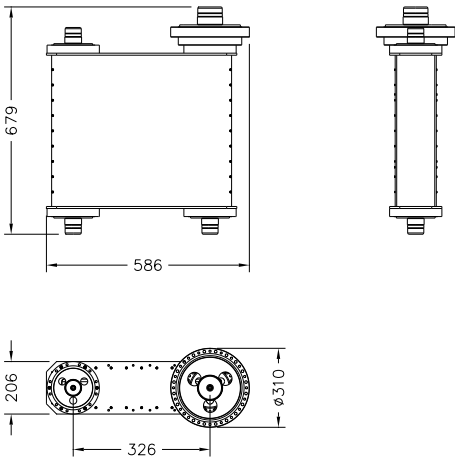
352 MHz Power Coupler

RH150Q352



FEATURES

- Crossed configuration
- Hybrid Ring Design



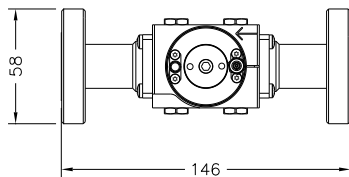
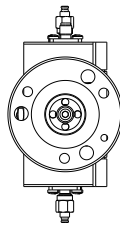
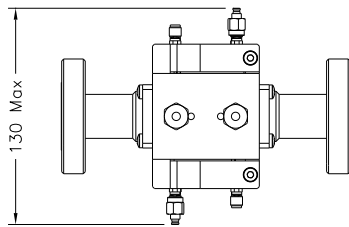
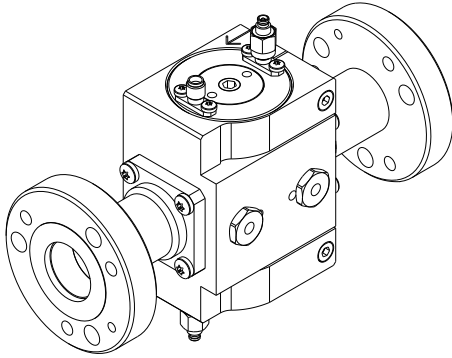
SPECIFICATIONS

Code / Revision	E-RH150Q352 / A
Frequency Range	352 $\pm$ 2 MHz
Max RMS Input / Output Power	2x 110 kW / 220 kW
Return Loss / VSWR	> 30 dB / < 1.07
Isolation	> 30 dB
Amplitude Response	-3.02 $\pm$ 0.1 dB
Phase Response	0° / -90° $\pm$ 0.5°
Max Operating Temperature	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	206x679x586 mm
Connectors	3x EIA 6+1/8" Flange
	1x EIA 9+3/16" Flange with inner connector

<sup>(1)</sup> Default configuration

## 2-Slot 7/8" Directional Coupler

DC2A23



## FEATURES

- 2-Slot (Up to 2 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

## SPECIFICATIONS

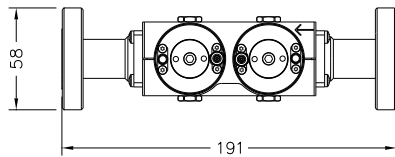
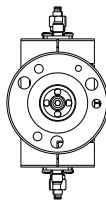
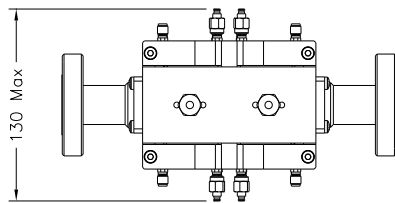
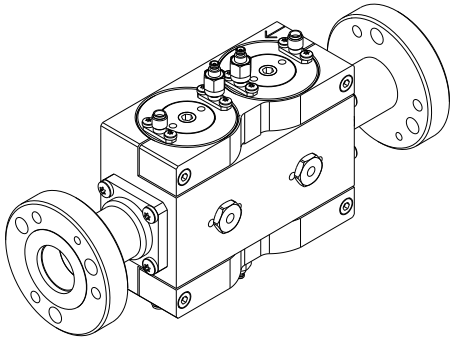
Code / Revision	C-DC2A23 / A
Frequency Range	100-800 MHz
Max RMS Output Power	7.0 kW @ 100 MHz 5.0 kW @ 200 MHz 3.5 kW @ 400 MHz 2.5 kW @ 800 MHz
No. of Probes	Up to 2
Coupling Range	-40 to -60 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	146x58x320 mm / 0,7 kg (1,54 lb.)
Connectors <sup>(3)</sup>	<b>2x 32 mm Series</b> <b>Input; Output</b> D-PC32H    7/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01    SMA Female RF Detector O-DT.02    N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors/Options available



## 4-Slot 7/8" Directional Coupler

DC4A23



## FEATURES

- 4-Slot (Up to 4 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

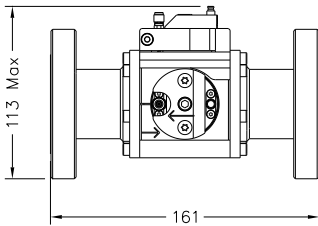
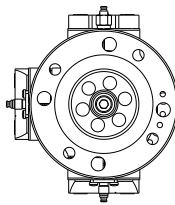
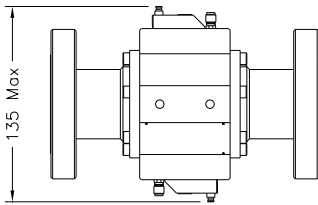
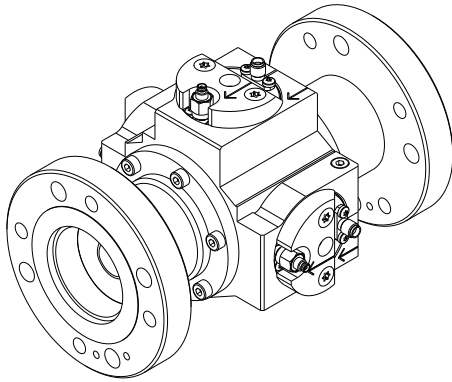
## SPECIFICATIONS

Code / Revision	C-DC4A23 / A
Frequency Range	100-800 MHz
Max RMS Output Power	7.0 kW @ 100 MHz 5.0 kW @ 200 MHz 3.5 kW @ 400 MHz 2.5 kW @ 800 MHz
No. of Probes	Up to 2
Coupling Range	-40 to -60 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	191x58x130 mm / 1,0 kg (2.2 lb.)
Connectors <sup>(3)</sup>	<b>2x 32 mm Series</b> <b>Input; Output</b> D-PC32H    7/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01    SMA Female RF Detector O-DT.02    N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors/Options available

## 3-Slot 1+5/8" Directional Coupler

DC3A39



## FEATURES

- 3-Slot (Up to 3 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

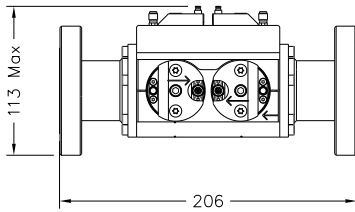
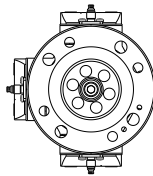
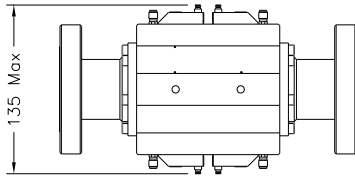
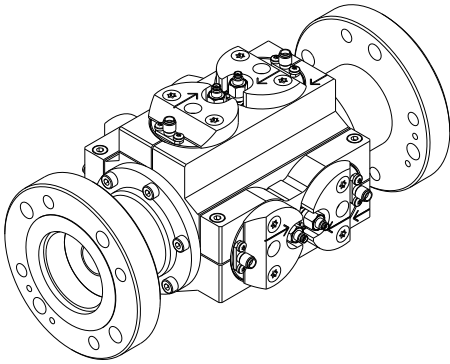
## SPECIFICATIONS

Code / Revision	C-DC3A39 / A
Frequency Range	100-800 MHz
Max RMS Output Power	20.0 kW @ 100 MHz 14.0 kW @ 200 MHz 10.0 kW @ 400 MHz 7.0 kW @ 800 MHz
No. of Probes	Up to 3
Coupling Range	-46 to -66 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	161x113x135 mm / 1.2 kg (2.7 lb.)
Connectors <sup>(3)</sup>	<b>2 x 64 mm Series</b> <b>Input; Output</b> D-PC64K 1+5/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 6-Slot 1+5/8" Directional Coupler

DC6A39



## FEATURES

- 6-Slot (Up to 6 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

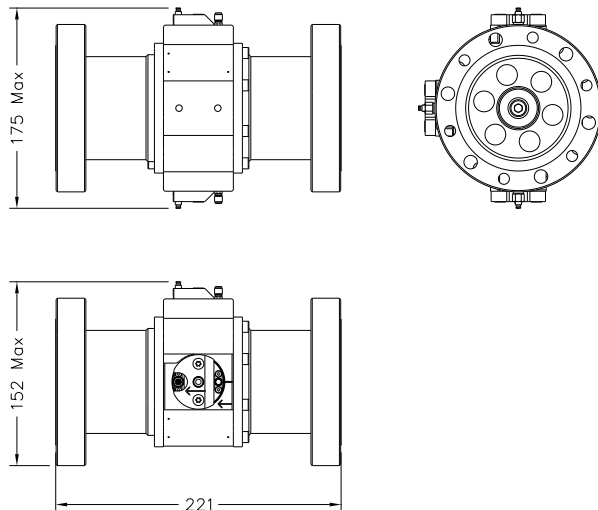
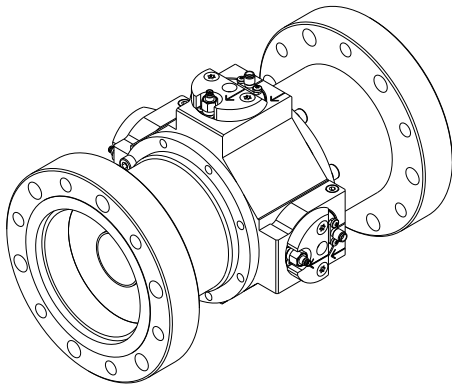
## SPECIFICATIONS

Code / Revision	C-DC6A39 / A
Frequency Range	100-800 MHz
Max RMS Output Power	20.0 kW @ 100 MHz 14.0 kW @ 200 MHz 10.0 kW @ 400 MHz 7.0 kW @ 800 MHz
No. of Probes	Up to 6
Coupling Range	-46 to -66 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	206x113x135 mm / 1,6 kg (4.2 lb.)
Connectors <sup>(3)</sup>	<b>2 x 64 mm Series</b> <b>Input; Output</b> D-PC64K 1+5/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 3-Slot 3+1/8" Directional Coupler

DC3A77



## FEATURES

- 3-Slot (Up to 3 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

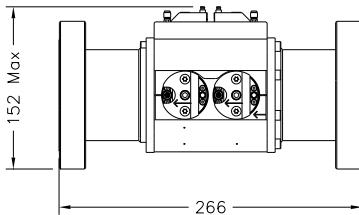
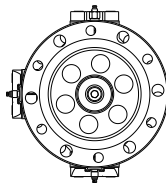
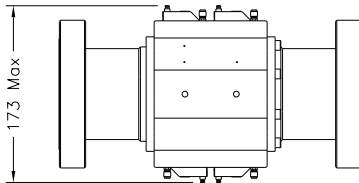
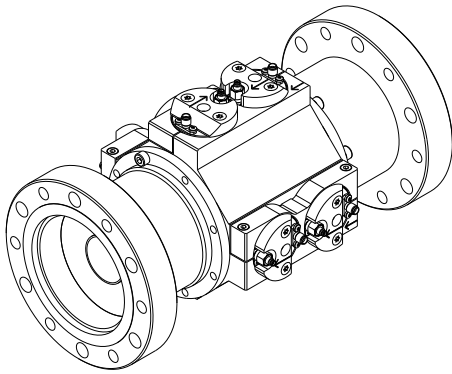
## SPECIFICATIONS

Code / Revision	C-DC3A77 / A
Frequency Range	100-800 MHz
Max RMS Output Power	60.0 kW @ 100 MHz 42.5 kW @ 200 MHz 30.0 kW @ 400 MHz 21.0 kW @ 800 MHz
No. of Probes	Up to 3
Coupling Range	-52 to -72 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	221x152x175 mm / 2.5 kg (5.5 lb.)
Connectors <sup>(3)</sup>	<b>2x 100 mm Series</b> <b>Input; Output</b> D-PC100N 3+1/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 6-Slot 3+1/8" Directional Coupler

DC6A77



## FEATURES

- 6-Slot (Up to 6 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

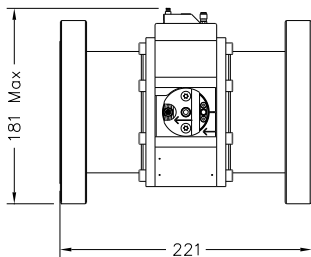
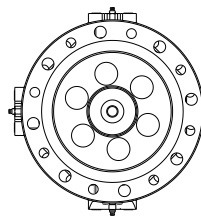
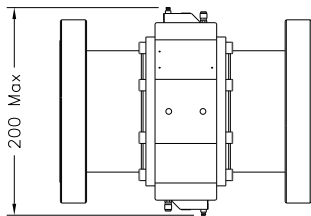
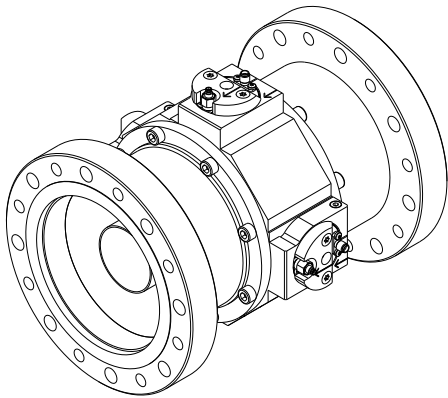
## SPECIFICATIONS

Code / Revision	C-DC6A77 / A
Frequency Range	100-800 MHz
Max RMS Output Power	60.0 kW @ 100 MHz 42.5 kW @ 200 MHz 30.0 kW @ 400 MHz 21.0 kW @ 800 MHz
No. of Probes	Up to 6
Coupling Range	-52 to -72 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	266x152x173 mm / 3,4 kg (7.5 lb.)
Connectors <sup>(3)</sup>	<b>2x 100 mm Series</b> <b>Input; Output</b> D-PC100N 3+1/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 3-Slot 4+1/2" Directional Coupler

DC3A103



## FEATURES

- 3-Slot (Up to 3 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

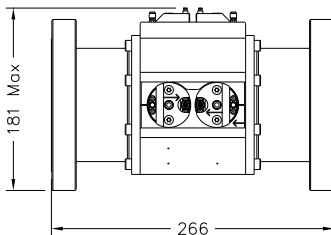
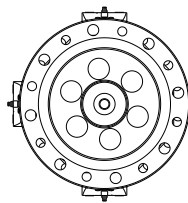
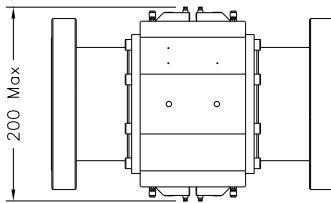
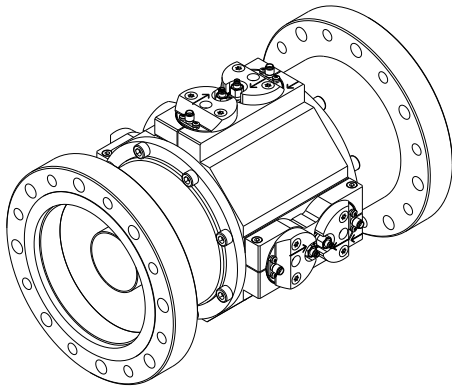
## SPECIFICATIONS

Code / Revision	C-DC3A103 / A
Frequency Range	100-800 MHz
Max RMS Output Power	100.0 kW @ 100 MHz 70.0 kW @ 200 MHz 50.0 kW @ 400 MHz 35.0 kW @ 800 MHz
No. of Probes	Up to 3
Coupling Range	-56 to -76 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	221x181x200 mm / 3.8 kg (8.4 lb.)
Connectors <sup>(3)</sup>	<b>2x 130 mm Series</b> <b>Input; Output</b> D-PC130Q 4+1/2" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 6-Slot 4+1/2" Directional Coupler

DC6A103



## FEATURES

- 6-Slot (Up to 6 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

## SPECIFICATIONS

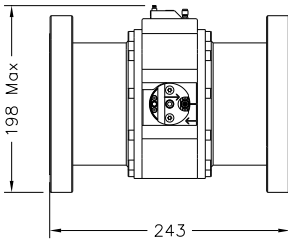
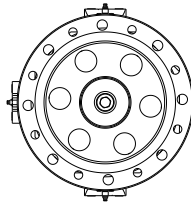
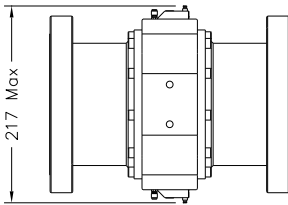
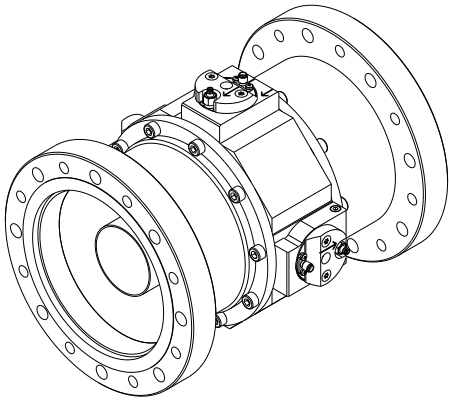
Code / Revision	C-DC6A103 / A
Frequency Range	100-800 MHz
Max RMS Output Power	100.0 kW @ 100 MHz 70.0 kW @ 200 MHz 50.0 kW @ 400 MHz 35.0 kW @ 800 MHz
No. of Probes	Up to 6
Coupling Range	-56 to -76 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	266x181x200 mm / 5.0 kg (11.0 lb.)
Connectors <sup>(3)</sup>	<b>2x 130 mm Series</b> <b>Input; Output</b> D-PC130Q 4+1/2" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available



