



# NATIONAL

## MH3.0W-S1

June 2007

The MH3.0W-S1 is a water-cooled microwave head assembly capable of delivering 3.0kW of adjustable microwave energy at 2.45GHz. The unit is fabricated from a stainless steel enclosure which houses the magnetron, launching assembly, filament transformer and electronic circuitry. The MH3.0W-S1 was designed to work with the SM1150D/T<sup>1</sup> switch-mode power supply and is connected to the head assembly with a 3-meter cable.

The microwave system is sold as individual components. A typical system consists of the following parts.

<i>MH3.0W-S1</i>	<i>Microwave Head</i>
<i>SM1150D/T</i>	<i>Power Supply</i>
<i>MHC/1150D/T<sup>2</sup></i>	<i>Cable Set.</i>

Additional waveguide components such as isolators, tuners, and directional couplers are also available through Richardson Electronics.

The MH3.0W-S1 has been specifically designed for continuous operation in industrial process applications. Some of these processes include plasma generation, rubber vulcanization, chemical processing, medical waste sterilization and food processing. The SM1150D/T power supply provides precise control of the generators output power and continuously monitors critical operating parameters. The power supply can be operated from either front panel controls or by remote interfacing. The system has been designed so that the microwave generator can be remotely installed with respect to the power supply. This separation allows greater system flexibility and simplifies both installation and maintenance.

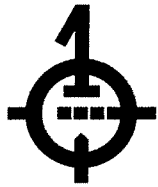
### GENERATOR SPECIFICATIONS:

Frequency:	2450 MHz $\pm$ 10 MHz
Rated Output:	3000 W
Output Connection:	CPR340 flange (WG9A, R26)
Weight:	20 LBS
Cooling:	1.5 LPM (minimum) at 25° C (minimum) to 3.0 LPM (maximum) at 58° C
Water Connection:	3/8" SwageLock compression fitting
Dimensions:	15.4" (392) x 5.9" (150) x 8.6" (217)
Magnetron Tube:	NL10230

<sup>1</sup> The SM1050D uses 3 x 208 volt electrical mains while the SM1050T uses 3 x 400 volt electrical mains.

<sup>2</sup> The MHC/1050D cable assembly mates with the SM1050D power supply. The MHC/1050T cable assembly mates with the SM1050T power supply.

90462305



# NATIONAL

## MH3.0W-S1

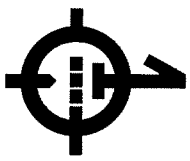
### SM1150D/T SPECIFICATIONS:

<b>ELECTRICAL:</b>	<b>SM1150D</b>	<b>SM1150T</b>
Input voltage (nominal):	3 x 208 Vac	3 x 400 Vac
Absolute Max Input Voltage:	250 Vac	450 Vac
Absolute Min Input voltage:	190Vac	360 Vac
Line Frequency:	50/60 Hz	50/60 Hz
Intake Current	3 x 16 A/phase max	3 x 10 A/phase max
Transient Over-voltage:	over-voltage category II according IEC664	
Output Power:	4800W	
Output Current (@35 °C):	1000mA @ 5300V	
Output Ripple:	5% max (voltage)	
Suggested Magnetron Type:	NL10230	
Filament preheating Delay:	10 sec	
Suggested filament Transformer:	FIL100S	
Remote Control (enable):	8-30 V dc common to ground	
Measuring Output Current Signal:	1V=100mA (Z=250Ω)	
<b>DIMENSIONS:</b>		
Front Panel Dimensions:	482 mm x 133 mm	
Rack Total Width:	450 mm	
Rack Total Height:	130mm	
Depth of Standard Board		
To Install SMx45:	600mm (suggested)	
Weight:	17.3 kg	

### RECOMMENDED SYSTEM COMPONENTS (OPTIONAL):

<b>Part Number</b>	<b>Description</b>
2722-162-11171	3.0 kW isolator with water load
R451570	Measuring Diode (for reflected power measurements on monitor of isolator)
DC/DC-Amp	dc amplifier for reflected power
WR340TUNERA	6.0 kW tuner
WR340DDCN60*	Dual directional coupler with 60dB forward and reflected coupling. N-Type connector *different coupling factors are available
WR340DDCB3.0	Dual directional coupler with integral galvanometers
HI-1501	Microwave leakage detector. Three ranges offer measurements from 0.1 to 100mW/cm <sup>2</sup>

