



**PROPRIETARY AND CONFIDENTIAL**  
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± N/A ANGULAR: MACH ± BEND ± .5° ONE PLACE DECIMAL ± .1 TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 SURFACE FINISH 63 R.M.S.		FINISH:				DO NOT SCALE DRAWING	REVISION	
DESIGN/ENG. CHK'D APPV'D MFG Q.A.		NAME				SIGNATURE	DATE	USED ON
							TITLE: <b>6-EMITTER, 10-POCKET,          CUSTOM/SPECIAL          MOTORIZED HYDRA(TM) e-GUN(TM),          OUTLINE DRAWING</b>	
							DWG NO.	A3
					WEIGHT: ~283 lbs.	SCALE: 1:8	SHEET 1 OF 2	

- \*Power Output: (10 kW/10 kV, 0 to 1.0 A) or (15 kW/10 kV, 0 to 1.5 A)
- \*Crucible volume: (10 kW, 10/15 cc) or (15 kW, 40 cc)
- \*Filament: 12 VAC 60 A
- \*270 degree electron beam deflection, enclosed emitter preventing material particulates from entering the emitter assembly
- \*Evaporation rates for Al @ 10 kW: 1 gm/min. at 10 kW, 3.6 microns at 25 cm
- \*Evaporation rates for Al @ 15 kW: 1.5 gm/min. at 15 kW, 50,000 angstrom per min.
- \*Beam spot size: approximately .25" circular
- \*Bakeout Temperature: 230 degrees C, (446 degrees F)
- \*H2O, 30 gpm (filtered) at 70 psi (each crucible has its own water supply, common return)-(3 gpm/crucible)
- \*Pressure differential: 50 psi minimum
- \*X and Y Sweep: Hyper-Unimelt sweep
- \*Compact crucible design (closest pocket-to-pocket) spacing in the industry provided by Thermionic's patented magnetic design.
- \*Available in "static" or "dynamic" designs
- \*Co-evaporation of up to six (6) different materials simultaneously
- \*Metal-sealed, fully UHV compatible, measured base pressure:  $2 \times 10^{-11}$  Torr.
- \*Four (4) different combinations of six (6) crucibles or up to forty-two (42) permutations of two-material combinations are available for co-deposition in a single vacuum pumpdown.
- \*Hydra configuration eliminates adjacent source interactions without complex beam directions and bulky field shunting components
- \*Each source crucible is independently water cooled to prevent steam buildup
- \*Each source crucible has separate sweep coils, insuring the independent operational integrity of each source, eliminating cross talk inference from any adjacent source
- \*Eliminates the need for back-to-back e-Gun sources
- \*Emitter baseplates are H2O cooled
- \*Removable crucible "chimney" insert to aid in cleaning and source-to-source contamination
- \*Ideal "plume" crucible overlaps projection, ideal for co-evaporation of materials

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						<b>thermionics laboratory inc.</b> <b>Hayward Ca. 94545</b>	
DESIGN/ENG.	NAME	SIGNATURE	DATE	USED ON	NEXT ASSY.	<b>6-EMITTER, 10-POCKET,          CUSTOM/SPECIAL          MOTORIZED HYDRA(TM) e-GUN(TM),          OUTLINE DRAWING</b>	
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO.	A3
				WEIGHT:	SCALE:1:8		SHEET 2 OF 2