## 3-Slot RL-120 Directional Coupler

DC3A120



## FEATURES

- 3-Slot (Up to 3 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

- SMA or N Female RF Detectors

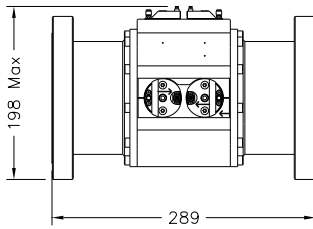
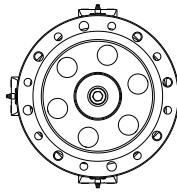
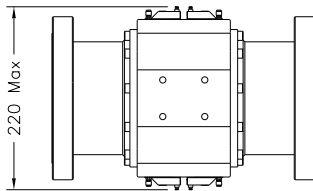
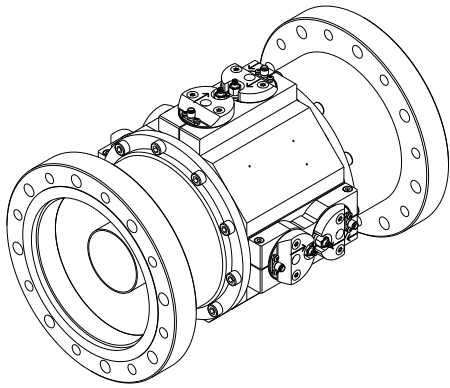
## SPECIFICATIONS

Code / Revision	C-DC3A120 / A
Frequency Range	100-800 MHz
Max RMS Output Power	130.0 kW @ 100 MHz 90.0 kW @ 200 MHz 65.0 kW @ 400 MHz 45.0 kW @ 800 MHz
No. of Probes	Up to 3
Coupling Range	-57 to -77 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	243x198x217 mm / 5.3 kg (11.7 lb.)
Connectors <sup>(3)</sup>	<b>2x 150 mm Series</b> Input; Output D-PC150V 6+1/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

## 6-Slot RL-120 Directional Coupler

DC6A120



## FEATURES

- 6-Slot (Up to 6 Probes)
- *Accuprobe*: Equalized Response Probes
- SMA or N Female Probe Connectors
- Interchangeable Probes
- Interchangeable Connector System

## OPTIONS

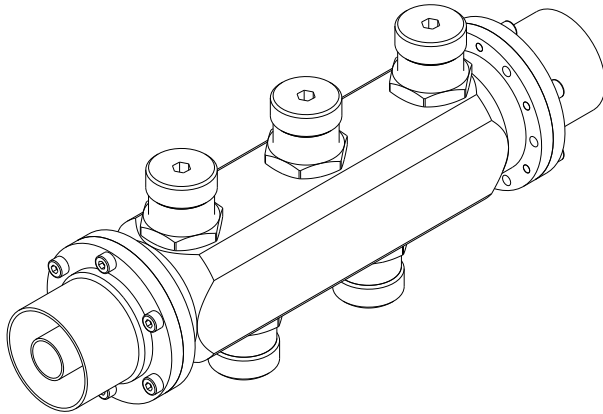
- SMA or N Female RF Detectors

## SPECIFICATIONS

Code / Revision	C-DC6A120 / A
Frequency Range	100-800 MHz
Max RMS Output Power	130.0 kW @ 100 MHz 90.0 kW @ 200 MHz 65.0 kW @ 400 MHz 45.0 kW @ 800 MHz
No. of Probes	Up to 6
Coupling Range	-57 to -77 dB
Coupling Flatness <sup>(1)</sup>	±0.15 dB
Return Loss / VSWR	> 36 dB / < 1.03
Directivity	> 32 dB
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	289x198x220 mm / 7.3 kg (16.1 lb.)
Connectors <sup>(3)</sup>	<b>2x 150 mm Series</b> <b>Input; Output</b> D-PC150V 6+1/8" EIA FastLine Flange
Options <sup>(3)</sup>	O-DT.01 SMA Female RF Detector O-DT.02 N Female RF Detector

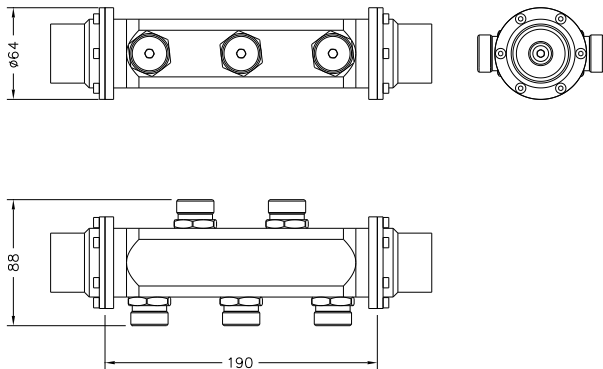
<sup>(1)</sup> Within *Accuprobe* range <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors/Options available

# 1+5/8" Matching Line

**ML39C**


## FEATURES

- 5 Matching Sections
- Interchangeable Connector System



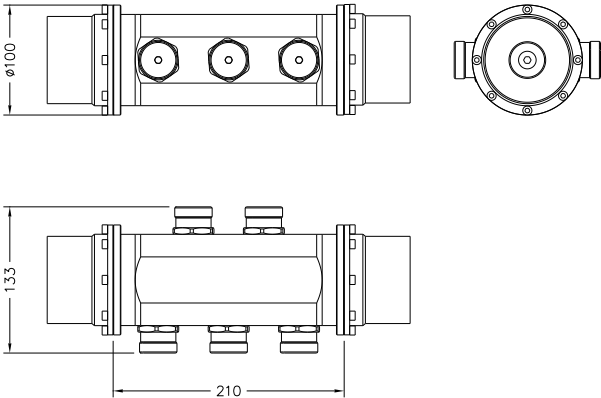
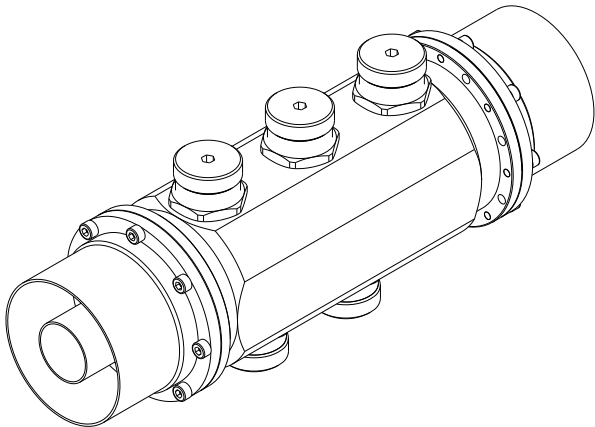
## SPECIFICATIONS

Code / Revision	C-ML39C / A
Frequency Range	400-800 MHz
Max RMS Output Power	7.0 kW
Matching Capability	from 18 dB R.L. (VSWR < 1.29) to 26 dB R.L. (VSWR < 1.11)
No. of sections	5
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	190x88x64 mm / 1.2 kg (2.6 lb.)
Connectors <sup>(2)</sup>	<b>2x 64 mm Input; Output</b> D-PC64J 1+5/8" FastLine Socket (Default) D-PC64K 1+5/8" EIA FastLine Flange D-PC64L 1+5/8" FastLine Plug

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

# 3+1/8" Matching Line

ML77C



## FEATURES

- 5 Matching Sections
- Interchangeable Connector System

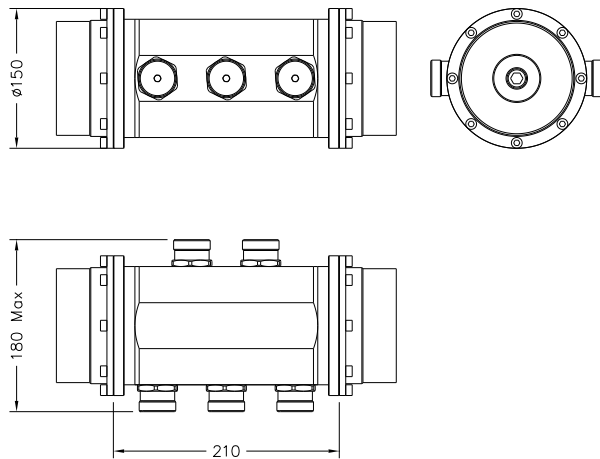
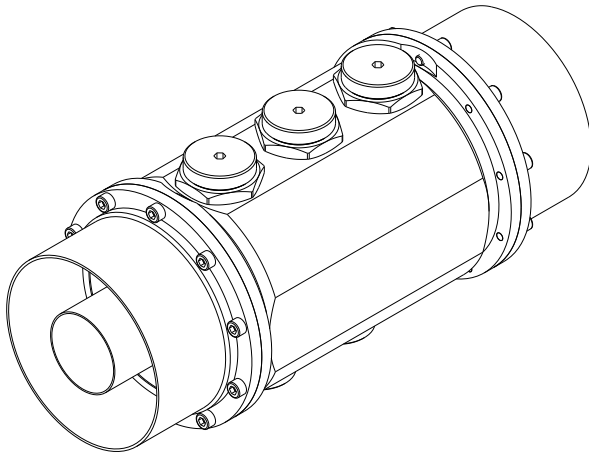
## SPECIFICATIONS

Code / Revision	C-ML77C / A
Frequency Range	400-800 MHz
Max RMS Output Power	21.0 kW
Matching Capability	from 18 dB R.L. (VSWR < 1.29) to 26 dB R.L. (VSWR < 1.11)
No. of sections	5
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	210x133x100 mm / 2.8 kg (6.2 lb.)
Connectors <sup>(2)</sup>	<b>2x 100 mm Input; Output</b> D-PC100M 3+1/8" FastLine Socket (Default) D-PC100N 3+1/8" EIA FastLine Flange D-PC100O 3+1/8" FastLine Plug

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

## RL-120 Matching Line

ML120C



## FEATURES

- 5 Matching Sections
- Interchangeable Connector System

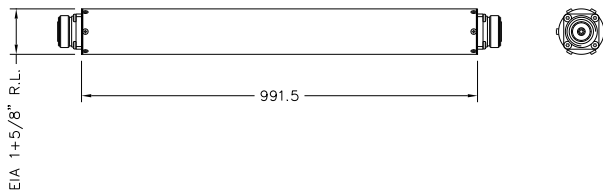
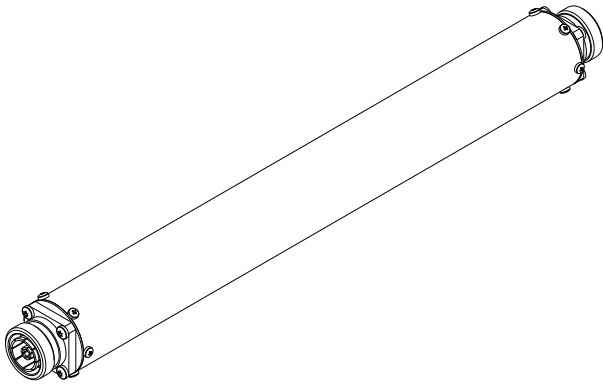
## SPECIFICATIONS

Code / Revision	C-ML120C / A
Frequency Range	400-800 MHz
Max RMS Output Power	45.0 kW
Matching Capability	from 18 dB R.L. (VSWR < 1.29)
	to 26 dB R.L. (VSWR < 1.11)
No. of sections	5
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	210x180x150 mm / 5 kg (11.0 lb.)
Connectors <sup>(2)</sup>	<b>2x 130 mm Input; Output</b>
	D-PC130P 4+1/2" FastLine Socket (Default)
	D-PC130Q 4+1/2" EIA FastLine Flange
	D-PC130R 4+1/2" FastLine Plug

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available

# Lowpass Filter

## LC39B



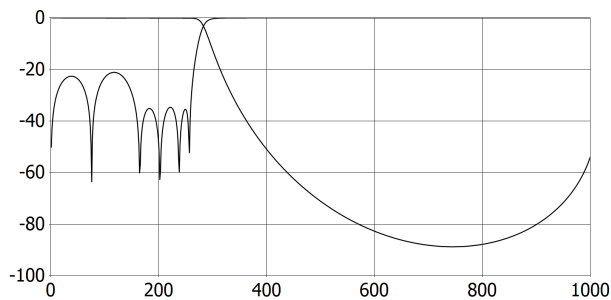
### FEATURES

- 11-Pole
- Interchangeable Connector System

### SPECIFICATIONS

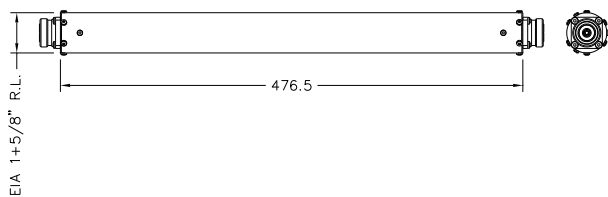
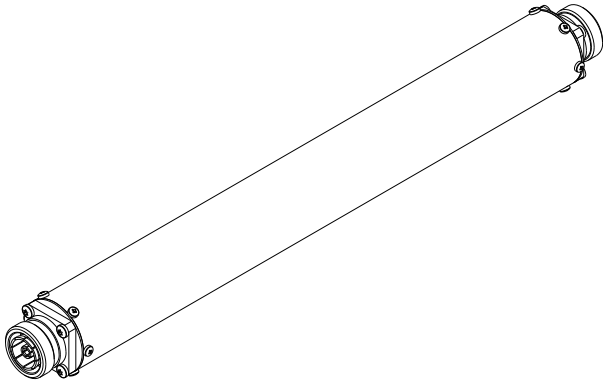
Code / Revision	C-LC39B / A
Frequency Range	DC to 240 MHz
Order	11-Pole
Max RMS Input Power	5.5 kW @ 170 MHz 4.25 kW @ 230 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 34 dB @ 348 MHz > 60 dB @ 450 to 950 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	991.5 mm, EIA 1+5/8" / 1.5 kg (3.3 lb.)
Connectors <sup>(2)</sup>	<b>2x 32 mm Input; Output</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug

<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available



## Lowpass Filter

LC39RC



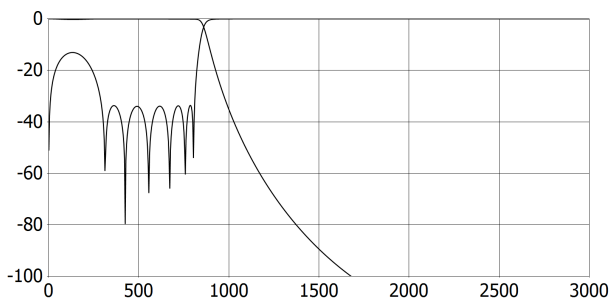
## FEATURES

- 15-Pole
- 800 MHz Cut-Off
- Interchangeable Connector System

## SPECIFICATIONS

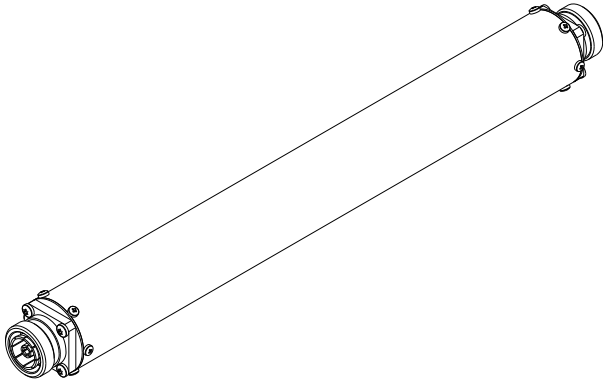
Code / Revision	C-LC39RC / A
Frequency Range	DC to 806 MHz
Order	15-Pole
Max RMS Input Power	2.5 kW @ 470 MHz 2.3 kW @ 700 MHz 1.6 kW @ 800 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 29 dB @ 940 MHz > 60 dB @ 1000 to 2600 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	476.5 mm, EIA 1+5/8" / 1.6 kg (3.5 lb.)
Connectors <sup>(2)</sup>	<b>2x 32 mm Input; Output</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug

<sup>(1)</sup> Default configuration    <sup>(2)</sup> Other Connectors available



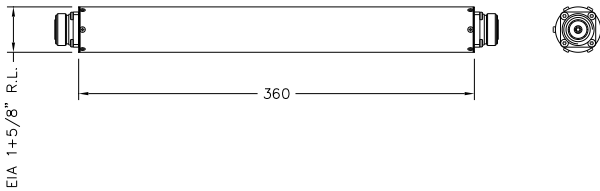
# Lowpass Filter

## LC39C



### FEATURES

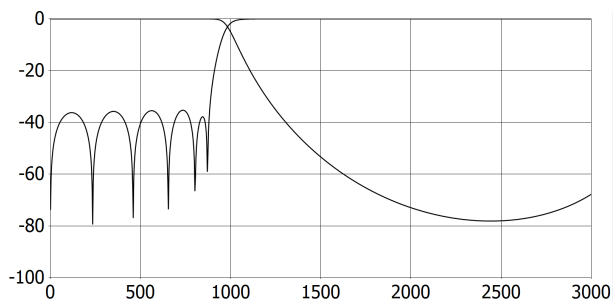
- 11-Pole
- 800 MHz Cut-Off
- Interchangeable Connector System



