

**Magnetron, 2M130, Water Cooled**

APPROVALS			REVISIONS			
	INITIALS	DATE	REV	DESCRIPTION	DATE	APPR
Drawn	JFG	09APR00	A	Production Release	09APR00	JFG
Engineering						
Manufacturing						
Marketing						

**1.0 General Description**

This document describes a water cooled version of the Hitachi 2M130 magnetron that is specially designed for installation in the GL139 line of microwave generators originally manufactured by AGL (ASTeX/Gerling Labs). The current version of this magnetron supersedes and is a direct replacement of the original AGL part number C12139 magnetron and provides the same performance and life.

Two assembly configurations are available. Part number 910443 is the basic magnetron for installation into new generators. Part number 910443-1 is for field replacement of the basic magnetron and includes Swagelok water connection fittings for upgrading older generators to the latest style fittings. Magnetron replacement instructions are also provided with the 910443-1 assembly.

Description	Equivalent Part Numbers			
	GAE	AGL	GaSonics	Richardson
Basic magnetron (for new generators)	910443	C12139	n/a	NL10250-9
Magnetron with water fittings (field replacement)	910443-1	C12139-1	73797-06	NL10250-19

**2.0 Reference Documents**

910443 Assembly Drawing, Water-Cooled 2M130 Magnetron  
 940006 Technical Service Document, Magnetron Replacement Instructions

**3.0 Specifications****3.1 Absolute Maximum Ratings:**

ITEM	SYM	MIN	MAX	UNITS
Filament surge current	-	-	100	Aac
Filament voltage, Stand-by	Ef	4.4	5.0	Vac
Filament voltage, Ib = 725 mAdc	Ef	3.1	3.5	Vac
Filament warm-up	Tk	5	-	Sec
Anode voltage, peak	Ebm	-	4.3	kV
Anode current, peak	Ibm	-	2.1	A
Anode current, average	Ib	-	750	mAdc
Anode input power	Pi	-	2.6	kW
Load VSWR	φL	-	4	-
Anode core temperature	Tp	-	180	°C
Case temperature	Tcase	-	120	°C
Storage temperature	-	-30	60	°C

**3.2 Test Conditions for Electrical Characteristics:**

Power Supply Type Single-phase, full-wave bridge rectifier without filter  
 Filament voltage Ef = 4.6 Vac (stand-by), 3.3 Vac (Ib = 725 mAdc)

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Average anode current       $I_b = 725 \text{ mAdc}$   
 Load VSWR                       $\phi L < 1.1$

### 3.3 Limits and Characteristics:

ITEM	CONDITION	SYM	BOGIE	MIN	MAX	UNITS
Filament current, stand-by	Tk=120sec min.	If	20	18.5	21.5	Aac
Anode voltage, peak		Ebm	4.00	3.85	4.20	kVp
Output power, average		Po	1930	1750	-	W
Frequency		fe	2455	2440	2470	MHz
Stability	$\phi L < 3$	ST	-	700	-	mAdc
Breakdown voltage		Et	-	10	-	kVdc

### 3.4 Mechanical:

Cooling water connections      1/4" OD soft copper tubing with 1/4" Swagelok® tube fittings  
 Cooling water flow              0.5 gpm min. @ 35 °C max. input temperature

### 4.0 Ordering Information

Part Number	Description
910443	Magnetron Assembly, 2M130 Water-Cooled (for installation in new generators)
910443-1	Magnetron Assembly, with Water Fittings (for field replacement)

### 5.0 Outline Drawing

