

- Six foot (1.8 m) DualBand, eight port antenna with a 45° azimuth beamwidth covering 614-896 MHz and 1695-2200 MHz frequencies
- Patented array provides full length columns for both LB and MB arrays, while within a narrow 21" width enclosure
- Patented array allows for high performance and low Azimuth Beamwidth variability over the frequency range, providing consistent performance and coverage
- Four wide low band ports covering 614-896 MHz and four wide mid band ports covering 1695-2200 MHz in a single antenna enclosure
- Full Spectrum Compliance 614-896 MHz / 1695-2200 MHz
- Array configuration allows for 4T4R (4X4 MIMO) on Low Band and 4T4R (4X4 MIMO) on Mid Band
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements

## Overview

The CCI Multi-Port DualBand array is an eight port antenna, with four wide mid band ports covering 1695-2200 MHz and four wide low band ports covering 614-896 MHz. The antenna provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) in the high band and 4X4 Multiple-input Multiple-output (MIMO) in low band. The CCI 8-Port allows independent tilt control between the low band ports and mid band ports.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

## Applications

- 4x4 MIMO for the Mid Band and 4x4 MIMO for the Low Band ports
- Ready for Network Standardization on 4.3-10 connectors
- With CCI's multiband antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs



SPECIFICATIONS

DualBand Antenna

OPA45R-TW6B

Electrical

Ports	4 x Low Band Ports for 614-896 MHz		
Frequency Range	614-698 MHz	698-806 MHz	824-896 MHz
Gain	15.0 dBi	15.5 dBi	16.2 dBi
Azimuth Beamwidth (-3dB)	44°	39°	34°
Elevation Beamwidth (-3dB)	13.9°	12.2°	10.7°
Electrical Downtilt	2° to 12°	2° to 12°	2° to 12°
Elevation Sidelobes (1st Upper)	< -15 dB	< -16 dB	< -15 dB
Front-to-Back Ratio @180°	> 28 dB	> 32 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications*			
Frequency Range	614-698 MHz	698-806 MHz	824-896 MHz
Gain over all Tilts (dBi)	13.8	14.6	15.3
Gain over all Tilts Tolerance (dB)	0.9	0.6	0.6
Gain at Low-Tilt (dBi)	13.8	14.6	15.2
Gain at Mid-Tilt (dBi)	13.8	14.7	15.3
Gain at High-Tilt (dBi)	13.7	14.6	15.3
Azimuth Beamwidth Tolerance (°)	6.0	2.3	2.6
Elevation Beamwidth Tolerance (°)	2.2	1.9	1.3
Electrical Downtilt Deviation (°)	1.8	1.1	0.9
First Upper Sidelobe Suppression (dB)	11.7	11.5	10.1
Upper Sidelobe Suppression Peak to 20° (dB)	13.1	13.4	15.0
Front-to-Back Ratio over ±20° (dB)	18.7	21.8	26.3
Cross-polar Discrimination at 3 dB (dB)	19.4	22.3	17.8

\* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1. All specifications are subject to change without notice.



SPECIFICATIONS

DualBand Antenna

OPA45R-TW6B

Electrical

Ports	4 x High Band Ports for 1695-2200 MHz		
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2200 MHz
Gain	18.6 dBi	19.1 dBi	19.4 dBi
Azimuth Beamwidth (-3dB)	44°	44°	43°
Elevation Beamwidth (-3dB)	6.2°	5.8°	5.4°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	< -21 dB	< -20 dB	< -20 dB
Front-to-Back Ratio @180°	> 33 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 20 dB	> 19 dB	> 21 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications*	4 x High Band Ports for 1695-2200 MHz		
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2200 MHz
Gain over all Tilts (dBi)	17.7	18.3	18.6
Gain over all Tilts Tolerance (dB)	0.6	0.8	0.3
Gain at Low-Tilt (dBi)	17.6	18.0	18.3
Gain at Mid-Tilt (dBi)	17.9	18.4	18.7
Gain at High-Tilt (dBi)	17.7	18.4	18.8
Azimuth Beamwidth Tolerance (°)	4.0	3.6	2.7
Elevation Beamwidth Tolerance (°)	0.4	0.4	0.4
Electrical Downtilt Deviation (°)	0.8	0.9	1.0
First Upper Sidelobes Suppression (dB)	17.1	18.6	18.9
Upper Sidelobe Suppression Peak to 20° (dB)	17.1	18.4	18.8
Front-to-Back Ratio over ±20° (dB)	20.6	23.3	24.5
Cross-polar Discrimination at 3 dB (dB)	13.6	13.0	13.6

\* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1. All specifications are subject to change without notice.



SPECIFICATIONS

DualBand Antenna

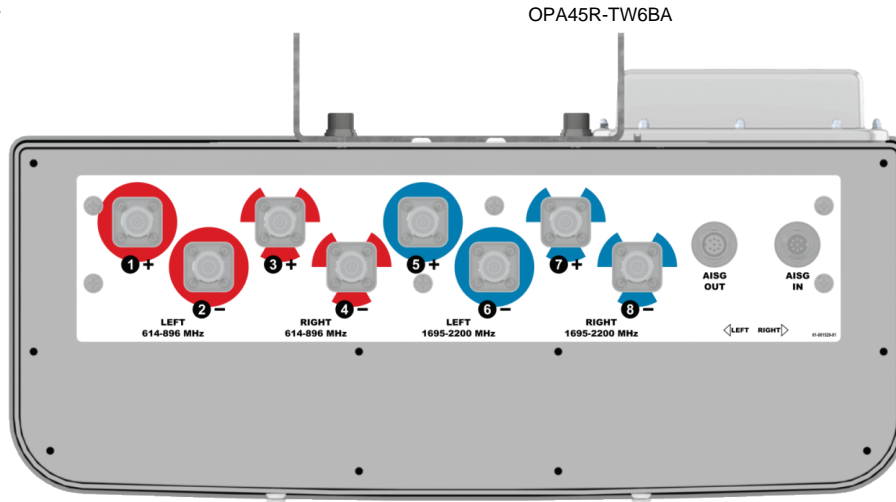
OPA45R-TW6B

Mechanical

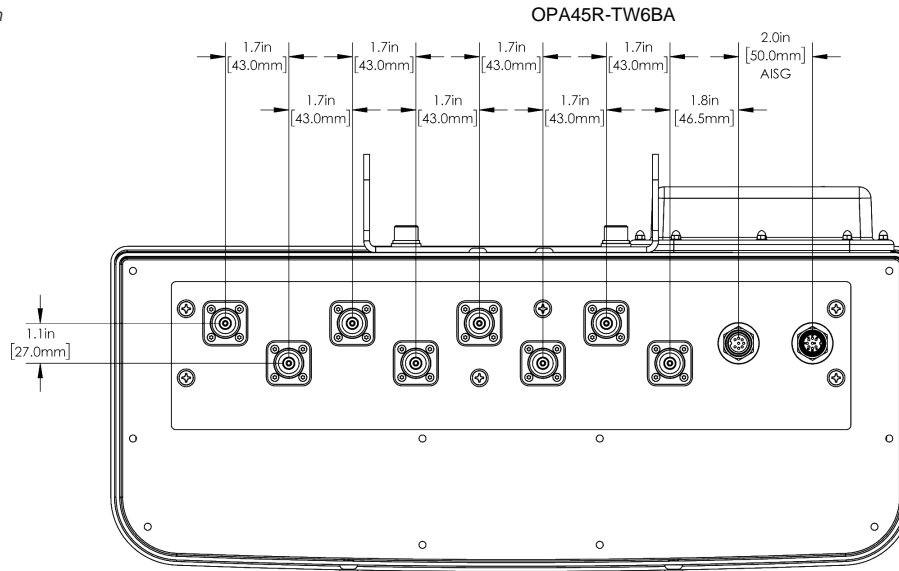
Dimensions (LxWxD)	72.0x21.1x8.3 in (1830x535x212 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load <sup>1</sup>	261 lbf @ 100 mph    1162 N @ 161 kph
Side Wind Load <sup>1</sup>	60 lbf @ 100 mph    265 N @ 161 kph
Effective Projective Area (EPA), Front <sup>1</sup>	10.8 ft <sup>2</sup> (1.0 m <sup>2</sup> )
Weight *	71.4 lbs (32.4 kg)
Connector	8 x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

