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C20-1200WG

WR-12 High Directivity Waveguide Coupler, 20dB, 60-90GHz

DEVICE OVERVIEW

General Description

The C20-1200WG is a WR-12 20 dB waveguide coupler featuring high 38 dB directivity over a 60-90GHz operational bandwidth. These waveguide components are built with high precision and then gold plated for high corrosion resistance. They have very low 0.8 dB insertion loss and excellent 34 dB return loss. Manufactured to rigid specifications, these transmission line components provide minimum detrimental effects on overall system VSWR.

Download s-parameters here

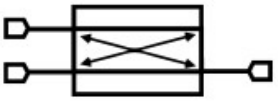
Features

- 19 dB Coupling
- Low 0.8 dB Insertion Loss
- High 38 dB Directivity
- WR-12 Waveguide
- UG-387/U Input and Output Flanges

Applications

- mmWave Applications

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
C20-1200WG	WR-12 High Directivity Waveguide Coupler, 20dB, 60-90GHz	WR-12	RoHS	Released	EAR99

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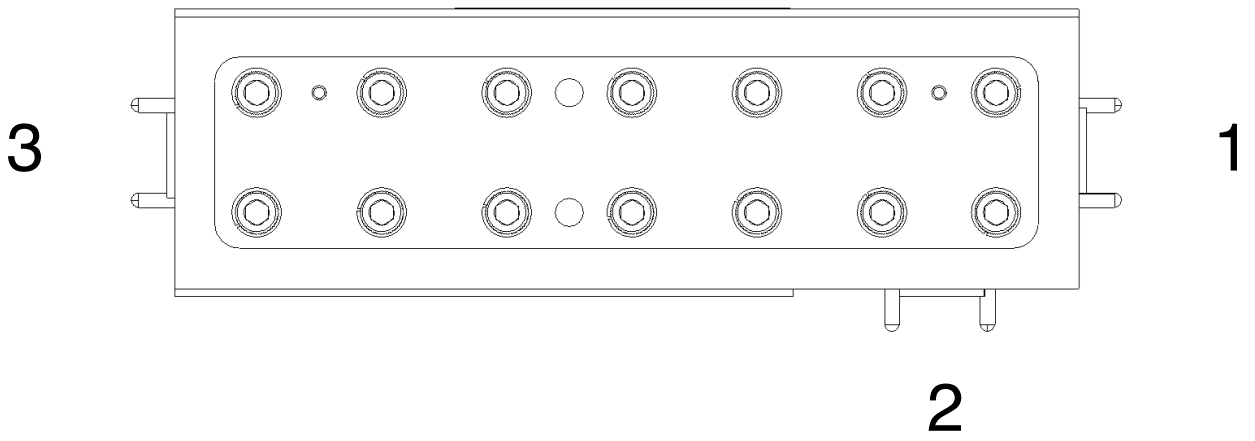
Table Of Contents

Revision History

Revision Code	Revision Date	Comment
-	2025-08-11	Initial Release

Port Configuration and Functions

Port Diagram



Port Functions

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	Input	WR-12-UG-387/U	-	-
Port 2	Coupled	WR-12-UG-387/U	-20dB coupled output port	-
Port 3	Output	WR-12-UG-387/U	-	-

Specifications

Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded, the device may be inoperable or have a reduced lifetime.

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	85	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-40	°C
Minimum Storage Temperature	-55	°C

Package Information

Parameter	Details	Rating
ESD	This device is not sensitive to ESD.	N/A
Dimensions	-	85.85 x 30.48 x 21.96 mm

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Electrical Specifications

Min and Max limits are guaranteed at Ta = 25°C

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Coupling Ratio	Configuration A, Temp = 25°C	60	90	-	18.9	-	dB
Direct Line Insertion Loss	Configuration A, Temp = 25°C	60	90	-	0.8	-	dB
Directivity	Configuration A, Temp = 25°C	60	90	-	38	-	dB
Coupled Port Return Loss	Configuration A, Temp = 25°C	60	90	-	39	-	dB
Frequency Sensitivity	Configuration A, Temp = 25°C	60	90	-	0.76	-	dB
Amplitude Flatness [1]	Configuration A, Temp = 25°C	60	90	-	0.19	-	dB

[1] Amplitude Flatness = Median value of ABS(Measured Coupling Power – Average Coupling Factor)

