



- **ELECTRON BEAM HIGH VOLTAGE POWER SUPPLY**
- **100KV OUTPUT CAPABILITY**
- **LOW/HIGH 10 $\mu$ A/100 $\mu$ A OUTPUT CURRENT SELECTION**
- **LESS THAN 75 mV OF RIPPLE**
- **EXCELLENT REGULATION AND STABILITY PERFORMANCE**
- **OIL FREE/SOLID ENCAPSULATED DESIGN**

The Bertan VS100 high voltage power supply was specifically designed for precision electron beam applications like semiconductor nano-lithography, micro-optics and development mask work. It's ultra low ripple and excellent stability specifications make it ideal for use in these demanding applications. A switch selectable low and high output current range is featured.

The solid encapsulated high voltage section eliminates any user maintenance issues, while isolating the components from environmental variables. The unit is fully overload, arc and short circuit protected. Remote control programming and monitoring capability is provided. A second high voltage monitor, separate from the control electronics is provided. This allows accurate passive measurement of the high voltage output.

### TYPICAL APPLICATIONS

Micro-Optics  
Semiconductor lithography  
Development mask work

### SPECIFICATIONS

#### Input Voltage:

220Vac,  $\pm 10\%$ , single phase 50/60 Hertz

#### Output Voltage:

0 to 100kV, negative polarity. Externally switch selectable to 105kV,  $\pm 500$  volts

#### Output Current:

0-10 $\mu$ A, low range  
0-100 $\mu$ A, high range  
Switch selectable

#### Line Regulation:

$\pm 0.001\%$  of rated voltage over specified input voltage range

#### Load Regulation:

$\leq 20V$  for a current change of 25 $\mu$ A to 60 $\mu$ A and 60 $\mu$ A to 25 $\mu$ A

#### Ripple:

$\leq 75mV$  peak to peak

#### Partial High Voltage Discharge:

less than 200mV

#### Stability:

0.001% per 8 hours after a 6 hour warm up, for a temperature of 20°C  $\pm 0.2^\circ$ C

#### Temperature Coefficient:

50ppm per degree C over a 10°C to 40°C range

#### Environmental:

Operating Temperature: 0 to 40 degrees C  
Storage Temperature: -40 to 85 degrees C  
Humidity: 10 to 90% RH, non condensing

#### Cooling:

Forced Air-control chassis;  
Convection Cooled- high voltage chassis

#### Front Panel:

Power ON/OFF switch  
HV ON/OFF switch  
HV ON/OFF indicator  
Analog output voltage meter

#### Dimensions:

Control Chassis: 5.25" H X 19" W X 15.3" D  
(13.3cm X 48.3cm X 38.4cm)  
HV Chassis: 10.25" H X 19" W X 27" D  
(26.7cm X 48.3cm X 55.9 cm)

#### Weight:

Control Chassis: 20 pounds (9kg)  
HV Chassis: 116 pounds (50kg)

#### Interface Connector:

19 pin Burndy GOB1619SNE  
(mating connector provided)

#### AC Input Connector:

3 pin IEC320 input socket

#### Output HV Connector:

Claymount 2050-073

#### Output HV Cable:

Detachable at rear panel, cable not provided.

#### Regulatory Approvals:

Compliant to 2004/108/EC, The EMC Directive and 2006/95/EC, The Low Voltage Directive.