<sup>1</sup>Windload values calculated using CFD analysis  
\* Weight excludes mounting kit

Bottom View



Connector Spacing Diagram





DualBand Antenna

OPA45R-TW6B

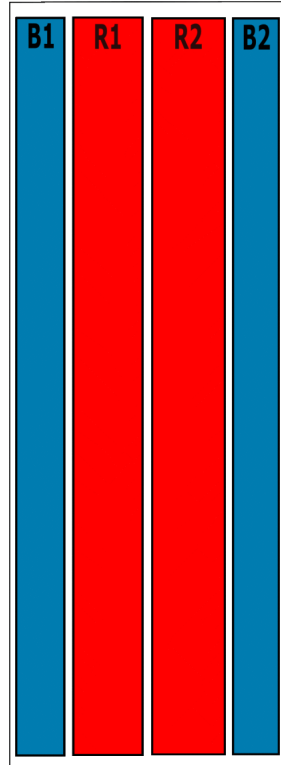
SPECIFICATIONS

Mechanical

RET to Element Configuration

OPA45R-TW6BA Element and RET configuration

**Top of antenna  
Viewed from rear**



**RET placement  
as viewed from rear  
of antenna**

Top of antenna

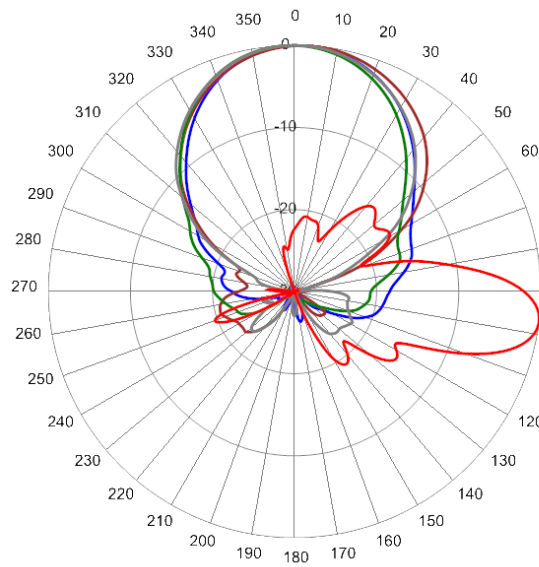


Array	Ports	Freq (MHz)	Ports controlled by common RET	AISG RET UID
R1	1, 2	614-896	1, 2, 3, 4	C1xxxxxxxMM.1
R2	3, 4	614-896		
B1	5, 6	1695-2200	5, 6, 7, 8	C1xxxxxxxMM.2
B2	7, 8	1695-2200		