### SPECIFICATIONS

Code / Revision	C-LC39C / A
Frequency Range	DC to 862 MHz
Order	11-Pole
Max RMS Input Power	2.5 kW @ 470 MHz 2.5 kW @ 700 MHz 2.5 kW @ 800 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 25 dB @ 1100 MHz > 60 dB @ 1800 to 2600MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	360 mm, EIA 1+5/8" / 1.7 kg (3.7 lb.)
Connectors <sup>(2)</sup>	<b>2x 32 mm Input; Output</b> D-PC32E 7-16 Female (Default) D-PC32F 7-16 Male D-PC32G 7/8" FastLine Socket D-PC32H 7/8" EIA FastLine Flange D-PC32I 7/8" FastLine Plug

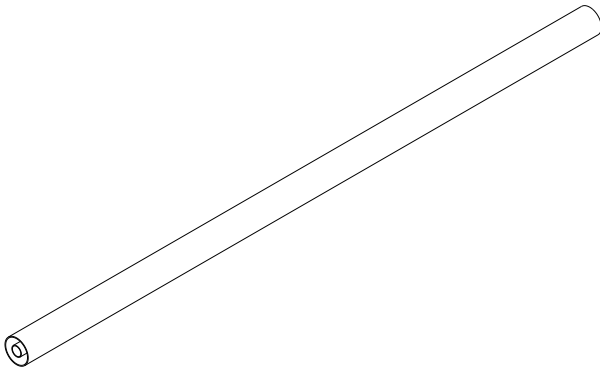
<sup>(1)</sup> Default configuration <sup>(2)</sup> Other Connectors available





## 1+5/8" Lowpass Filter

LP39B

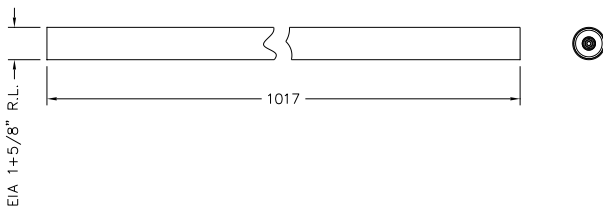


## FEATURES

- 11-Pole
- Rigid Line Design

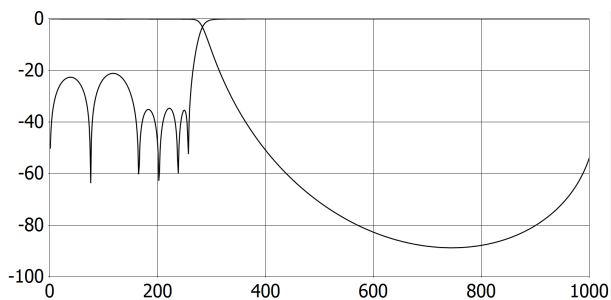
## OPTIONS

- Flange



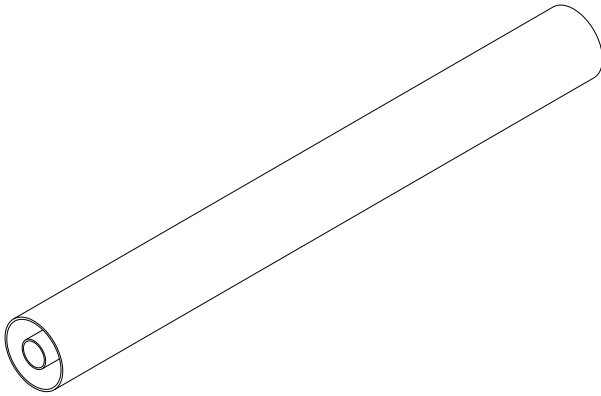
## SPECIFICATIONS

Code / Revision	C-LP39B / A
Frequency Range	DC to 240 MHz
Order	11-Pole
Max RMS Input Power	5.5 kW @ 170 MHz 4.25 kW @ 230 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 34 dB @ 348 MHz > 60 dB @ 450 to 950 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	1017 mm, EIA 1+5/8" / 1.5 kg (3.3 lb.)
Interface	1+5/8" Rigid Line
Options	D-LP.01 1+5/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration

## 1+5/8" Lowpass Filter

LP39RC

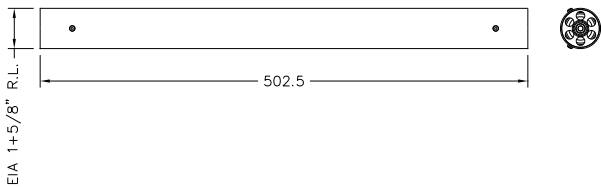


## FEATURES

- 15-Pole
- 800 MHz Cut-Off
- Rigid Line Design

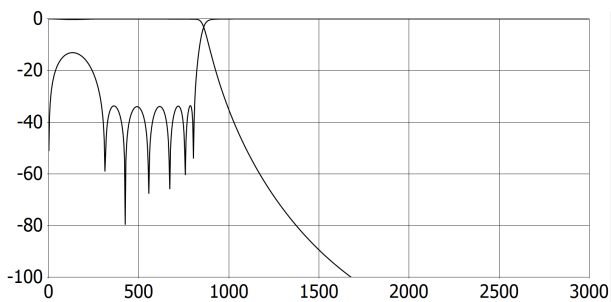
## OPTIONS

- Flange

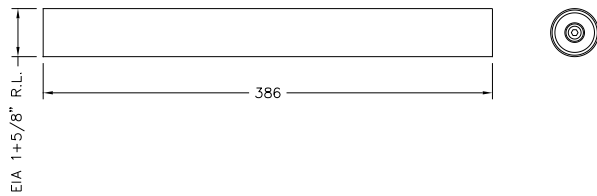
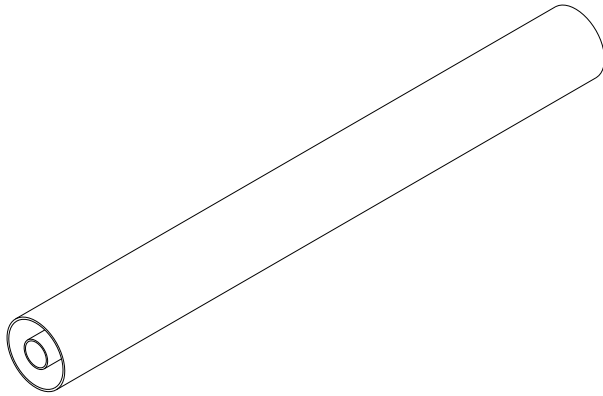


## SPECIFICATIONS

Code / Revision	C-LP39RC / A
Frequency Range	DC to 806 MHz
Order	15-Pole
Max RMS Input Power	3.5 kW @ 470 MHz 2.3 kW @ 700 MHz 1.6 kW @ 800 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 29 dB @ 940 MHz > 60 dB @ 1000 to 2600 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	502.5 mm, EIA 1+5/8" / 1.4 kg (3.1 lb.)
Interface	1+5/8" Rigid Line
Options	D-LP.01 1+5/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration

## 1+5/8" Lowpass Filter



## FEATURES

- 11-Pole
- 800 MHz Cut-Off
- Rigid Line Design

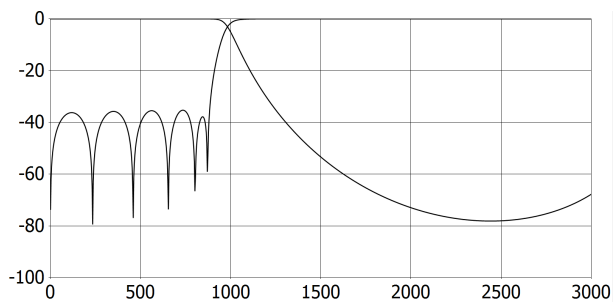
## OPTIONS

- Flange

## SPECIFICATIONS

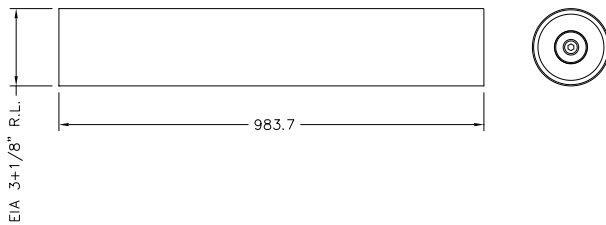
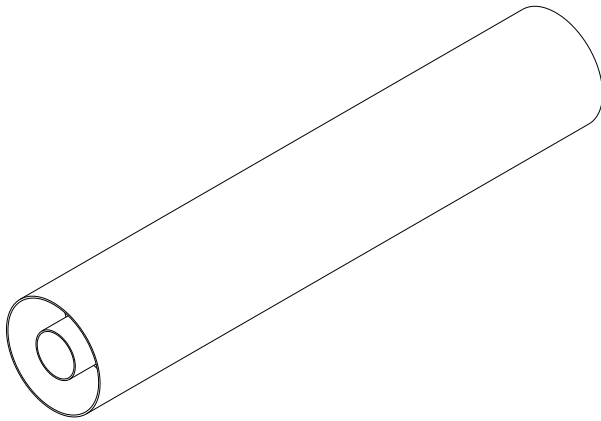
Code / Revision	C-LP39C / A
Frequency Range	DC to 862 MHz
Order	11-Pole
Max RMS Input Power	6.5 kW @ 470 MHz 4.25 kW @ 700 MHz 3.5 kW @ 800 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 25 dB @ 1100 MHz > 60 dB @ 1800 to 2600 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	386 mm, EIA 1+5/8" / 1.5 kg (3.3 lb.)
Interface	1+5/8" Rigid Line
Options	D-LP.01 1+5/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration



# 3+1/8" Lowpass Filter

## LP77B



### FEATURES

- 11-Pole
- Rigid Line Design

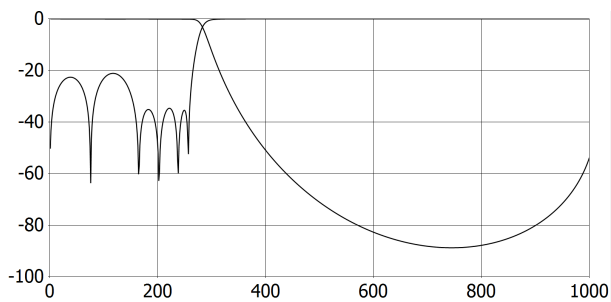
### OPTIONS

- Flange

### SPECIFICATIONS

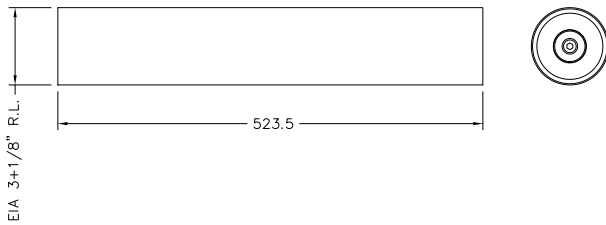
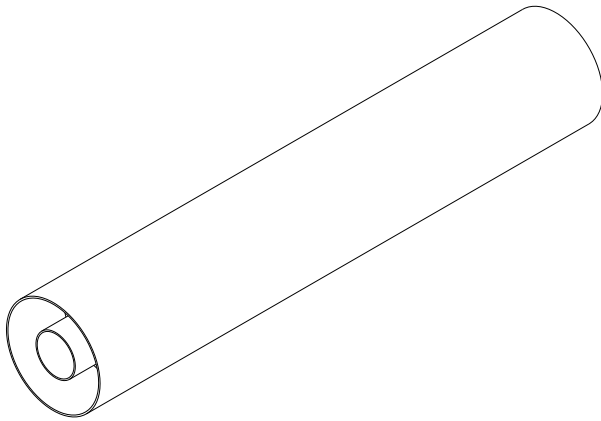
Code / Revision	C-LP77B / A
Frequency Range	DC to 240 MHz
Order	11-Pole
Max RMS Input Power	18.0 kW @ 170 MHz 13.0 kW @ 230 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 34 dB @ 348 MHz > 60 dB @ 450 to 950 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	983.7 mm, EIA 3+1/8" / 3.5 kg (7.7 lb.)
Interface	3+1/8" Rigid Line
Options	D-LP.03 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration



## 3+1/8" Lowpass Filter

LP77RC



## FEATURES

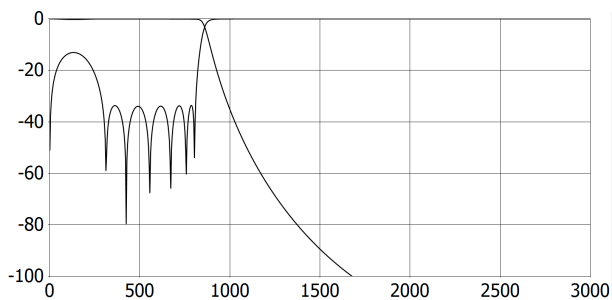
- 15-Pole
- 800 MHz Cut-Off
- Rigid Line Design

## OPTIONS

- Flange

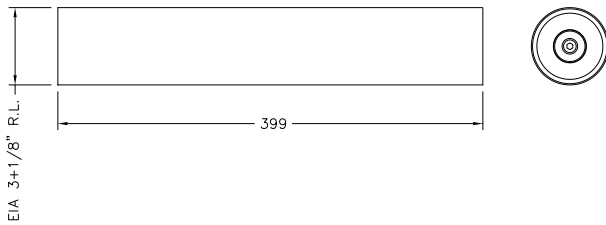
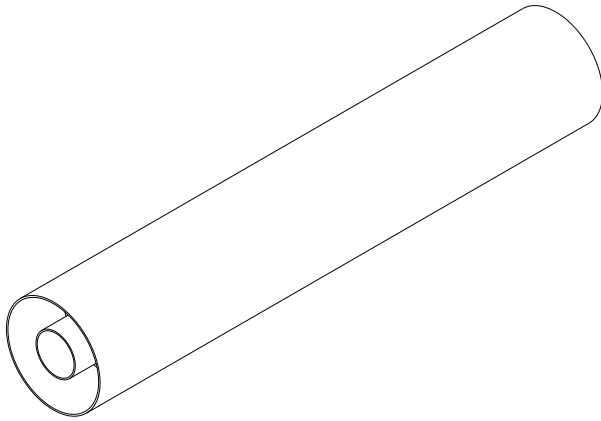
## SPECIFICATIONS

Code / Revision	C-LP77RC / A
Frequency Range	DC to 806 MHz
Order	15-Pole
Max RMS Input Power	8.5 kW @ 470 MHz 5.0 kW @ 700 MHz 3.5 kW @ 800 MHz
Return Loss / VSWR	> 30 dB / < 1.07
Selectivity	> 29 dB @ 940 to 2600 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	523.5 mm, EIA 3+1/8" / 3 kg (6.6 lb.)
Interface	3+1/8" Rigid Line
Options	D-LP.03 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration

## 3+1/8" Lowpass Filter

LP77C



## FEATURES

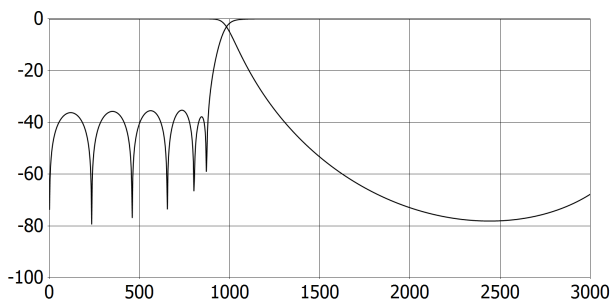
- 11-Pole
- 800 MHz Cut-Off
- Rigid Line Design

## OPTIONS

- Flange

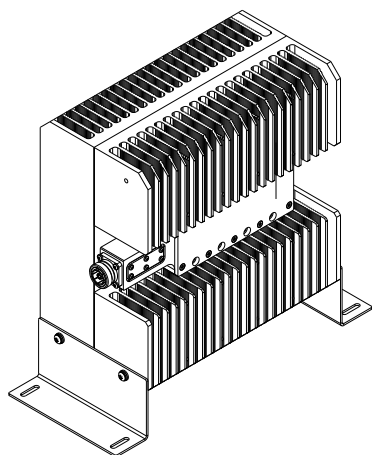
## SPECIFICATIONS

Code / Revision	C-LP77C / A
Frequency Range	DC to 862 MHz
Order	11-Pole
Max RMS Input Power	11.0 kW @ 470 MHz 7.5 kW @ 700 MHz 7.0 kW @ 800 MHz
Return Loss / VSWR	>7.0 dB / < 1.07
Selectivity	> 25 dB @ 1100 to 2600 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	399 mm, EIA 3+1/8" / 2 kg (4.4 lb.)
Interface	3+1/8" Rigid Line
Options	D-LP.03 3+1/8" EIA FastLine Flange

<sup>(1)</sup> Default configuration

## 1.4 kW Dry Load (With Heat Sink)

DT300HC

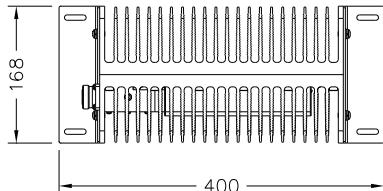
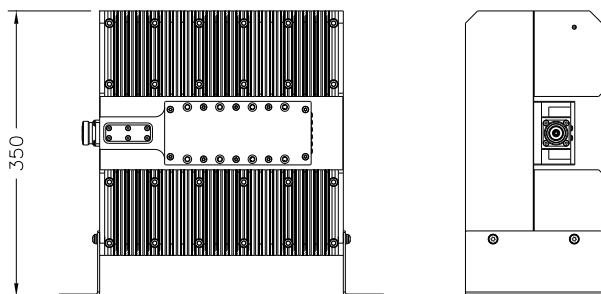