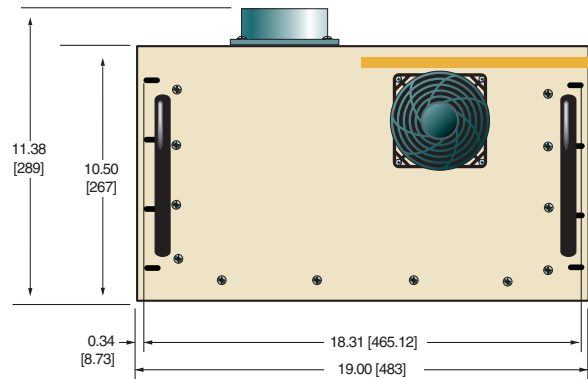
### REMOTE INTERFACE CONNECTOR

PIN	SIGNAL	SIGNAL PARAMETERS
A	-5V Reference	-5.0 volts @ 10mA output
B	Voltage Programming	0 to -5v = 0 to 100% rated output, Z <sub>in</sub> = 100KΩ
C	Spare	n/c
D	Spare	n/c
E	Monitor Common	Ground
F	HV Status	TTL High = HV OFF, TTL Low = HV ON
G	+5V	5 volts @ 250mA output
H	Interlock	Ground or TTL low to enable interlock
J	Program Common	Ground
K	Spare	n/c
L	Spare	n/c
M	Spare	n/c
N	Spare	n/c
P	Voltage Monitor	0 to -5V = 0 to 100% rated output, Z <sub>out</sub> = 10KΩ
R	Current Monitor	0 to -5V = 0 to 100% rated output, Z <sub>out</sub> = 10KΩ
S	Spare	n/c
T	Spare	n/c
U	Spare	n/c
V	Spare	n/c

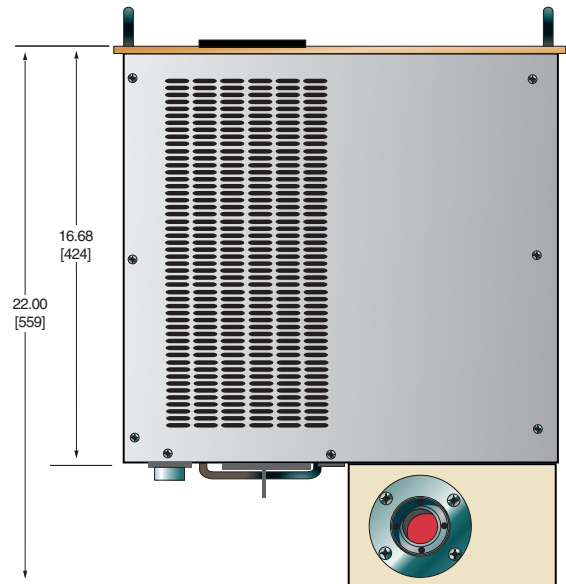
DIMENSIONS: in.[mm]

**HV CHASSIS**

**FRONT VIEW**

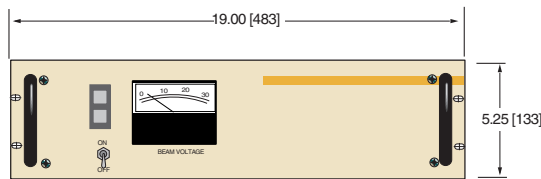


**TOP VIEW**

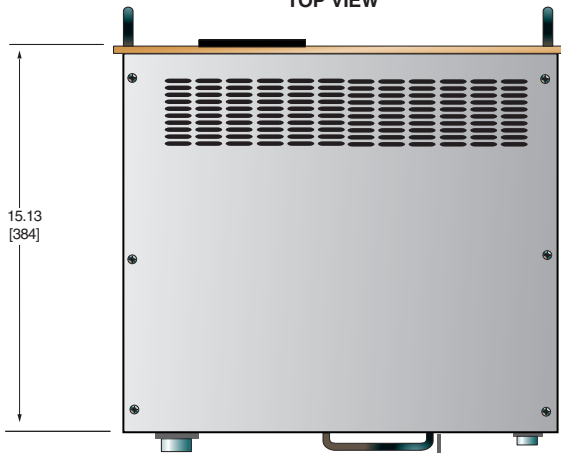


**CONTROL CHASSIS**

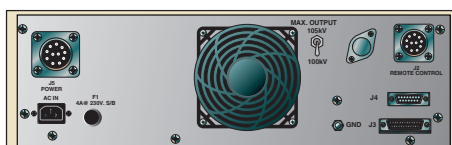
**FRONT VIEW**



**TOP VIEW**



**BACK VIEW**



**BACK VIEW**