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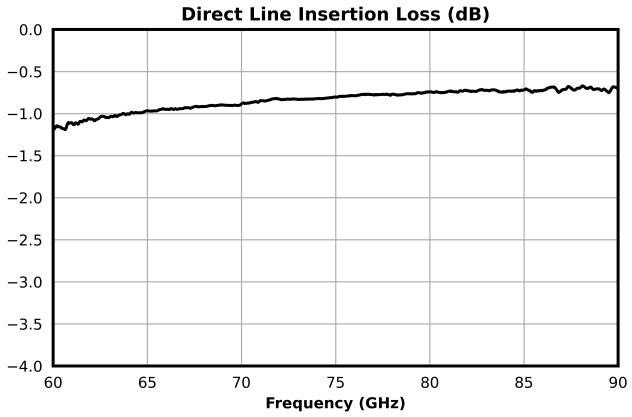
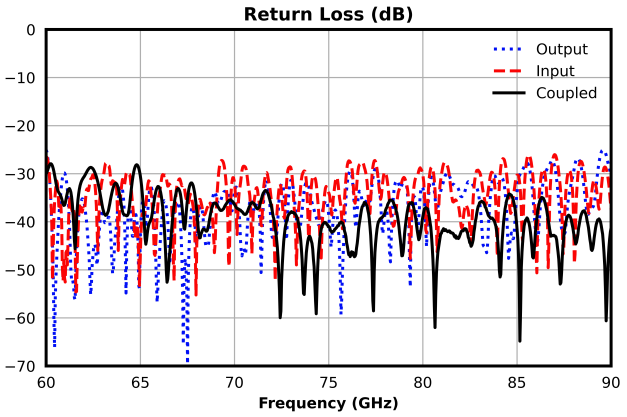
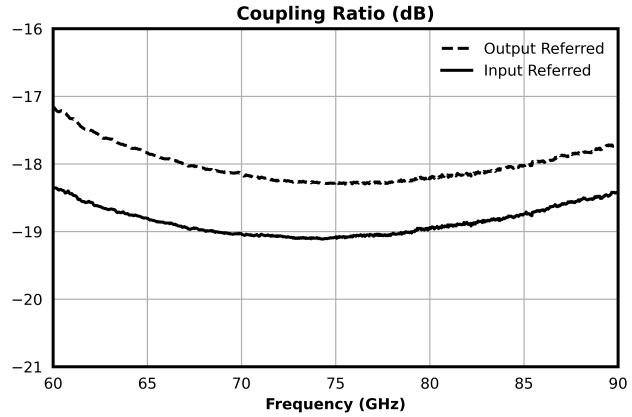
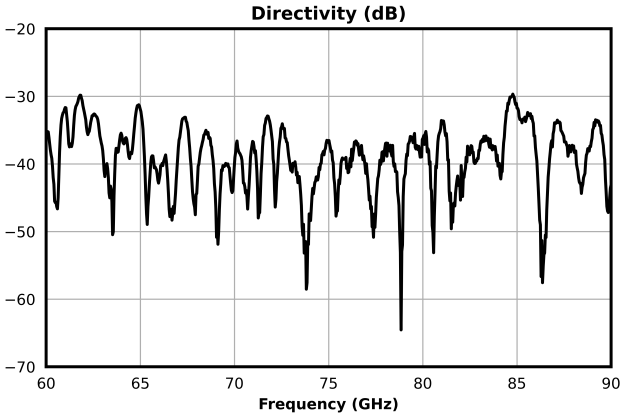
Typical Performance Plots









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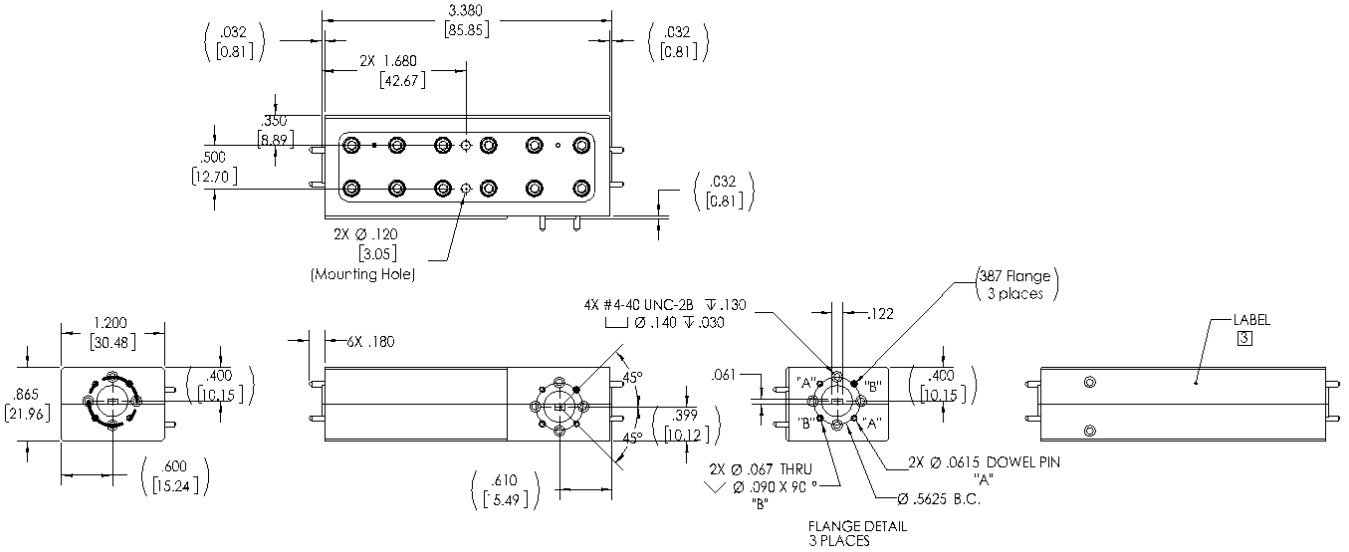
Mechanical Data

Outline Drawing

Download : Outline 2D Drawing | Outline 3D Drawing | Outline 3D STP

DRAWING	DESCRIPTION	SHIM
C10-1200WG-OUT	Outline, WR-12 Coupler, 10dB	421-117601-10 (10dB)
C20-1200WG-OUT	Outline, WR-12 Coupler, 20dB	421-117701-20 (20dB)
C30-1200WG-OUT	Outline, WR-12 Coupler, 30dB	421-117801-30 (30dB)
C40-1200WG-OUT	Outline, WR-12 Coupler, 40dB	421-117901-40 (40dB)



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