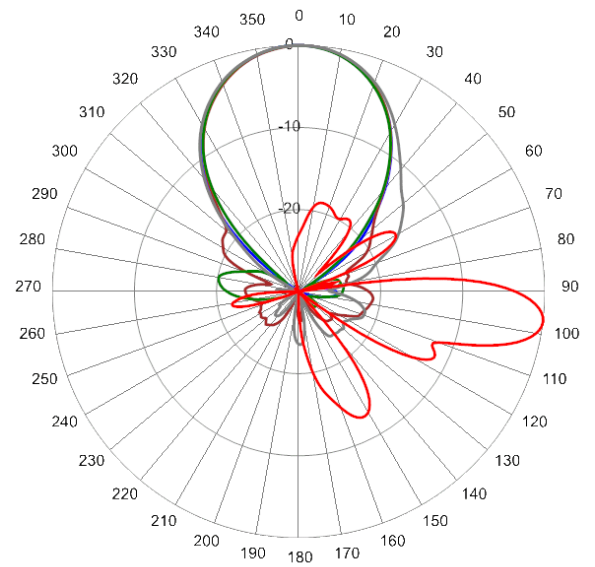


Typical Antenna Patterns

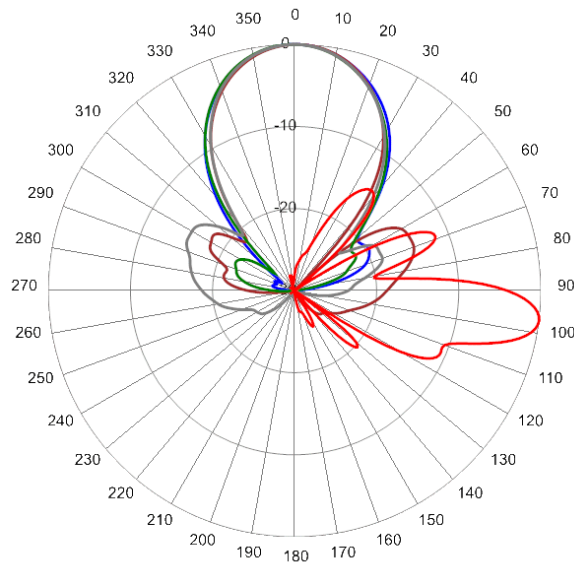
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



