

**Custom Offset Waveguide,
with Coupler, CPR284**

APPROVALS			REVISIONS			
	INITIALS	DATE	REV	DESCRIPTION	DATE	APPR
Drawn	JFG	09AUG05	1	Prototype Release	09AUG05	JFG
Engineering			2	Added flex section part number	15DEC09	JFG
Manufacturing			3	Clarified forward power coupler	16JUN10	jfg
Marketing						

1.0 General Description

This document describes a custom waveguide section designed for use in the L-3510 wafer fab tool manufactured by Novellus (formerly GaSonics). The product manufactured by GAE is fully compliant with the original GaSonics specification, part number 17692-01 (AGL p/n C12519). It incorporates a directional coupler probe for measuring forward microwave power, several bends and a short section of flexible waveguide in a single waveguide component. The probe design is the same as those used in GAE's WaveProbe™ family of waveguide couplers that offer high performance microwave power monitoring. These features are virtually identical to those of the original OEM waveguide assembly.

An improvement has been incorporated into the GAE product that significantly enhances reliability as compared to the original OEM product. The original custom waveguide utilizes a copper-filled epoxy compound in the construction of the flexible waveguide section. This epoxy has been prone to fatigue failure and cracking which often results in excessive microwave leakage. The current design utilizes solder brazed construction of the flexible waveguide section, thus increasing strength and eliminating fatigue failure.

2.0 Specifications**2.1 Electrical**

Frequency	2450 MHz +/- 50 MHz
Power (continuous)	2 kW
Insertion Loss	0.1 dB maximum
Input VSWR	1.15:1 maximum
Probe Coupling Factor	60 dB +1.00 -0.0 dB, indicated to within +/-0.08 dB of measured forward power value
Probe Directivity	25 dB minimum
Microwave Leakage	1 mW/cm ² maximum measured at 5 cm

2.2 Mechanical

Waveguide	WR284
Waveguide Flanges	CPR (UG1725/U), tapped holes on output end
Coupler Output Connector	Type N female
Construction	Dip brazed aluminum waveguide and flanges (offset section) Copper/bronze flexible waveguide soldered to brass flanges (flexible section)
Finish	Clear chemical film (Alodine) on offset section

**Custom Offset Waveguide,
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Product ID	Manufacturer name Manufacturer's part number and revision Date coded serial number Customer's part number and revision
Coupling Factor	The forward power coupling factor shall be indicated on the side of each product.
Calibration Date	The date of last calibration and expiration of calibration shall be indicated on the side of each product.
Forward Power Direction	The orientation with respect to the direction of forward power flow shall be indicated on the side of each product.
Hazard Warning	Microwave warning labels shall be placed near both waveguide flanges.

3.0 Ordering Information

<u>Description</u>	<u>GAE Part Number</u>
Custom Offset Waveguide with Coupler, CPR284	912224
Flex Waveguide Section, CPR284, 5.25"	912115-5.25

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4.0 Outline Drawing