## FEATURES

- With Heat Sink
- BeO Free

## OPTIONS

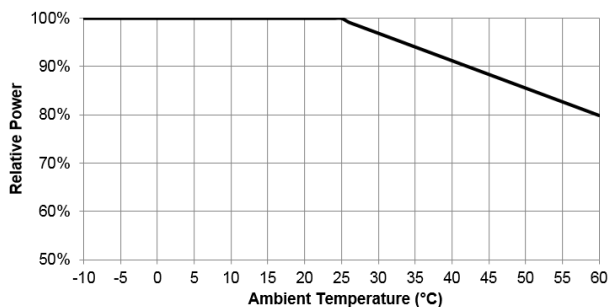
- Integrated Directional Coupler



## SPECIFICATIONS

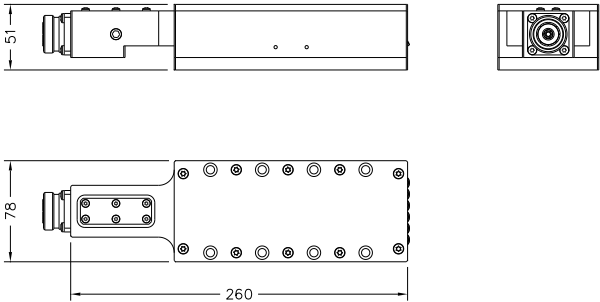
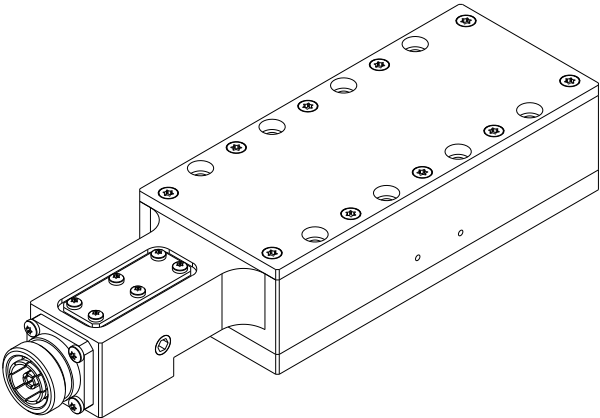
Code / Revision	C-DT300HC / A
Max RMS Input Power <sup>(1)</sup>	1.4 kW
Frequency Range	DC-862 MHz
Return Loss / VSWR	> 26 dB / < 1.11
Max Operating Temperature (Body)	120°C (248°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	400x168x350 mm / 18.0 kg (39.6 lb.)
Connectors <sup>(3)</sup>	<b>1x 32 mm Input</b>
	D-PC32E 7-16 Female (Default)
	D-PC32H 7/8" EIA Flange
Options	D-MP.01 SMA F. Integrated Directional Coupler
	D-MP.02 N Female Integrated Directional Coupler

<sup>(1)</sup> @25°C (77°F) Ambient Temperature <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors available



# 1.8 kW Dry Load (For Integration)

DT300C



FEATURES

- For Integration
- BeO Free

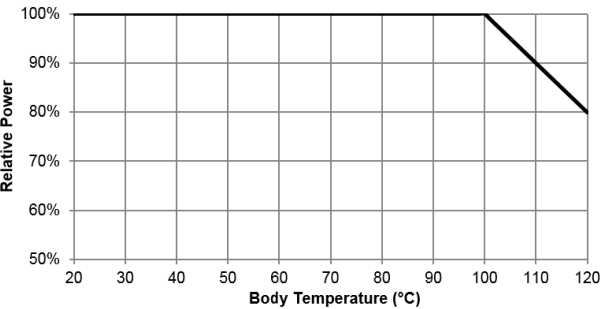
OPTIONS

- Integrated Directional Coupler

SPECIFICATIONS

Code / Revision	C-DT300C / A
Max RMS Input Power <sup>(1)</sup>	1.8 kW
Frequency Range	DC-862 MHz
Return Loss / VSWR	> 26 dB / < 1.11
Max Operating Temperature (Body)	100°C (212°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	260x78x51 mm / 1.7 kg (3.7 lb.)
Connectors <sup>(3)</sup>	<b>1x 32mm Input</b> D-PC32E 7-16 Female (Default) D-PC32H 7/8" EIA Flange
Options <sup>(3)</sup>	D-MP.01 SMA F. Integrated Directional Coupler D-MP.02 N Female Integrated Directional Coupler

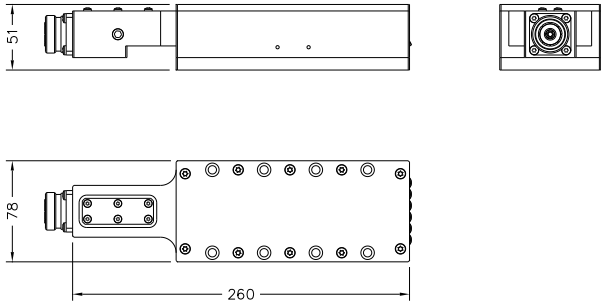
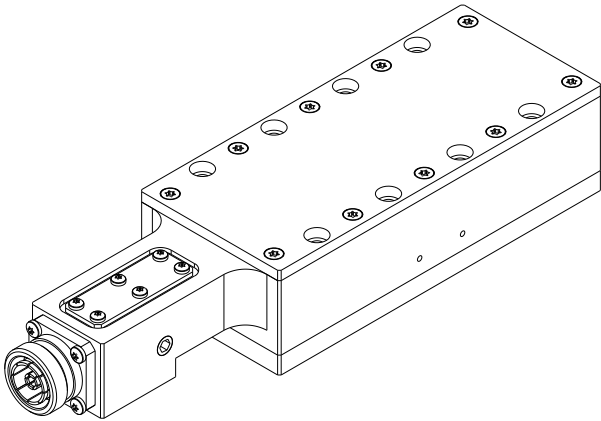
<sup>(1)</sup> @100°C (212°F) Body Temperature / with External Cooling <sup>(2)</sup> Default configuration  
<sup>(3)</sup> Other Connectors/Options available





# 3 kW Dry Load (For Integration)

DT300SC



### FEATURES

- For Integration
- BeO Free

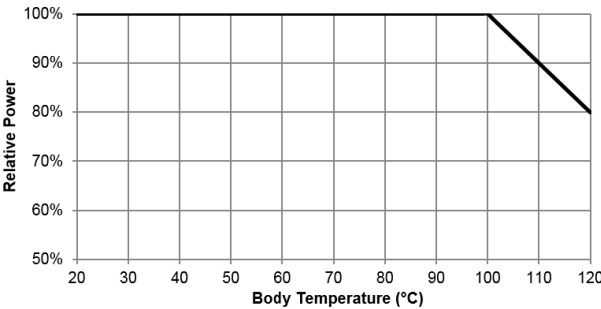
### OPTIONS

- Integrated Directional Coupler

### SPECIFICATIONS

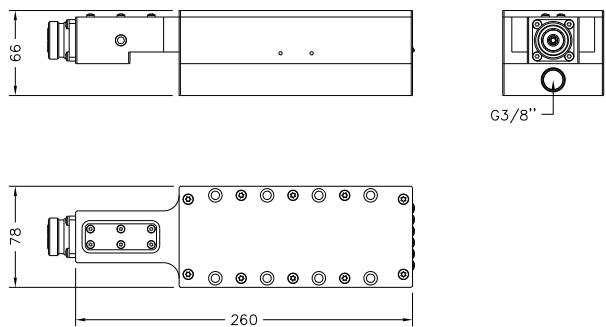
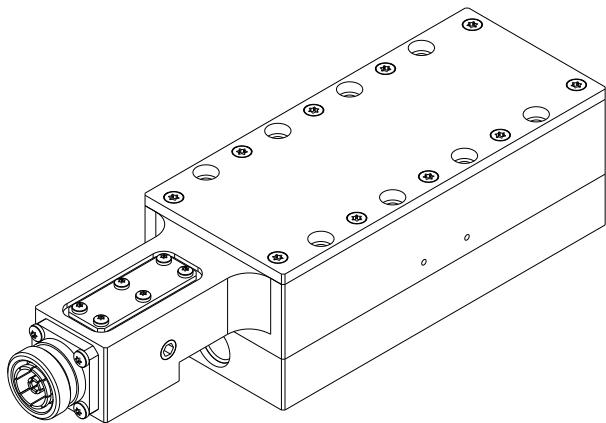
Code / Revision	C-DT300SC / A
Max RMS Input Power <sup>(1)</sup>	3.0 kW
Frequency Range	DC-862 MHz
Return Loss / VSWR	> 26 dB / < 1.11
Max Operating Temperature (Body)	100°C (212°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	260x78x51 mm / 2.5 kg (5.5 lb.)
Connectors <sup>(3)</sup>	<b>1x 32mm Input</b> D-PC32E 7-16 Female (Default) D-PC32H 7/8" EIA Flange
Options <sup>(3)</sup>	D-MP.01 SMA F. Integrated Directional Coupler D-MP.02 N Female Integrated Directional Coupler

<sup>(1)</sup> @100°C (212°F) Body Temperature / with External Cooling <sup>(2)</sup> Default configuration  
<sup>(3)</sup> Other Connectors/Options available



# 3.25 kW Dry Load (For Integration)

DT300LC



## FEATURES

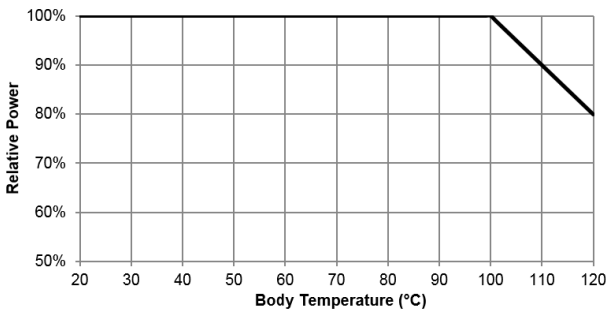
- For Integration (with external Liquid Cooling)
- BeO Free

## OPTIONS

- Integrated Directional Coupler

## SPECIFICATIONS

Code / Revision	C-DT300LC / A
Max RMS Input Power <sup>(1)</sup>	3.25 kW
Frequency Range	DC-862 MHz
Return Loss / VSWR	> 26 dB / < 1.11
Max Operating Temperature (Body)	100°C (212°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	260x78x66 mm / 2.1 kg (4.6 lb.)
Connectors <sup>(3)</sup>	<b>1x 32mm Input</b> D-PC32E 7-16 Female (Default) D-PC32H 7/8" EIA Flange
Options <sup>(3)</sup>	D-MP.01 SMA F. Integrated Directional Coupler D-MP.02 N Female Integrated Directional Coupler
Liquid Cooling Interface <sup>(2)</sup>	3/8" NPT Female
Coolant / Liquid Flow	Glycol and Water 10 l/min (2.6 gal/min)
<sup>(1)</sup> @45°C (113°F) Coolant Temperature <sup>(2)</sup> Default configuration	
<sup>(3)</sup> Other Connectors/Options available	



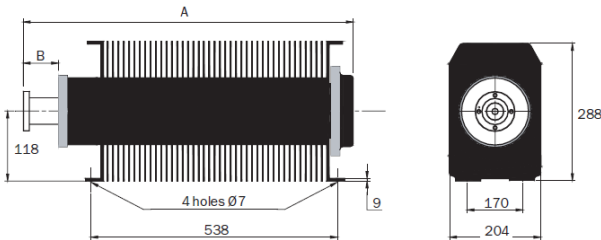
# 2.5 kW Power Load

DP2C



## FEATURES

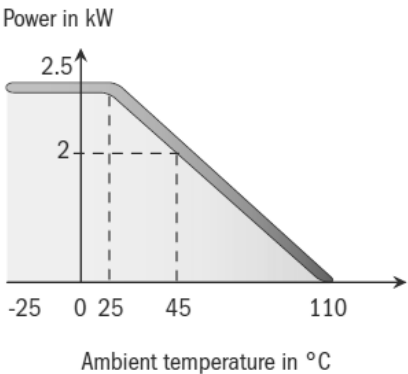
- Technology: Oil
- BeO Free
- Cooling: Heat Sink
- NFC 96-315 and MIL-DTL-39030 Compliant



## SPECIFICATIONS

Code	C-DP2C
Max RMS Input Power <sup>(1)</sup>	2.5 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	204x288x538 mm / 32 kg (71 lb.)
Connectors <sup>(3)</sup>	<b>Input</b> 7/8" EIA Flange 1+5/8" EIA Flange

<sup>(1)</sup> @25°C (77°F) Ambient Temperature <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors available



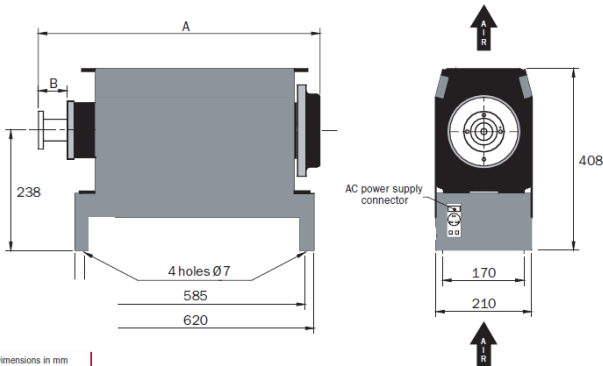
# 4 kW Power Load

DP4C



FEATURES

- Technology: Oil
- BeO Free
- Cooling: Heat Sink + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant

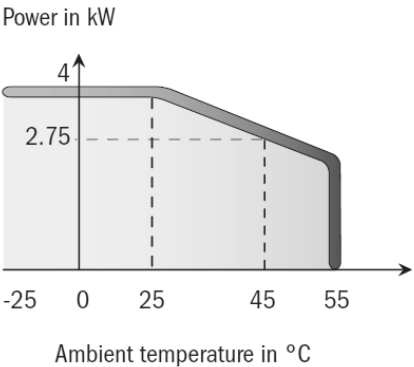


Dimensions in mm

SPECIFICATIONS

Code	C-DP4C
Max RMS Input Power <sup>(1)</sup>	4.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	210x408x620 mm / 40 kg (88 lb.)
Power supply	230 / 240 V, 50 / 60 Hz
Connectors <sup>(3)</sup>	<b>Input</b> 1+5/8" EIA Flange 3+1/8" EIA Flange

<sup>(1)</sup> @25°C (77°F) Ambient Temperature    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors available



5 kW Power Load

DP5C

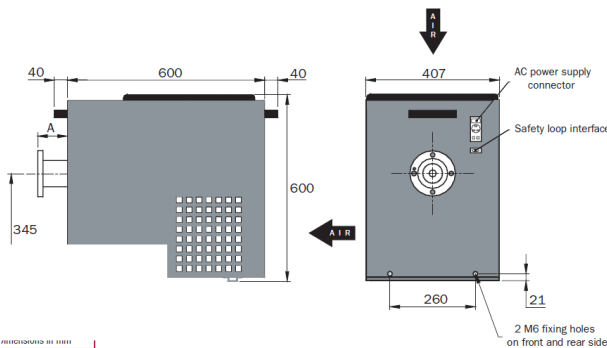


FEATURES

- Technology: Oil
- BeO Free
- Cooling: Oil Circulation + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant

OPTIONS

- RF-Sensitive Fan Switch

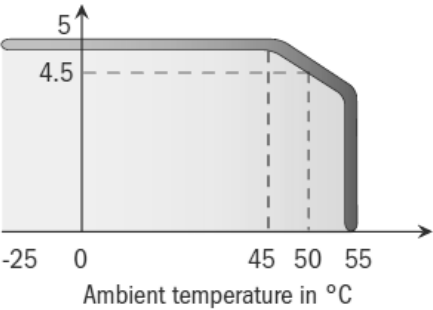


SPECIFICATIONS

Code	C-DP5C
Max RMS Input Power <sup>(1)</sup>	5.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	407x600x600 mm / 45 kg (99 lb.)
Power supply	230 / 240 V, 50 / 60 Hz (Default)
	110 / 120 V, 50 / 60 Hz
Connectors <sup>(3)</sup>	Input 1+5/8" EIA Flange 3+1/8" EIA Flange
Options <sup>(3)</sup>	RF-Sensitive Fan Switch

<sup>(1)</sup> @25°C (77°F) Ambient Temperature <sup>(2)</sup> Default configuration <sup>(3)</sup> Other Connectors available

Power in kW



10 kW Power Load

DP10C

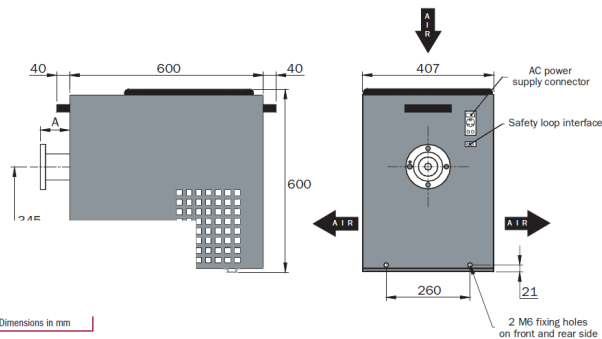


FEATURES

- Technology: Oil
- BeO Free
- Cooling: Oil Circulation + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant

OPTIONS

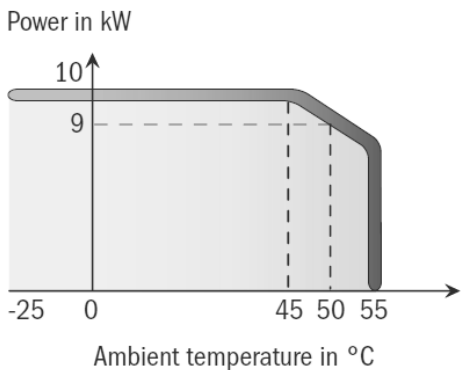
- RF-Sensitive Fan Switch



SPECIFICATIONS

Code	C-DP10C
Max RMS Input Power <sup>(1)</sup>	10.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	407x600x600 mm / 47 kg (104 lb.)
Power supply	230 / 240 V, 50 / 60 Hz (Default)
Connectors <sup>(3)</sup>	Input 1+5/8" EIA Flange 3+1/8" EIA Flange
Options <sup>(3)</sup>	RF-Sensitive Fan Switch

<sup>(1)</sup> @25°C (77°F) Ambient Temperature    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors available