614 MHz Azimuth with Elevation 7°



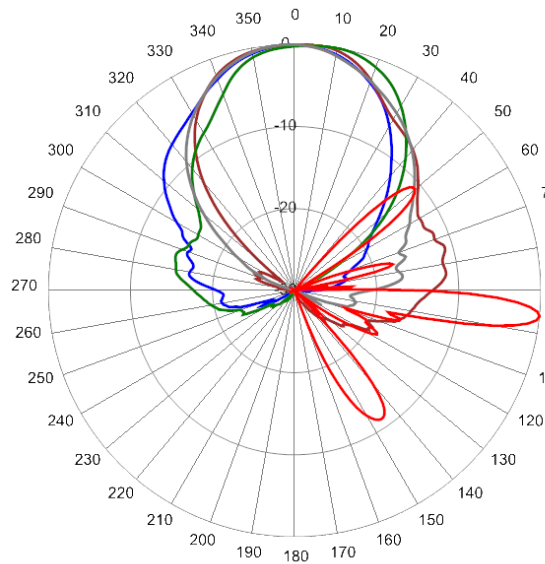
698 MHz Azimuth with Elevation 7°



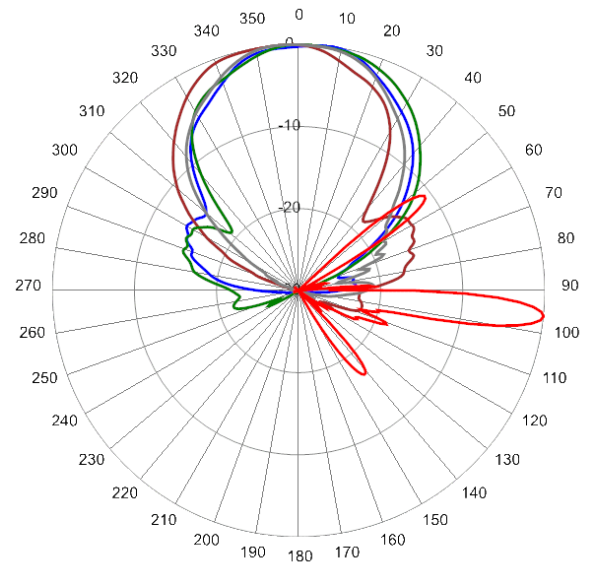
824 MHz Azimuth with Elevation 7°



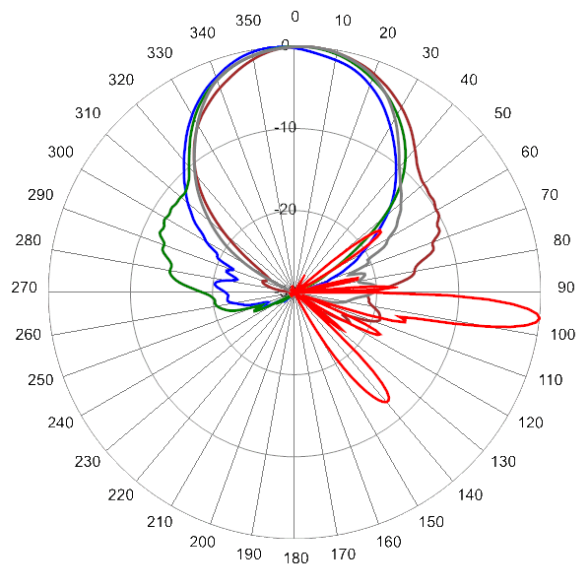
Typical Antenna Patterns



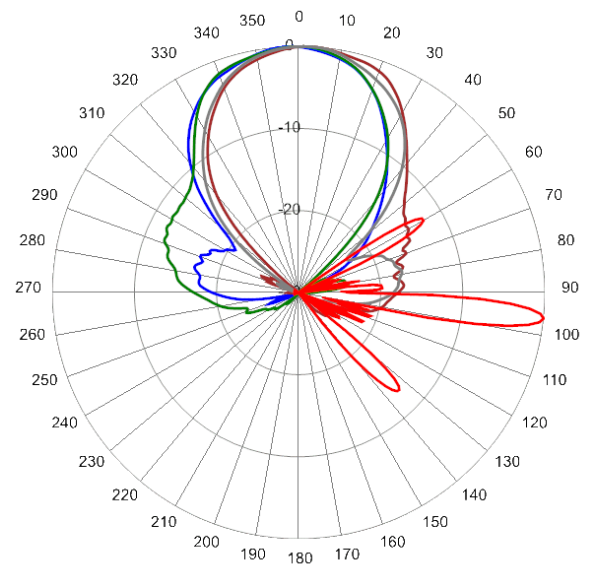
1740 MHz Azimuth with Elevation 6°



1850 MHz Azimuth with Elevation 6°



1920 MHz Azimuth with Elevation 6°



2155 MHz Azimuth with Elevation 6°



ORDERING

DualBand Antenna

OPA45R-TW6B

Parts & Accessories

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<b>OPA45R-TW6BA-K</b>	Six foot (1.8 m) DualBand antenna with 45° azimuth beamwidth, 4.3-10 female connectors, 2 factory installed BSA-RET400 RET actuators (Type 17 Internal) and MBK-01 mounting bracket
<b>MBK-01</b>	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
<b>MBK-16</b>	Mounting bracket kit (top and bottom) with fixed 0° mechanical tilt
<b>BSA-RET400</b>	Type 17 Internal remote electrical tilt actuator
<b>AISGC-M-F-10FT</b>	10 Ft (3 m) Male/Female RRU to Antenna AISG cable

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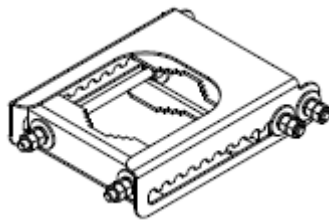


Mounting Bracket Kit

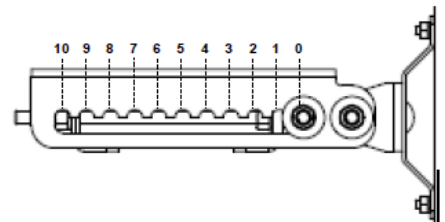
MBK-01

Mechanical

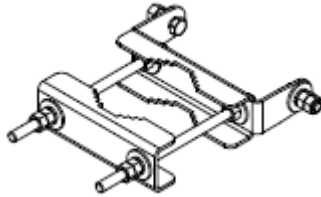
<b>Weight</b>	12.6 lbs (5.7 kg)
<b>Hinge Pitch</b>	47.25 in (1200 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft·lb (54 N·m)
<b>Mechanical Tilt Adjustment</b>	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