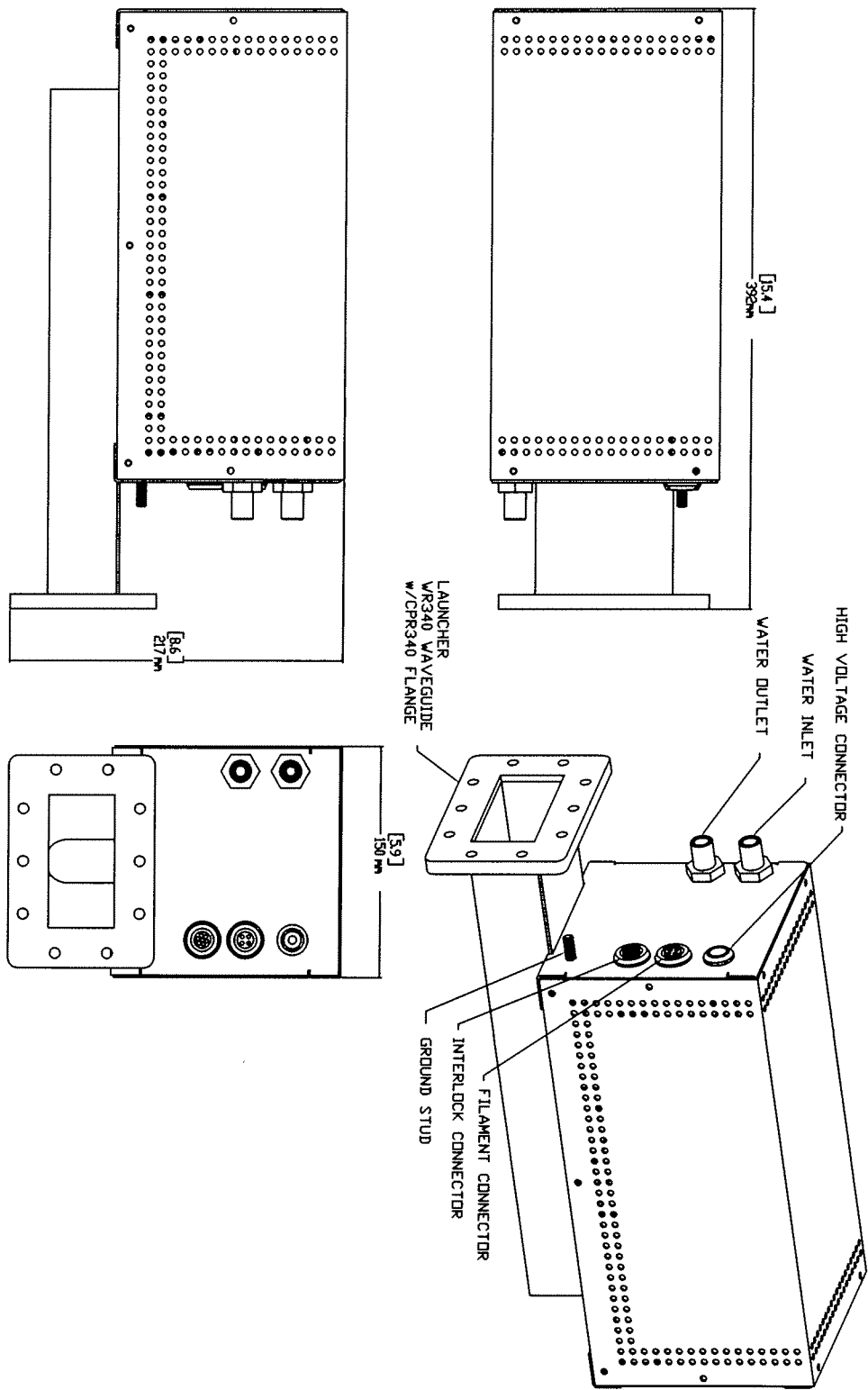
90462305



# NATIONAL

# MH3.0W-S1

## MH3.0W-S1 GENERATOR DRAWING



8/19/99

NATIONAL ELECTRONICS • A Division of Richardson Electronics, Ltd. • LaFox, IL 60147 (630) 208-2300

90462306