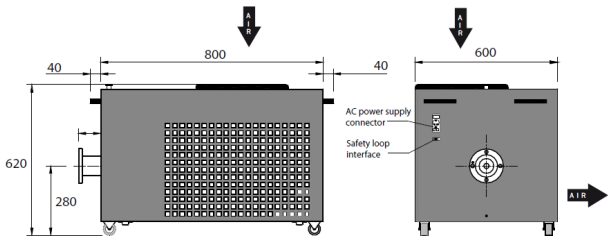
15 kW Power Load

DP15C



FEATURES

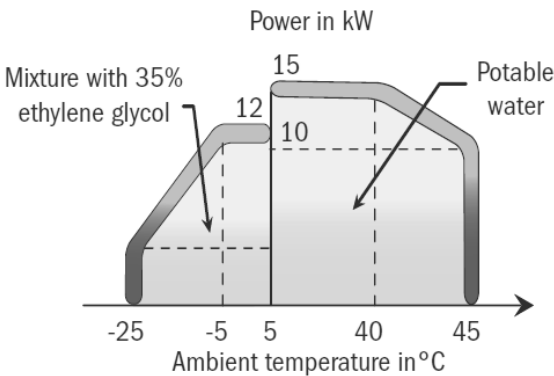
- Technology: Water
- BeO Free
- Cooling: Water Circulation + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant



SPECIFICATIONS

Code	C-DP15C
Max RMS Input Power <sup>(1)</sup>	
with Water	15.0 kW
with 35% Ethylene Glycol Mixture	12.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	600x620x800 mm / 70 kg (154 lb.)
Power supply	230 / 240 V, 50 / 60 Hz (Default)
	110 / 120 V, 50 / 60 Hz
Connectors <sup>(3)</sup>	Input
	3+1/8" EIA Flange
Options <sup>(3)</sup>	-

<sup>(1)</sup> @25°C (77°F) Ambient Temperature    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors available



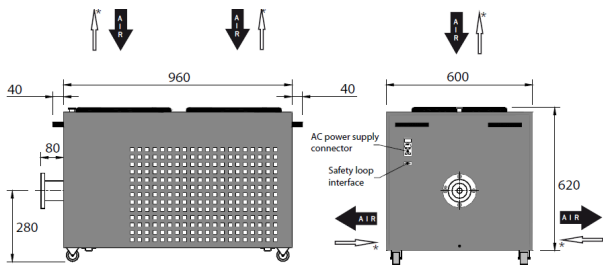
# 25 kW Power Load

DP25C



### FEATURES

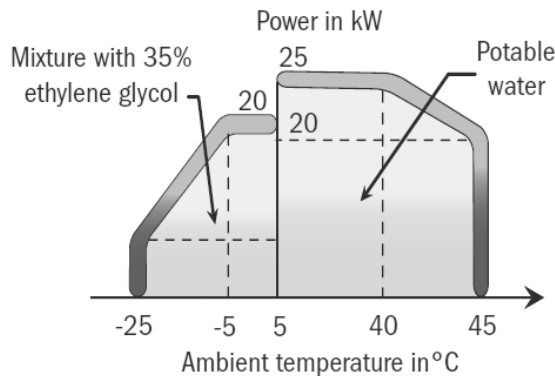
- Technology: Water
- BeO Free
- Cooling: Water Circulation + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant



### SPECIFICATIONS

Code	C-DP25C
Max RMS Input Power <sup>(1)</sup>	
with Water	25.0 kW
with 35% Ethylene Glycol Mixture	20.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	600x620x960 mm / 85 kg (187 lb.)
Power supply	230 / 240 V, 50 / 60 Hz (Default)
	110 / 120 V, 50 / 60 Hz
Connectors <sup>(3)</sup>	<b>Input</b>
	3+1/8" EIA Flange
Options <sup>(3)</sup>	3+1/8" to 4+1/2" EIA Flange Adapter

<sup>(1)</sup> @25°C (77°F) Ambient Temperature    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors available





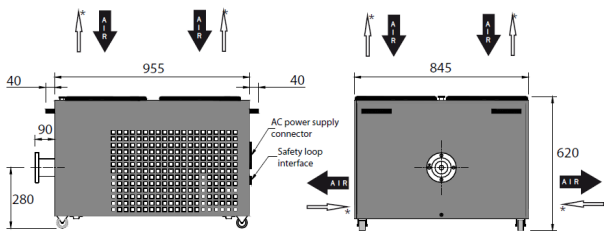
# 50 kW Power Load

**DP50C**



## FEATURES

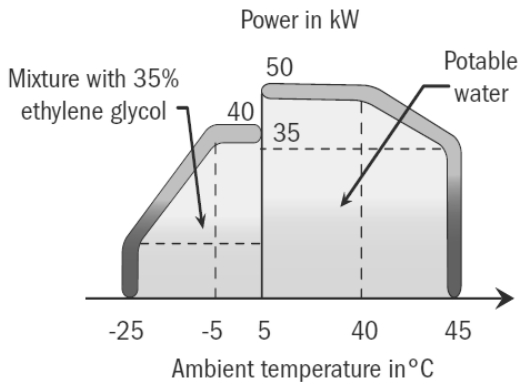
- Technology: Water
- BeO Free
- Cooling: Water Circulation + Forced Air
- NFC 96-315 and MIL-DTL-39030 Compliant



## SPECIFICATIONS

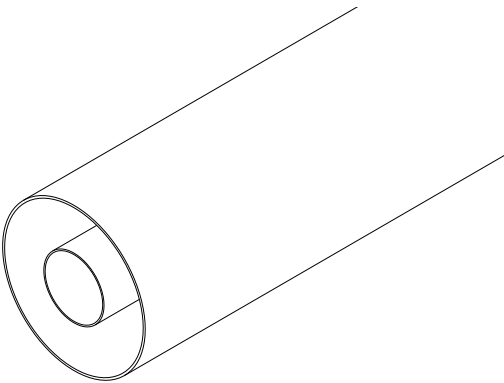
Code	C-DP50C
Max RMS Input Power <sup>(1)</sup>	
with Water	50.0 kW
with 35% Ethylene Glycol Mixture	32.0 kW
Frequency Range	DC – 1 GHz
Return Loss / VSWR	> 26 dB / < 1.10
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(2)</sup>	845x620x955 mm / 95 kg (209 lb.)
Power supply	230 / 240 V, 50 / 60 Hz (Default)
	110 / 120 V, 50 / 60 Hz
Connectors <sup>(3)</sup>	<b>Input</b>
	3+1/8" EIA Flange
Options <sup>(3)</sup>	3+1/8" to 4+1/2" EIA Flange Adapter
	3+1/8" to RL-120 EIA Flange Adapter
	3+1/8" to 6+1/8" EIA Flange Adapter

<sup>(1)</sup> @25°C (77°F) Ambient Temperature    <sup>(2)</sup> Default configuration    <sup>(3)</sup> Other Connectors available



7/8" (WX-20D) R. L. Connections

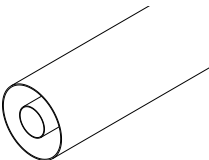
RL-23



FEATURES

- FastLine System
- Flush, Recessed and NAX/WX Cutbacks
- Direct Socket-Plug Connections
- EIA and JEITA Standard Compliant

Rigid Lines

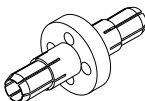


SPECIFICATIONS

Max RMS Power	Default	Painted	
	5.5 kW	7.0 kW	@ 100 MHz
	4.0 kW	5.0 kW	@ 200 MHz
	2.75 kW	3.5 kW	@ 400 MHz
	2.0 kW	2.5 kW	@ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Distance Between Inner Supports	0.8 m (2.6 ft)		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL23O	7/8" (WX-20D) Rigid Line Outer	
	D-RL23I	7/8" (WX-20D) Rigid Line Inner	

<sup>(1)</sup> @ 800 MHz

Inner Supports



SPECIFICATIONS

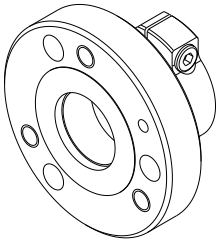
Max RMS Power	7.0 kW	@ 100 MHz
	5.0 kW	@ 200 MHz
	3.5 kW	@ 400 MHz
	2.5 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Distance Between Inner Supports	0.8 m (2.6 ft)	
Codes	D-IS23G	7/8" (WX-20D) Inner Support

<sup>(1)</sup> @ 800 MHz

## 7/8" (WX-20D) R. L. Connections

RL-23

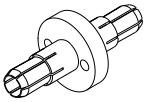
## EIA Flanges



## SPECIFICATIONS

Max RMS Power	7.0 kW	@ 100 MHz
	5.0 kW	@ 200 MHz
	3.5 kW	@ 400 MHz
	2.5 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes <sup>(2)</sup>	D-CF23H	7/8" EIA FastLine Flange
	D-CF23H1	7/8" EIA Flange (8.7 mm c/back)
Options	O-NB.01	7/8" Flange nuts and bolts set
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included		

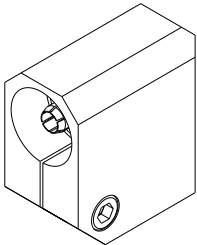
## EIA Inner Connections



## SPECIFICATIONS

Max RMS Power	7.0 kW	@ 100 MHz
	5.0 kW	@ 200 MHz
	3.5 kW	@ 400 MHz
	2.5 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC23H	7/8" EIA Inner Connection
<sup>(1)</sup> @ 800 MHz		

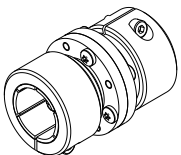
## Elbows



## SPECIFICATIONS

Max RMS Power	7.0 kW	@ 100 MHz
	5.0 kW	@ 200 MHz
	3.5 kW	@ 400 MHz
	2.5 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-EC23I	7/8" FastLine Elbow
	D-EC23I1	7/8" Elbow (8.7 mm c/back)
	D-EC23I2	WX-20D Elbow (1 mm c/back)
<sup>(1)</sup> @ 800 MHz		

## Junctions

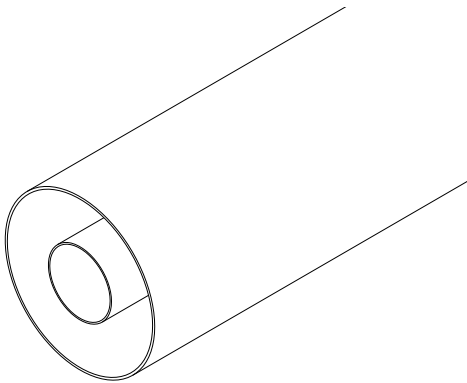


## SPECIFICATIONS

Max RMS Power	7.0 kW	@ 100 MHz
	5.0 kW	@ 200 MHz
	3.5 kW	@ 400 MHz
	2.5 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-JC23I	7/8" FastLine Junction
	D-JC23I2	WX-20D Junction (1 mm c/back)
<sup>(1)</sup> @ 800 MHz		

1+5/8" (WX-39D) R. L. Connections

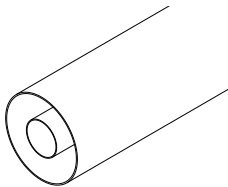
RL-39



FEATURES

- FastLine System
- Flush, Recessed and NAX/WX Cutbacks
- Direct Socket-Plug Connections
- EIA and JEITA Standard Compliant

Rigid Lines

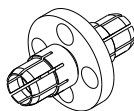


SPECIFICATIONS

Max RMS Power	Default	Painted	
	16.0 kW	20.0 kW	@ 100 MHz
	11.0 kW	14.0 kW	@ 200 MHz
	8.0 kW	10.0 kW	@ 400 MHz
	5.5 kW	7.0 kW	@ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Distance Between Inner Supports	1.4 m (4.6 ft)		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL39O	1+5/8" (WX-39D) Rigid Line Outer	
	D-RL39I	1+5/8" (WX-39D) Rigid Line Inner	

<sup>(1)</sup> @ 800 MHz

Inner Supports



SPECIFICATIONS

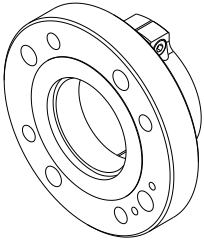
Max RMS Power	20.0 kW	@ 100 MHz
	14.0 kW	@ 200 MHz
	10.0 kW	@ 400 MHz
	7.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Distance Between Inner Supports	1.4 m (4.6 ft)	
Codes	D-IS39J	1+5/8" (WX-39D) Inner Support

<sup>(1)</sup> @ 800 MHz

## 1+5/8" (WX-39D) R. L. Connections

RL-39

## EIA Flanges

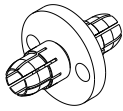


## SPECIFICATIONS

Max RMS Power	20.0 kW	@ 100 MHz
	14.0 kW	@ 200 MHz
	10.0 kW	@ 400 MHz
	7.0 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes <sup>(2)</sup>	D-CF39K	1+5/8" EIA FastLine Flange
	D-CF39K1	1+5/8" EIA Flange (11.1 mm c/back)
Options	O-NB.02	1+5/8" Flange nuts and bolts set

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included

## EIA Inner Connections

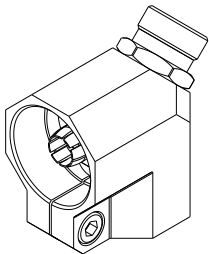


## SPECIFICATIONS

Max RMS Power	20.0 kW	@ 100 MHz
	14.0 kW	@ 200 MHz
	10.0 kW	@ 400 MHz
	7.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC39K	1+5/8" EIA Inner Connection

<sup>(1)</sup> @ 800 MHz

## Elbows

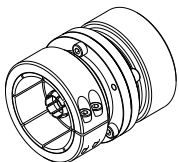


## SPECIFICATIONS

Max RMS Power	20.0 kW	@ 100 MHz
	14.0 kW	@ 200 MHz
	10.0 kW	@ 400 MHz
	7.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-EC39L	1+5/8" FastLine Elbow
	D-EC39L1	1+5/8" Elbow (11.1 mm c/back)
	D-EC39L2	WX-39D Elbow (1.5 mm c/back)
Options	O-SM.01	Fine-match screw (Removed)

<sup>(1)</sup> @ 800 MHz

## Junctions



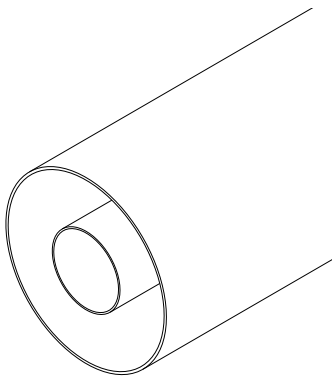
## SPECIFICATIONS

Max RMS Power	20.0 kW	@ 100 MHz
	14.0 kW	@ 200 MHz
	10.0 kW	@ 400 MHz
	7.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Max Operating Temperature	70°C (158°F)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-JC39L	1+5/8" FastLine Junction
	D-JC39L1	1+5/8" Junction (11.1 mm c/back)
	D-JC39L2	WX-39D Junction (1.5 mm c/back)

<sup>(1)</sup> @ 800 MHz

3+1/8" (WX-77D) / NAX-77D R. L. Connections

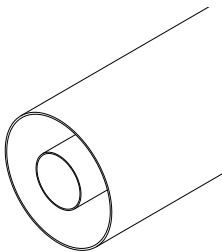
RL-77



FEATURES

- FastLine System
- Flush, Recessed and NAX/WX Cutbacks
- Direct Socket-Plug Connections
- EIA and JEITA Standard Compliant

Rigid Lines

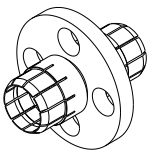


SPECIFICATIONS

Max RMS Power	Default	Painted	
	47.5 kW	60.0 kW	@ 100 MHz
	32.5 kW	42.5 kW	@ 200 MHz
	24.0 kW	30.0 kW	@ 400 MHz
	17.0 kW	21.0 kW	@ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Distance Between Inner Supports	2.3 m (7.5 ft)		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL77O	3+1/8" (WX-77D) Rigid Line Outer	
	D-RL77O2	NAX-77D Rigid Line Outer	
	D-RL77I	3+1/8" (WX-77D) Rigid Line Inner	

(1) @ 800 MHz

Inner Supports



SPECIFICATIONS

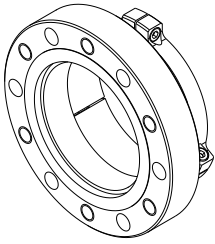
Max RMS Power	60.0 kW	@ 100 MHz
	42.5 kW	@ 200 MHz
	30.0 kW	@ 400 MHz
	21.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Distance Between Inner Supports	2.3 m (7.5 ft)	
Codes	D-IS77M	3+1/8" (WX-77D) Inner Support

(1) @ 800 MHz

## 3+1/8" (WX-77D) / NAX-77D R. L. Connections

RL-77

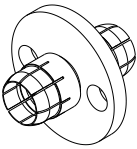
## EIA Flanges



## SPECIFICATIONS

Max RMS Power	60.0 kW	@ 100 MHz
	42.5 kW	@ 200 MHz
	30.0 kW	@ 400 MHz
	21.0 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes <sup>(2)</sup>	D-CF77N	3+1/8" EIA FastLine Flange
	D-CF77N1	3+1/8" EIA Flange (17.5 mm c/back)
Options	O-NB.03	3+1/8" Flange nuts and bolts set
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included		

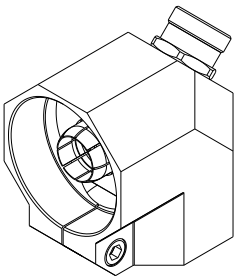
## EIA Inner Connections



## SPECIFICATIONS

Max RMS Power	60.0 kW	@ 100 MHz
	42.5 kW	@ 200 MHz
	30.0 kW	@ 400 MHz
	21.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC77N	3+1/8" EIA Inner Connection
<sup>(1)</sup> @ 800 MHz		