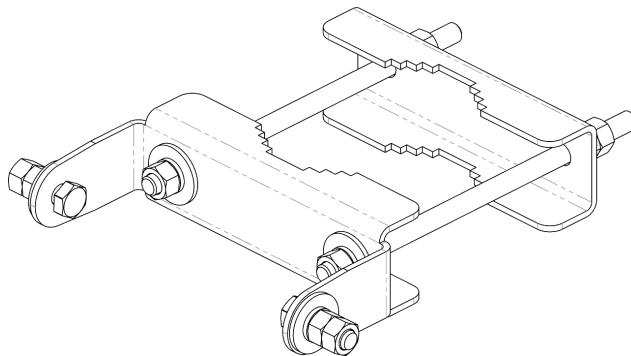
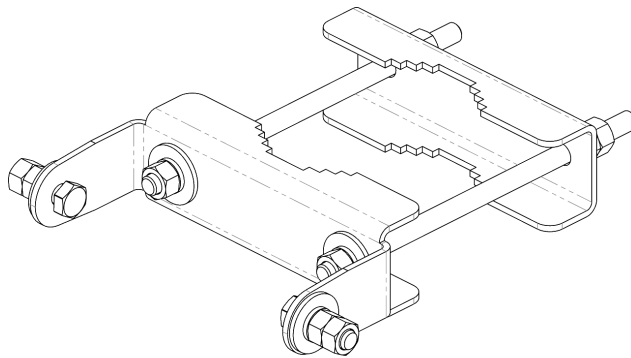


Mounting Bracket Kit

MBK-16

Mechanical

<b>Weight</b>	9.9 lbs (4.5 kg)
<b>Hinge Pitch</b>	47.25 in (1200 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft·lbs (54 N·m)
<b>Mechanical Tilt</b>	0°



MBK-16 Top and Bottom Bracket



### Internal Remote Electrical Tilt (iRET)

BSA-RET400

#### General Specifications

Part Number	BSA-RET400
Protocols	AISG 2.0
RET Type	Type 17
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40° C to 70° C

