

**Magnetron Assembly,
1.8/3kW Water Cooled**

APPROVALS			REVISIONS			
	INITIALS	DATE	REV	DESCRIPTION	DATE	APPR
Drawn	JFG	24JUN03	2	Updated water connections	19NOV03	JFG
Engineering						
Manufacturing						
Marketing						

1.0 General Description

This document describes a water-cooled magnetron assembly that is specially designed for installation in the SmartPower™ line of microwave generators manufactured by ASTeX. Two versions of the magnetron with output ratings of 1.8kW and 3kW are available. Products described herein manufactured by GAE are functionally equivalent to ASTeX part numbers C13733-x (without interlock harness) and C13824-x (with interlock harness) magnetrons and provide the same performance and life.

2.0 Reference Documents

911297 Assembly Drawing

3.0 Specifications**3.1 Absolute Maximum Ratings:**

ITEM	SYM	UNITS	1.8kW		3kW	
			MIN	MAX	MIN	MAX
Filament voltage, Stand-by	Ef	Vac	4.4	5.0	4.4	5.0
Filament voltage, Ib = 725 mAdc	Ef	Vac	3.1	3.5	3.2	3.6
Filament warm-up	Tk	Sec	5	-	5	-
Anode voltage, peak	Ebm	kV	-	4.3	-	5.6
Anode current, peak	l _m	A	-	2.1	-	3.0
Anode current, average	I _b	mAdc	-	750	-	1000
Anode input power	Pi	kW	-	2.6	-	4.7
Load VSWR	ϕL	-	-	4:1	-	2.5:1
Anode core temperature	Tp	°C	-	180	-	180

3.2 Typical Operation:

(single-phase, full-wave doubler power supply; 1.1:1 max load VSWR)

ITEM	SYM	UNITS	1.8kW	3kW
Frequency	f _e	MHz	2450	2455
Filament voltage, stand-by	Ef	Vac	4.6	4.6
Filament voltage, operate	Ef	Vac	3.5	3.0
Filament current, stand-by	I _f	Aac	18.5	18.5
Anode voltage, peak	Ebm	kVp	3.85	5.4
Anode current, average	I _b	mAdc	650	900
Output power, average	P _o	W	1750	3000

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3.3 Mechanical:

Filament connections	#8 ring terminals on 11" flying leads
Mounting hardware	Captive fasteners, #10-32 x .50 long, spring-loaded
Cooling water connections	9/16-18 SAE/MS straight thread boss
Cooling water flow	0.5 gpm min. @ 35 °C max. input temperature

4.0 Ordering Information

GAE Part Number	Description	ASTeX P/N
911297-1	Magnetron Assembly, 1.8kW, without interlock harness	C13733-1
911297-2	Magnetron Assembly, 3kW, without interlock harness	C13733-2
911297-3	Magnetron Assembly, 1.8kW, with interlock harness	C13824-1
911297-4	Magnetron Assembly, 3kW, with interlock harness	C13824-2

5.0 Outline Drawing