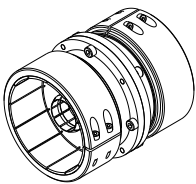
## Elbows



## SPECIFICATIONS

Max RMS Power	60.0 kW	@ 100 MHz
	42.5 kW	@ 200 MHz
	30.0 kW	@ 400 MHz
	21.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-EC77O	3+1/8" FastLine Elbow
	D-EC77O1	3+1/8" Elbow (17.5 mm c/back)
	D-EC77O2	NAX-77D Elbow (2 mm c/back)
	D-EC77O4	WX-77D Elbow (2 mm c/back)
Options	O-SM.02	Fine-match screw (Removed)
<sup>(1)</sup> @ 800 MHz		

## Junctions



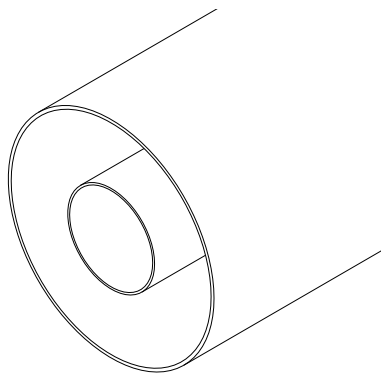
## SPECIFICATIONS

Max RMS Power	60.0 kW	@ 100 MHz
	42.5 kW	@ 200 MHz
	30.0 kW	@ 400 MHz
	21.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-JC77O	3+1/8" FastLine Junction
	D-JC77O1	3+1/8" Junction (17.5 mm c/back)
	D-JC77O2	NAX-77D Junction (2 mm c/back)
	D-JC77O4	WX-77D Junction (2 mm c/back)

<sup>(1)</sup> @ 800 MHz

4+1/2” R. L. Connections

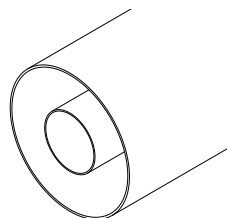
RL-103



FEATURES

- FastLine System
- Flush, Recessed and NAX/WX Cutbacks
- Direct Socket-Plug Connections
- EIA and JEITA Standard Compliant

Rigid Lines

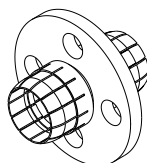


SPECIFICATIONS

Max RMS Power	Default	Painted	
	80.0 kW	100.0 kW	@ 100 MHz
	55.0 kW	70.0 kW	@ 200 MHz
	40.0 kW	50.0 kW	@ 400 MHz
	27.5 kW	35.0 kW	@ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Distance Between Inner Supports	3 m (9.8 ft)		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL103O	4+1/2” Rigid Line Outer	
	D-RL103I	4+1/2” Rigid Line Inner	

<sup>(1)</sup> @ 800 MHz

Inner Supports



SPECIFICATIONS

Max RMS Power	100.0 kW	@ 100 MHz
	70.0 kW	@ 200 MHz
	50.0 kW	@ 400 MHz
	35.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Distance Between Inner Supports	3 m (9.8 ft)	
Codes	D-IS103P	4+1/2” Inner Support

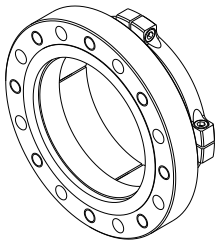
<sup>(1)</sup> @ 800 MHz



## 4+1/2" R. L. Connections

RL-103

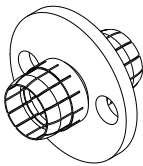
## EIA Flanges



## SPECIFICATIONS

Max RMS Power	100.0 kW	@ 100 MHz
	70.0 kW	@ 200 MHz
	50.0 kW	@ 400 MHz
	35.0 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes <sup>(2)</sup>	D-CF103Q	4+1/2" EIA FastLine Flange
Options	O-NB.04	4+1/2" Flange nuts and bolts set
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included		

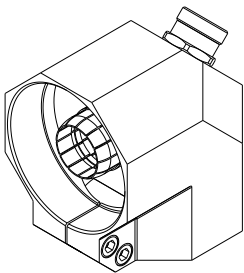
## EIA Inner Connections



## SPECIFICATIONS

Max RMS Power	100.0 kW	@ 100 MHz
	70.0 kW	@ 200 MHz
	50.0 kW	@ 400 MHz
	35.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC103Q	4+1/2" EIA Inner Connection
<sup>(1)</sup> @ 800 MHz		

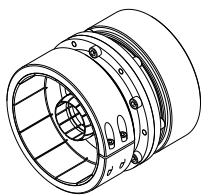
## Elbows



## SPECIFICATIONS

Max RMS Power	100.0 kW	@ 100 MHz
	70.0 kW	@ 200 MHz
	50.0 kW	@ 400 MHz
	35.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-EC103R	4+1/2" FastLine Elbow
	D-EC103R1	4+1/2" Elbow (17.3 mm c/back)
Options	O-SM.03	Fine-match screw (Removed)
<sup>(1)</sup> @ 800 MHz		

## Junctions

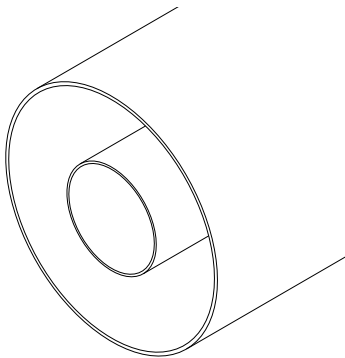


## SPECIFICATIONS

Max RMS Power	100.0 kW	@ 100 MHz
	70.0 kW	@ 200 MHz
	50.0 kW	@ 400 MHz
	35.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-JC103R	4+1/2" FastLine Junction
<sup>(1)</sup> @ 800 MHz		

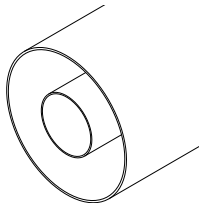
RL-120 (WX-120D) / NAX-120D R. L. Connections

RL-120



- FEATURES
- *FastLine* System
  - Flush, Recessed and NAX/WX Cutbacks
  - Direct Socket-Plug Connections
  - EIA and JEITA Standard Compliant

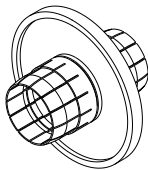
Rigid Lines



SPECIFICATIONS			
Max RMS Power	Default	Painted	
	100.0 kW	130.0 kW	@ 100 MHz
	70.0 kW	90.0 kW	@ 200 MHz
	50.0 kW	65.0 kW	@ 400 MHz
	35.0 kW	45.0 kW	@ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Distance Between Inner Supports	3 m (9.8 ft)		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL-120O	RL-120 (WX-120D) Rigid Line Outer	
	D-RL-120O2	NAX-120D Rigid Line Outer	
	D-RL-120I	RL-120 (WX-120D) Rigid Line Inner	

<sup>(1)</sup> @ 800 MHz

Inner Supports



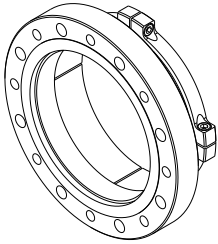
SPECIFICATIONS		
Max RMS Power	130.0 kW	@ 100 MHz
	90.0 kW	@ 200 MHz
	65.0 kW	@ 400 MHz
	45.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Distance Between Inner Supports	3 m (9.8 ft)	
Codes	D-IS120S	RL-120 (WX-120D) Inner Support

<sup>(1)</sup> @ 800 MHz

## RL-120 (WX-120D) / NAX-120D R. L. Connections

RL-120

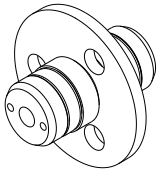
## EIA Flanges



## SPECIFICATIONS

Max RMS Power	130.0 kW	@ 100 MHz
	90.0 kW	@ 200 MHz
	65.0 kW	@ 400 MHz
	45.0 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes <sup>(2)</sup>	D-CF120X	RL-120 EIA FastLine Flange
Options	O-NB.06	RL-120 Flange nuts and bolts set
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included		

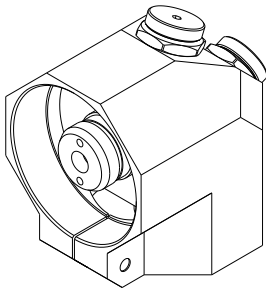
## EIA Inner Connections



## SPECIFICATIONS

Max RMS Power	130.0 kW	@ 100 MHz
	90.0 kW	@ 200 MHz
	65.0 kW	@ 400 MHz
	45.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC120X	RL-120 EIA Inner Connection
<sup>(1)</sup> @ 800 MHz		

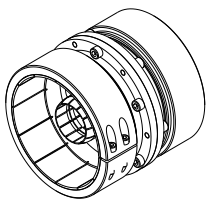
## Elbows



## SPECIFICATIONS

Max RMS Power	130.0 kW	@ 100 MHz
	90.0 kW	@ 200 MHz
	65.0 kW	@ 400 MHz
	45.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-EC120T	RL-120 FastLine Elbow
	D-EC120T2	NAX-120D Elbow (3 mm c/back)
	D-EC120T4	WX-120D Elbow (3 mm c/back)
<sup>(1)</sup> @ 800 MHz		

## Junctions

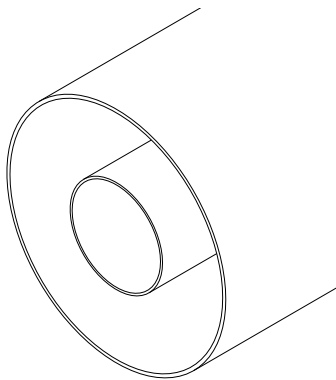


## SPECIFICATIONS

Max RMS Power	130.0 kW	@ 100 MHz
	90.0 kW	@ 200 MHz
	65.0 kW	@ 400 MHz
	45.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-JC120W	RL-120 FastLine Junction
	D-JC120W2	NAX-120D Junction (3 mm c/back)
	D-JC120W4	WX-120D Junction (3 mm c/back)
<sup>(1)</sup> @ 800 MHz		

6+1/8” (WX-152D) R. L. Connections

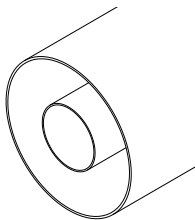
RL-152



FEATURES

- FastLine System
- Flush, Recessed and NAX/WX Cutbacks
- Direct Socket-Plug Connections
- EIA and JEITA Standard Compliant

Rigid Lines

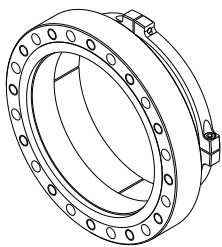


SPECIFICATIONS

Max RMS Power	Default	Painted	
		160.0 kW	200.0 kW @ 100 MHz
		110.0 kW	140.0 kW @ 200 MHz
		80.0 kW	100.0 kW @ 400 MHz
		55.0 kW	70.0 kW @ 800 MHz
Outer Conductor	High Conductivity Aluminum Alloy		
Inner Conductor	High Conductivity Copper (ETP)		
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Available lengths	2 or 4 m (6.6 or 13.1 ft)		
Codes	D-RL152O	6+1/8" Rigid Line Outer	
	D-RL152I	6+1/8" Rigid Line Inner	

<sup>(1)</sup> @ 800 MHz

EIA Flanges



SPECIFICATIONS

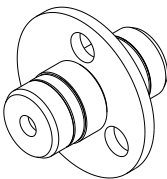
Max RMS Power		200.0 kW	@ 100 MHz
		140.0 kW	@ 200 MHz
		100.0 kW	@ 400 MHz
		70.0 kW	@ 800 MHz
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60		
Codes <sup>(2)</sup>	D-CF152V	6+1/8" EIA FastLine Flange	
Options	O-NB.05	6+1/8" Flange nuts and bolts set	

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included

6+1/8" (WX-152D) R. L. Connections

RL-152

EIA Inner Connections

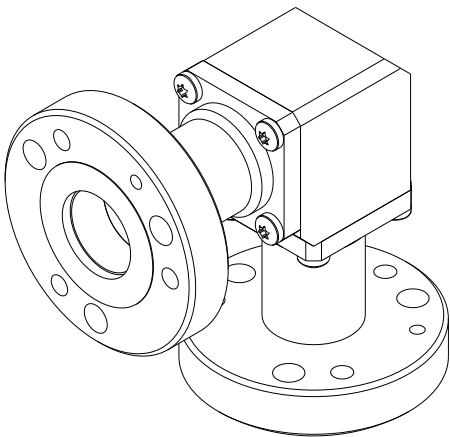


SPECIFICATIONS

Max RMS Power	200.0 kW	@ 100 MHz
	140.0 kW	@ 200 MHz
	100.0 kW	@ 400 MHz
	70.0 kW	@ 800 MHz
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Codes	D-IC152V	6+1/8" EIA Inner Connection
<sup>(1)</sup> @ 800 MHz		

# 32 mm Angular Adapters

AC32



FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

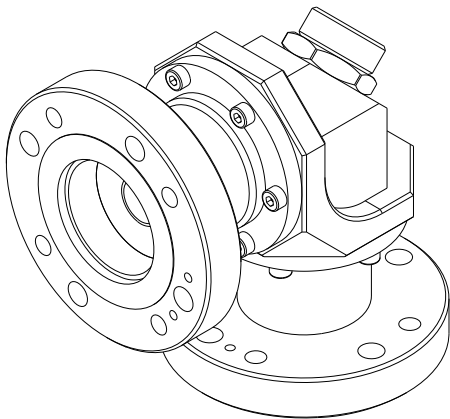
N, 7-16, 7/8" (WX-20D) to N, 7-16, 7/8" (WX-20D)

SPECIFICATIONS

Code / Revision	D-AC32 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	7/8" (WX-20D) Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

64 mm Angular Adapters



- FEATURES
- Interchangeable Connector System
  - EIA and JEITA Standard Compliant

1+5/8" (WX-39D) to 1+5/8" (WX-39D)

SPECIFICATIONS	
Code / Revision	D-AC64 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	1+5/8" (WX-39D) Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

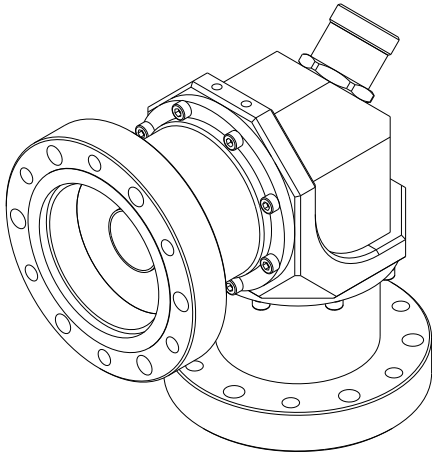
1+5/8" (WX-39D) to N, 7-16, 7/8" (WX-20D)

SPECIFICATIONS	
Code / Revision	D-AC64 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	1+5/8" (WX-39D) Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

## 100 mm Angular Adapters

AC100



## FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

## 3+1/8" (WX-77D) to 3+1/8" (WX-77D)

## SPECIFICATIONS

Code / Revision	D-AC100 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
Connection B <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

## 3+1/8" (WX-77D) to 1+5/8" (WX-39D)

## SPECIFICATIONS

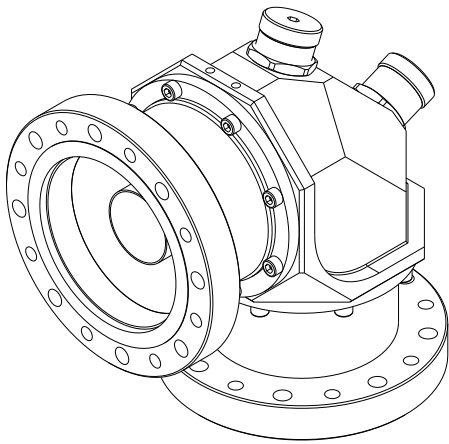
Code / Revision	D-AC100 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)



# 130 mm Angular Adapters

AC130



## FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

4+1/2" to 4+1/2"

## SPECIFICATIONS

Code / Revision	D-AC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Flange
Connection B <sup>(2)</sup>	4+1/2" Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

4+1/2" to 3+1/8" (WX-77D)

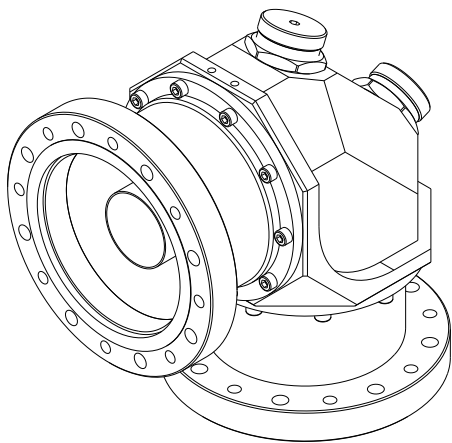
## SPECIFICATIONS

Code / Revision	D-AC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Flange
Connection B <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

# 150 mm Angular Adapters

AC150



FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
RL-120 (WX-120D) - 6+1/8" (WX-152D)

SPECIFICATIONS

Code / Revision	D-AC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

RL-120 (WX-120D) - 6+1/8" (WX-152D) to 4+1/2"

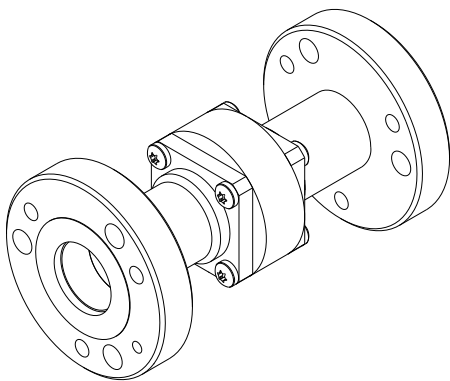
SPECIFICATIONS

Code / Revision	D-AC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	4+1/2" Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