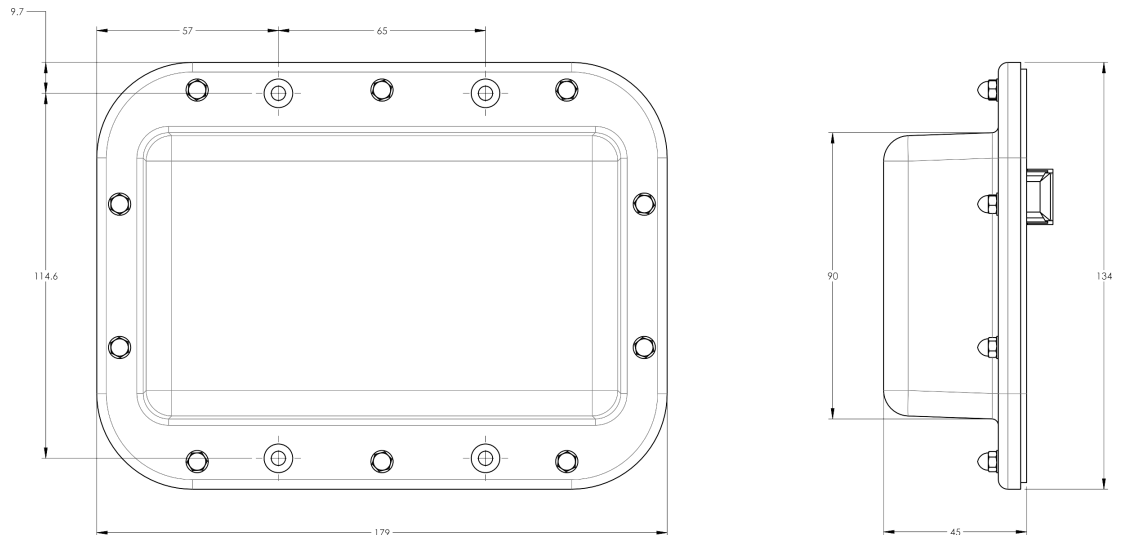
#### Electrical

Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	100 mA at $V_{in}=24$ (500 mA MAX)
Current Consumption Idle	10 mA at $V_{in}=24$

#### Mechanical

Dimensions (LxWxD)	7.0x5.3x1.8 in. (179x134x45 mm)
Housing	ASA/ABS/Aluminum
Weight	1.3 lbs (0.6 kg)

ASA= Acrylic Styrene Acrylonitrile  
ABS=Acrylonitrile Butadiene Styrene





AISG Cable

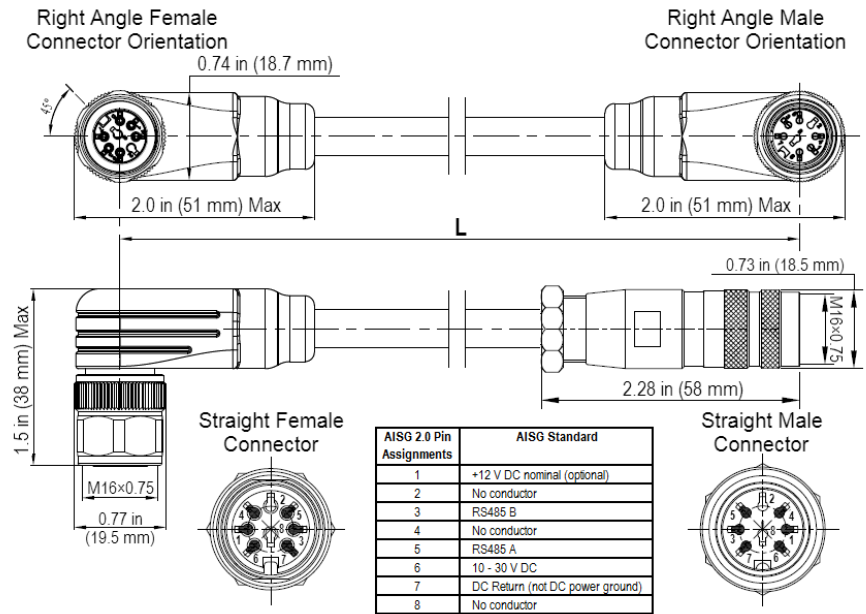
AISGC-M-F-xFT

Electrical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cable style	UL2464
Protocol	AISG 1.1 and AISG 2.0
Maximum voltage	300 V
Rated current	5 A at 104° F (40° C)

Mechanical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cables per kit	1
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female
Tightening torque	Hand tighten only $\approx$ 1.84 ft-lbs (2.5 Nm)
Construction	Shielded (Tinned Copper Braid)
Braid coverage	85%
Jacket Material	Matte Polyurethane (Black)
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464
Cable Diameter	0.307 in (7.8 mm)
Length	See order details
Minimum bend radius	3.15 in (80 mm)



AISG-Male to AISG-Female Jumper Cable



Environmental Specifications

Individual Cable Part Number	AISGC-M-F-xFT
Temperature Range	-40° to 80° C
Flammability	UL 1581 VW-1
Ingress Protection	IEC 60529:2001, IP67



STANDARDS & CERTIFICATIONS

DualBand Antenna

OPA45R-TW6B

Standards & Compliance

<b>Safety</b>	EN 60950-1, UL 60950-1
<b>Emission</b>	EN 55022
<b>Immunity</b>	EN 55024
<b>Environmental</b>	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN 60529, IP 24

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