# 32 mm Straight Adapters

SC32



FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

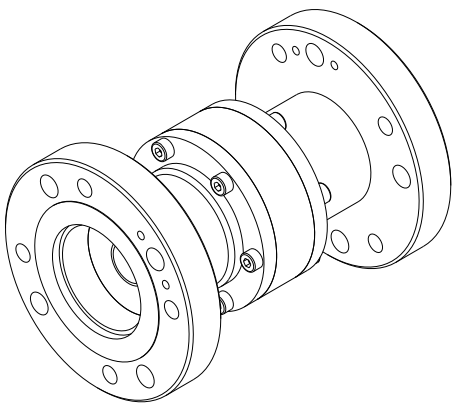
7/8" (WX-20D) to  
7/8" (WX-20D)

SPECIFICATIONS

Code / Revision	D-SC32 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	7/8" (WX-20D) Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

# 64 mm Straight Adapters



FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

1+5/8" (WX-39D) to  
1+5/8" (WX-39D)

SPECIFICATIONS

Code / Revision	D-SC64 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	1+5/8" (WX-39D) Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

1+5/8" (WX-39D) to  
N, 7-16, 7/8" (WX-20D)

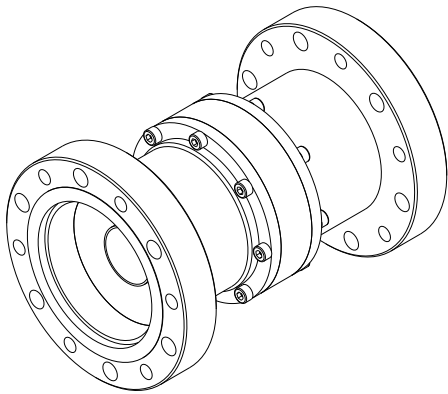
SPECIFICATIONS

Code / Revision	D-SC64 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	1+5/8" (WX-39D) Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

## 100 mm Straight Adapters

SC100



## FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

3+1/8" (WX-77D) to  
3+1/8" (WX-77D)

## SPECIFICATIONS

Code / Revision	D-SC100 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
Connection B <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

3+1/8" (WX-77D) to  
1+5/8" (WX-39D)

## SPECIFICATIONS

Code / Revision	D-SC100 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

# 100 mm Straight Adapters

**SC100**

3+1/8" (WX-77D) to  
N, 7-16, 7/8" (WX-20D)

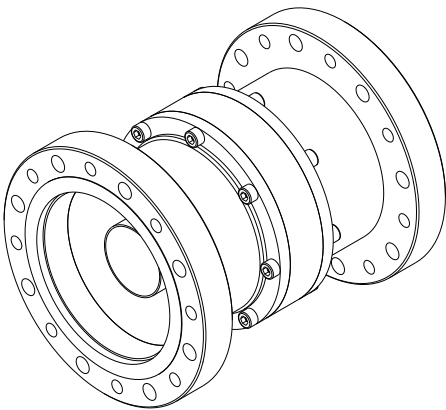
**SPECIFICATIONS**

Code / Revision	D-SC100 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

# 130 mm Straight Adapters

SC130



FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

4+1/2" to  
4+1/2"

SPECIFICATIONS

Code / Revision	D-SC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Flange
Connection B <sup>(2)</sup>	4+1/2" Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

4+1/2" to  
3+1/8" (WX-77D)

SPECIFICATIONS

Code / Revision	D-SC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Socket / Flange / Plug
Connection B <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange

<sup>(1)</sup> @ 800 MHz    <sup>(2)</sup> Inner Connections not included (Flanges only)

# 130 mm Straight Adapters

**SC130**

4+1/2" to  
1+5/8" (WX-39D)

**SPECIFICATIONS**

Code / Revision	D-SC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

4+1/2" to  
N, 7-16, 7/8" (WX-20D)

**SPECIFICATIONS**

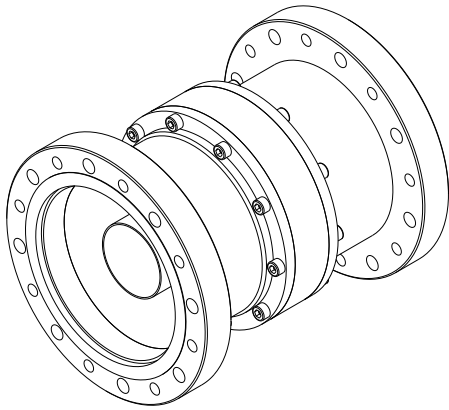
Code / Revision	D-SC130 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	4+1/2" Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)



## 150 mm Straight Adapters

SC150



## FEATURES

- Interchangeable Connector System
- EIA and JEITA Standard Compliant

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
RL-120 (WX-120D) - 6+1/8" (WX-152D)

## SPECIFICATIONS

Code / Revision	D-SC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
4+1/2"

## SPECIFICATIONS

Code / Revision	D-SC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange 6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	4+1/2" Flange

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

# 150 mm Straight Adapters

**SC150**

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
3+1/8" (WX-77D) / NAX77D

**SPECIFICATIONS**

Code / Revision	D-SC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange
	6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	3+1/8" (WX-77D) / NAX77D Flange
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)	

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
1+5/8" (WX-39D)

**SPECIFICATIONS**

Code / Revision	D-SC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange
	6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	1+5/8" (WX-39D) Flange
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)	

RL-120 (WX-120D) - 6+1/8" (WX-152D) to  
N, 7-16, 7/8" (WX-20D)

**SPECIFICATIONS**

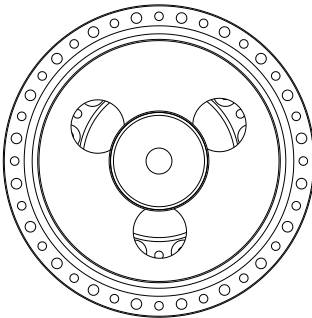
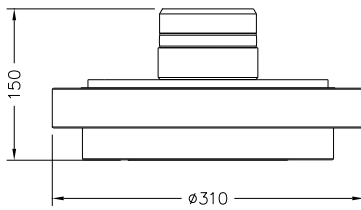
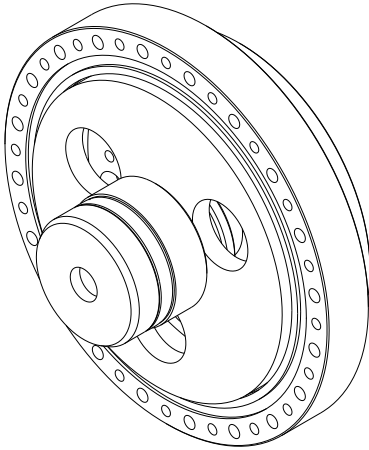
Code / Revision	D-SC150 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	RL-120 (WX-120D) Flange
	6+1/8" (WX-152D) Flange
Connection B <sup>(2)</sup>	7/8" (WX-20D) Flange
<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only) <sup>(3)</sup> Flanges only	

# 6+1/8" to 9+3/16" Flange Adapter

**SC206**

## FEATURES

- EIA and JEITA Standard Compliant



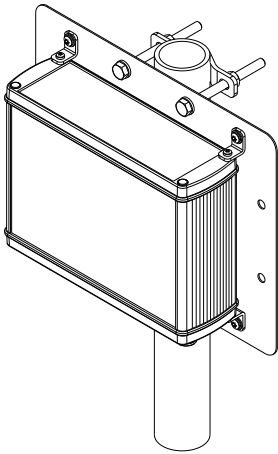
## SPECIFICATIONS

Code / Revision	D-SC206 / A
Return Loss <sup>(1)</sup>	> 40 dB (VSWR < 1.02)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Connection A <sup>(2)</sup>	6+1/8" Flange
Connection B <sup>(2)</sup>	9+3/16" Flange with inner connector

<sup>(1)</sup> @ 800 MHz <sup>(2)</sup> Inner Connections not included (Flanges only)

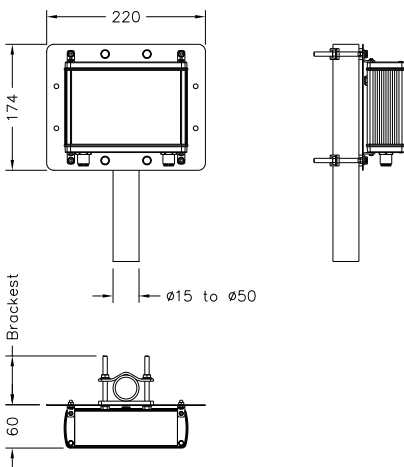
## 868 MHz IoT 3-Pole Bandpass Filter

CL3PW868



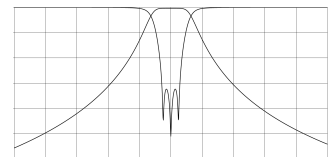
## FEATURES

- 3-Pole
- 30 mm Cavity Size
- DC Short
- 2x N Female Connectors
- Weatherproof (IP65)
- Mast Fixing Kit



## SPECIFICATIONS

Code / Revision	E-CL3PW868 / C
Order / Cavity Size	3-Pole / 30 mm
Frequency Range / Bandwidth	868 MHz / 3 MHz
Max Operating Temperature (Body)	90°C (194°F)
Environmental Conditions	-40 to +85°C (-40 to +185°F), IP65
Dimensions / Weight	60x174x220 mm / 1.7 kg (3.7 lb.)
Connectors	N Female
Options	O-RK.99 1U 19" Rack Shelf, w/ panel and handles

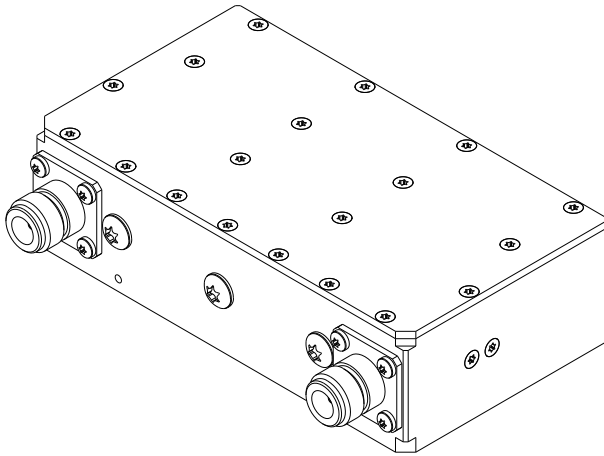


## TUNING DATA

Bandwidth	3 MHz
Max RMS Input Power	50 W
Insertion Loss	< 0.55 dB (867.5 - 868.5 MHz)
Bandpass Ripple	< 0.10 dB (867.5 - 868.5 MHz)
Selectivity	C.F. $\pm$ 15 MHz > 23 dB
	C.F. $\pm$ 20 MHz > 30 dB
	C.F. $\pm$ 30 MHz > 41 dB
	C.F. $\pm$ 50 MHz > 54 dB
Harmonic Attenuation	> 60 dB up to 3.0 GHz
Return Loss / VSWR	> 22 dB / < 1.17
Group Delay Variation	< 2 ns

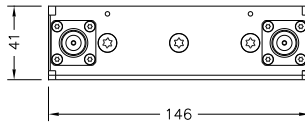
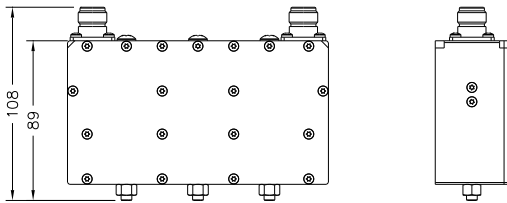
## 868 MHz IoT 3-Pole Bandpass Filter

CL3P868



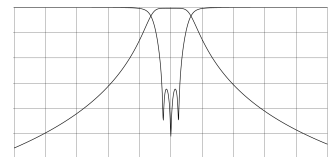
## FEATURES

- 3-Pole
- 30 mm Cavity Size
- DC Short



## SPECIFICATIONS

Code / Revision	E-CL3P868 / C
Order / Cavity Size	3-Pole / 30 mm
Frequency Range / Bandwidth	868 MHz / 3 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight	146x41x108 mm / 0.7 kg (1.5 lb.)
Connectors	<b>2x 25 mm Series Input; Output</b>
	D-PC25C N Female (Default)
	D-PC25E 7-16 Female
Options	O-RK.99 1U 19" Rack Shelf, w/ panel and handles

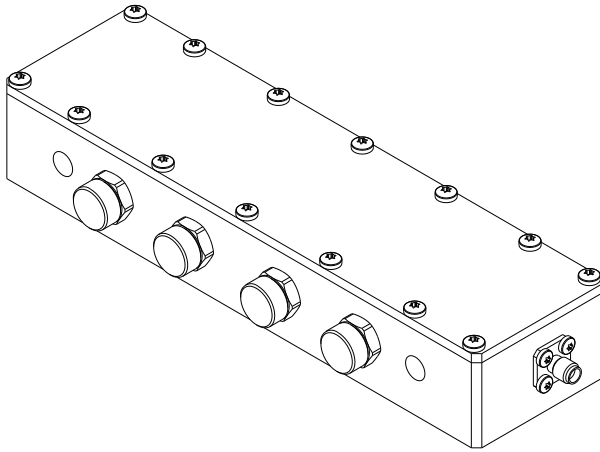


## TUNING DATA

Bandwidth	3 MHz
Max RMS Input Power	50 W
Insertion Loss	< 0.55 dB (867.5 - 868.5 MHz)
Bandpass Ripple	< 0.10 dB (867.5 - 868.5 MHz)
Selectivity	C.F. $\pm$ 15 MHz > 23 dB
	C.F. $\pm$ 20 MHz > 30 dB
	C.F. $\pm$ 30 MHz > 41 dB
	C.F. $\pm$ 50 MHz > 54 dB
Harmonic Attenuation	> 60 dB up to 3.0 GHz
Return Loss / VSWR	> 22 dB / < 1.17
Group Delay Variation	< 2 ns

## 950-2300 MHz 4-Pole Bandpass Filter

CL4P2500/10

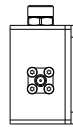
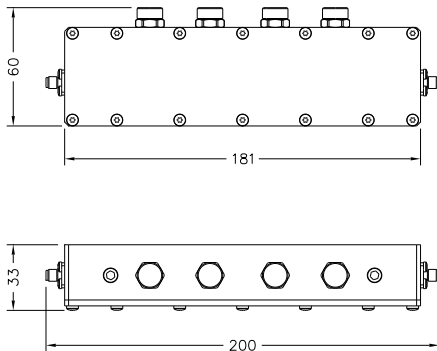


## FEATURES

- 4-Pole
- 25 mm Cavity Size
- Constant Bandwidth design
- Full Band Tunability
- DC Short

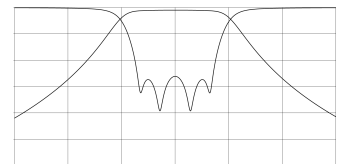
## OPTIONS

- 19" Rack Shelf



## SPECIFICATIONS

Code / Revision	E-CL4P2500/10 / A
Order / Cavity Size	4-Pole / 25 mm
Frequency Range / Bandwidth	950 to 2300 MHz / 10 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight	200x33x60 mm / 0.5 kg (1.1 lb.)
Connectors	SMA Female
	N Female

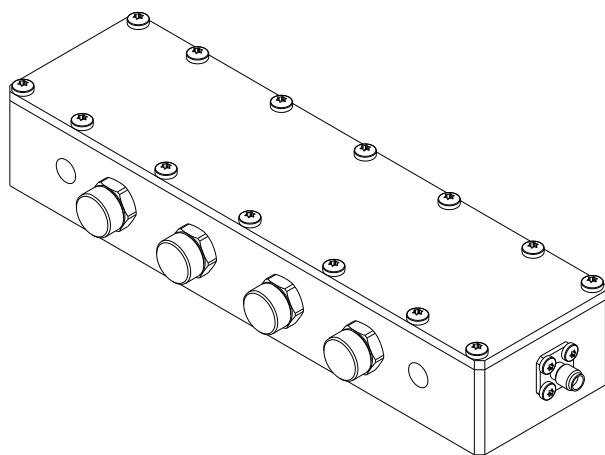


## TUNING DATA

Bandwidth	10 MHz
Max RMS Input Power	25 W
Insertion Loss	C.F. < 1.00 dB (950 MHz) C.F. < 1.20 dB (2300 MHz)
Selectivity	C.F. $\pm$ 15 MHz > 15 dB C.F. $\pm$ 20 MHz > 25 dB C.F. $\pm$ 30 MHz > 40 dB C.F. $\pm$ 40 MHz > 50 dB
Harmonic Attenuation	> 60 dB up to 3.5 GHz
Return Loss / VSWR	> 21 dB / < 1.12
Group Delay Variation	< 20 ns

## 950-2300 MHz 4-Pole Bandpass Filter

CL4P2500/20

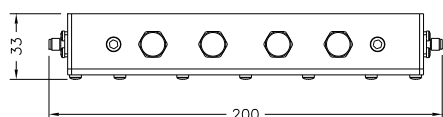
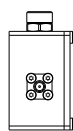
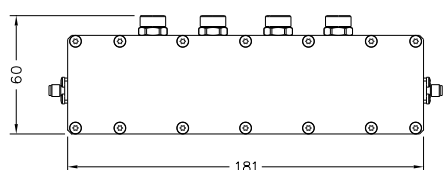


## FEATURES

- 4-Pole
- 25 mm Cavity Size
- Constant Bandwidth design
- Full Band Tunability
- DC Short

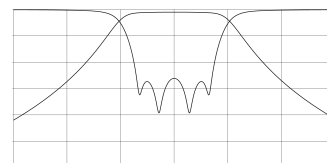
## OPTIONS

- 19" Rack Shelf



## SPECIFICATIONS

Code / Revision	E-CL4P2500/20 / A
Order / Cavity Size	4-Pole / 25 mm
Frequency Range / Bandwidth	950 to 2300 MHz / 20 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight	200x33x60 mm / 0.5 kg (1.1 lb.)
Connectors	SMA Female
	N Female

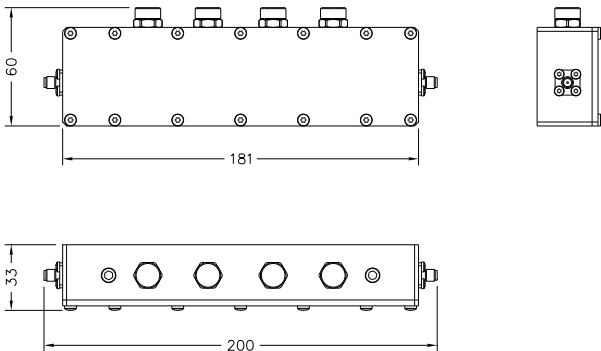
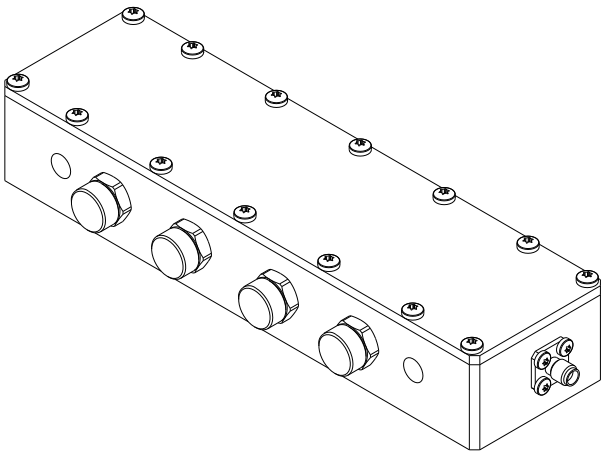


## TUNING DATA

Bandwidth	20 MHz
Max RMS Input Power	50 W
Insertion Loss	C.F. < 0.50 dB (950 MHz) C.F. < 0.60 dB (2300 MHz)
Selectivity	C.F. $\pm$ 30 MHz > 15 dB C.F. $\pm$ 40 MHz > 25 dB C.F. $\pm$ 60 MHz > 40 dB C.F. $\pm$ 80 MHz > 50 dB
Harmonic Attenuation	> 60 dB up to 3.5 GHz
Return Loss / VSWR	> 21 dB / < 1.12
Group Delay Variation	< 20 ns

950-2300 MHz 4-Pole Bandpass Filter

CL4P2500/30



FEATURES

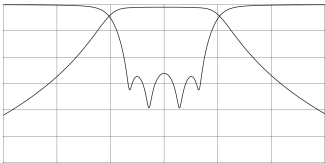
- 4-Pole
- 25 mm Cavity Size
- Constant Bandwidth design
- Full Band Tunability
- DC Short

OPTIONS

- 19" Rack Shelf

SPECIFICATIONS

Code / Revision	E-CL4P2500/30 / A
Order / Cavity Size	4-Pole / 25 mm
Frequency Range / Bandwidth	950 to 2300 MHz / 30 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight	200x33x60 mm / 0.5 kg (1.1 lb.)
Connectors	SMA Female
	N Female

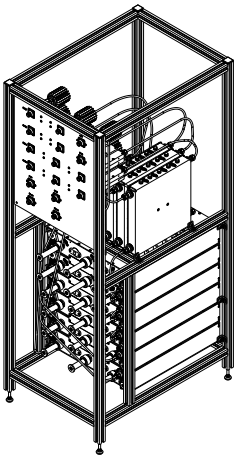


TUNING DATA

Bandwidth	30 MHz
Max RMS Input Power	50 W
Insertion Loss	C.F. < 0.35 dB (950 MHz) C.F. < 0.40 dB (2300 MHz)
Selectivity	C.F. ± 45 MHz > 15 dB C.F. ± 60 MHz > 25 dB C.F. ± 90 MHz > 40 dB C.F. ± 120 MHz > 50 dB
Harmonic Attenuation	> 60 dB up to 3.5 GHz
Return Loss / VSWR	> 21 dB / < 1.12
Group Delay Variation	< 20 ns

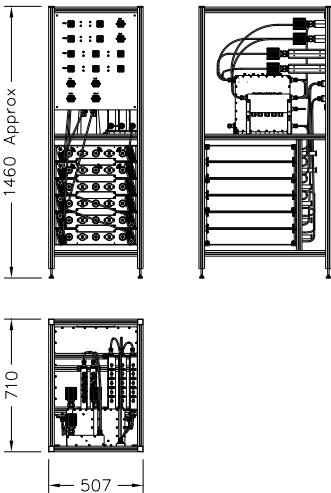


# 5-Band Multiport Branching System



### FEATURES

- Temperature Stabilization
- DC Short
- Interchangeable Connector System
- Modular Frame System



### SPECIFICATIONS

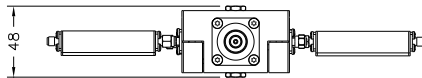
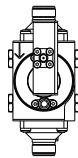
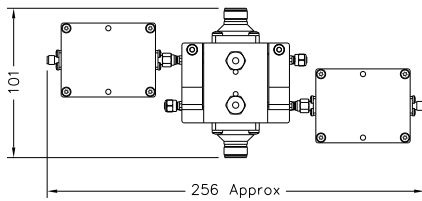
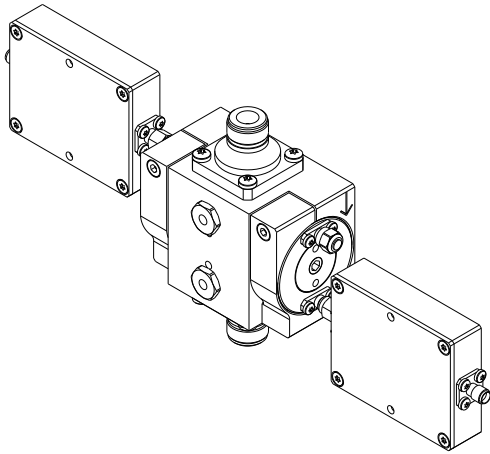
Code / Revision	MS5X / A
Frequency Range	70-500 MHz
Max Operating Temperature (Body)	65°C (149°F)
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60
Dimensions / Weight <sup>(1)</sup>	507x710x1460 mm / 116 kg (256 lb.)
Connectors <sup>(2)</sup>	N Female
	7-16 Female (Default)

TUNING DATA <sup>(2)</sup>	4 m Band	FM Band	2 m Band	DAB Band	70 cm Band
Tx, Rx	Tx1, Rx1	Tx2, Tx3	Rx2, Rx3, Rx4 Tx4, Tx5, Tx6	Tx7	Tx8, Tx9 Rx5, Rx6
Frequency	77-78.3 MHz	87.5 - 108.0 MHz	168 - 172.8 MHz	188 - 230 MHz	412 - 423 MHz
Max RMS Output Power	300 W		100 W		50 W
Insertion Loss	> 4 dB (Typ)	> 1.5 dB (Typ)	< 8 dB (Typ)	< 1 dB (Typ)	< 5 dB (Typ)
Return Loss / VSWR	> 26 dB / < 1.1		> 26 dB / < 1.1		> 26 dB / < 1.1
Isolation					
Tx ↔ Rx (any)	> 75 dB		> 75 dB		> 75 dB
Rx ↔ Tx (any)	> 75 dB		> 75 dB		> 75 dB
Tx ↔ Tx (Different Band)	> 75 dB		> 75 dB		> 75 dB
Rx ↔ Rx (Different Band)	> 75 dB		> 75 dB		> 75 dB
Tx ↔ Tx (Same Band)	> 30 dB		> 30 dB		> 30 dB
Rx ↔ Rx (Same Band)	> 30 dB		> 30 dB		> 30 dB

<sup>(1)</sup> Default configuration    <sup>(2)</sup> Other Connectors/Options/Tunings available    <sup>(3)</sup> Altitude < 1500 m (4,900 ft.), free air, standard environmental conditions, non-adjacent channels

## 2-Probe 7/8" Measurement Directional Coupler

DC2M23



## FEATURES

- 2 Probes
- 100 MHz to 2 GHz Equalized Response
- Interchangeable Connector System

## OPTIONS

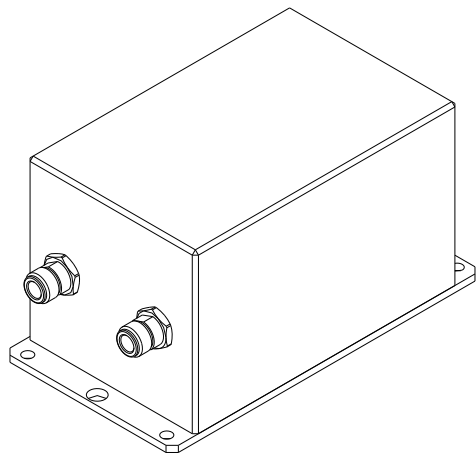
- SMA or N Female RF Detectors

## SPECIFICATIONS

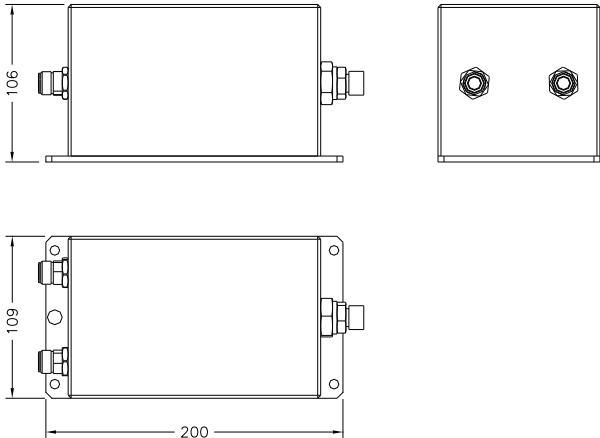
Code / Revision	C-DC2M23 / A	
Max RMS Output Power	100 MHz:	7.0 kW
	250 MHz:	4.0 kW
	500 MHz:	2.5 kW
	1.000 MHz:	600 W
	2.000 MHz:	160 W
No. of Probes	Up to 2	
Frequency Range	100 MHz to 2 GHz	
Coupling Value	-50 dB	
Coupling Flatness <sup>(1)</sup>	< 1.0 dB	
Return Loss / VSWR	> 30 dB / < 1.07	
Directivity	100 to 1000 MHz:	> 30 dB
	1000 to 2000 MHz:	> 26 dB
Max Operating Temperature (Body)	65°C (149°F)	
Environmental Conditions	-5 to +55°C (+23 to +131°F), IP60	
Dimensions / Weight <sup>(2)</sup>	48x101x256 mm / 0,8 kg (1,8 lb.)	
Connectors <sup>(3)</sup>	<b>2x 32 mm Series</b>	<b>Input; Output</b>
	D-PC32C	N Female
	D-PC32D	N Male
	D-PC32E	7-16 Female (Default)
	D-PC32F	7-16 Male
Options <sup>(3)</sup>	O-DT.01	SMA Female RF Detector
	O-DT.02	N Female RF Detector

<sup>(1)</sup> Maximum variation overall operating band <sup>(2)</sup> Default configuration<sup>(3)</sup> Other Connectors/Options available

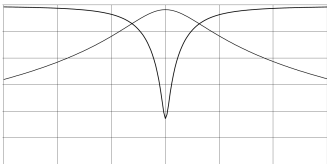
437-449 MHz Single Cavity Filter



- FEATURES
- 1-Pole
  - 50 mm Cavity Size



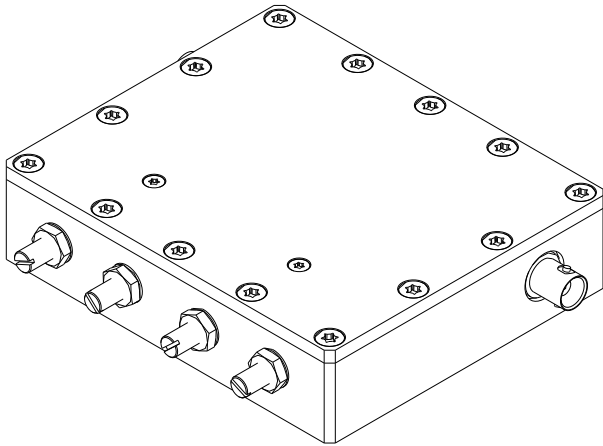
SPECIFICATIONS	
Code / Revision	E-CF450 / A
Order / Cavity Size	1-Pole / 50 mm
Frequency Range / Bandwidth	437-449 MHz / $\pm 280$ kHz
Max Operating Temperature (Body)	90° C (194° F)
Environmental Conditions	-40 to +85°C (-40 to +185°F), IP60
Dimensions / Weight	200x109x106 mm / 1.8 kg (3.7 lb.)
Connectors	2x N Female



TUNING DATA	
Bandwidth	$\pm 280$ kHz
Max RMS Input Power	50 W
Insertion Loss	437.0 MHz 449.0 MHz C.F. < 1.00 dB < 1.00 dB
Selectivity	C.F. $\pm 280$ kHz > 3 dB C.F. $\pm 1.0$ MHz > 10 dB C.F. $\pm 1.5$ MHz > 12 dB
Return Loss / VSWR	> 20 dB / < 1.22

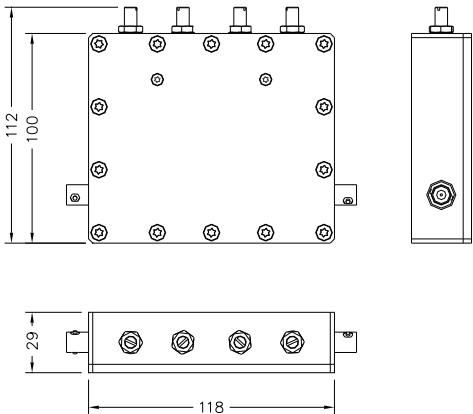
# 437-449 MHz 4-Pole Bandpass Filter

CL450



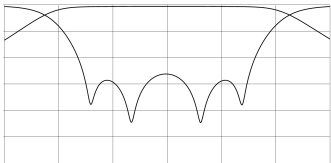
### FEATURES

- 4-Pole
- 20 mm Cavity Size
- Elliptical Response, Cross Coupling



### SPECIFICATIONS

Code / Revision	E-CL450 / A
Order / Cavity Size	4-Pole / 20 mm
Frequency Range / Bandwidth	442.8 MHz / 11.5 MHz
Max Operating Temperature (Body)	90° C (194° F)
Environmental Conditions	-40 to +85°C (-40 to +185°F), IP60
Dimensions / Weight	118x29x112 mm / 0.6 kg (1.3 lb.)
Connectors	2x BNC Female

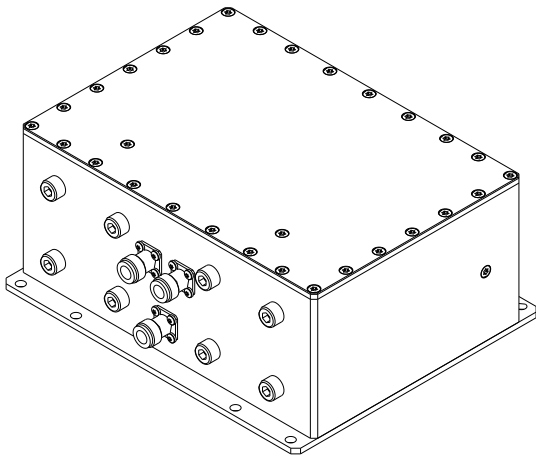


### TUNING DATA

Bandwidth	11.5 MHz
Max RMS Input Power	50 W
Insertion Loss	442.8 MHz C.F. < 0.60 dB ±5.75 MHz < 0.80 dB
Selectivity	C.F. ± 11 MHz > 6 dB C.F. ± 13 MHz > 10 dB C.F. ± 25 MHz > 40 dB
Return Loss / VSWR	> 22 dB / < 1.17

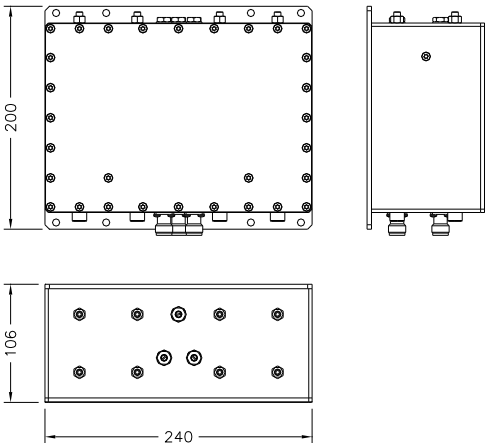
# 437-439 MHz 4-Pole Duplexer

**DX450**



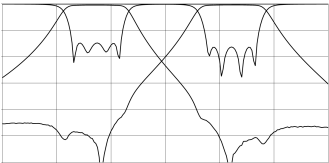
**FEATURES**

- 4-Pole
- 50 mm Cavity Size
- Elliptical Response, Cross Coupling



**SPECIFICATIONS**

Code / Revision	E-DX450 / A
Order / Cavity Size	4-Pole / 50 mm
Frequency Range / Bandwidth	437-449 MHz / 1.6 MHz
Max Operating Temperature (Body)	90° C (194° F)
Environmental Conditions	-40 to +85°C (-40 to +185°F), IP60
Dimensions / Weight	240x106x200 mm / 4.2 kg (9.2 lb.)
Connectors	2x N Female



**TUNING DATA**

Bandwidth	1.6 MHz
Max RMS Input Power	50 W
Insertion Loss	437.062 - 438.687 MHz < 0.80 dB 447.062 - 448.687 MHz < 0.80 dB
Isolation	Tx to Rx > 70 dB Rx to Tx > 70 dB
Return Loss / VSWR	> 22 dB / < 1.17





# COM-TECH

HIGH FREQ & BROADCAST COM-TECH.IT

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