USHIO Applying Light to Life®

SMARTARC™ HBX 76

For Short-Arc Mercury & Xenon Lamps

Ushio's SmartArc™ electronic power supply with digital power management and microprocessor controls is a compact and "intelligent" solution for operating DC operated arc discharge lamps.

FEATURES & BENEFITS

- Operates Short Arc Mercury and Xenon DC Lamps in Power Ranges Between 50W, 75W and 100W
- Output Power is Selectable by DIL 16 Step Switch Set-Up
- Power Factor Corrected Line Input, Built-In EMI-Filter Voltage Range 90VAC to 264VAC. Meets CE & FCC Part "A"
- Built-In Cooling Fan — No External Cooling Needed
- Newly Designed Anti-Aging and Arc Control Circuit for High Optical Reliability Over Lamp Lifetime
- Digital Power Management and Micro-Processor Controlled With High Output Stability Over Life
- Output is Short Circuit Protected and Arc to Ground Protected
- 90°C Thermal Shut-Off Feature
- Auto Shut-Off Feature at End of Lamp Life or Lamp Failure
- Auxiliary Regulated 12V/0.2A Output For Fan Drive – Available When the Lamp is in Operation
- Available With "On-Board" Ignitor as HBX 76 or "Off-Board" Ignitor as HBX 76i

HBX 76 - Item #5001474

All values are valid at 25° ±5°C, unless otherwise noted.

INPUT DATA

Nominal Operation	Nominal	Tolerance
Input Voltage AC (V)	100 – 240	90 – 264
Input Voltage DC (V)	100 – 300	90 – 340
System Wattage (W)	123	60 – 120*
Input Current (A)	—	0.6 – 1.4*
Line Frequency (Hz)	50/60	47 – 63
Power Factor (1)	1.0	0.93 – 1.0

*Depends on lamp selected. Presettable.

LAMP OUTPUT DATA

Ignition	Nominal	Tolerance	Remarks
Ignition Voltage (kV peak)	±14	±12 – ±16	Load Capacity <20pF
Ignition Time (sec.)	1	0.9 – 1.1	
Automatic Restart Counter (1)	5	—	Attempts
Nominal Operation	**Nominal**	**Tolerance**	
Lamp Voltage (V)	12.8 – 34	±5%*	
Lamp Wattage (W)	50, 75, 100*	Selectable 50, 75, 100	
Lamp Current (A)	—	I Max = 7.5*	
Cut-Off Voltage, End-Life (V)	43	±2	
Open Circuit Voltage (V)	45	45 – 48	

*Depends on lamp selected. Presettable.

LIFETIME DATA

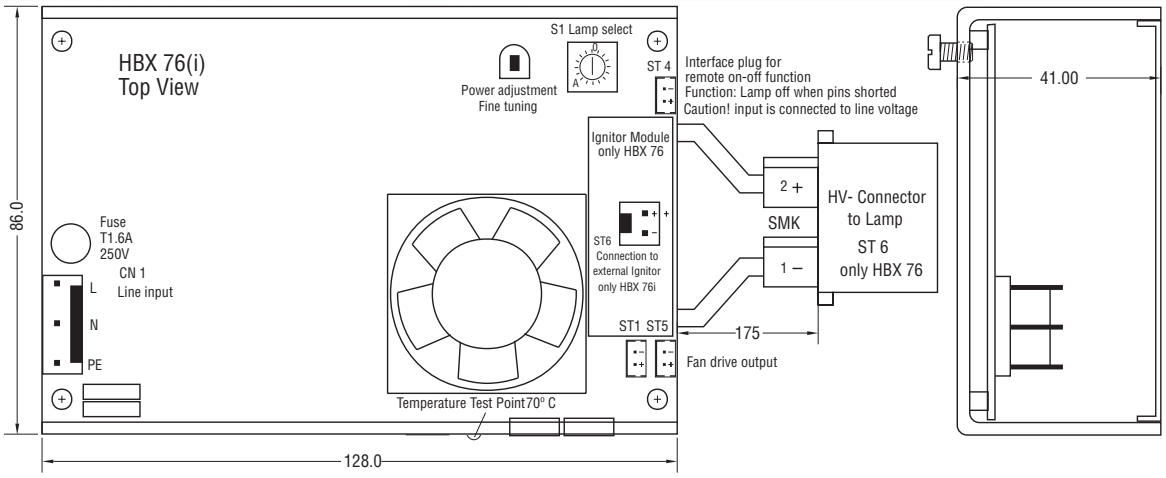
	Symbol	Nominal	Tolerance	Remarks
Ballast Lifetime (h)	t_{Life}	25,000	>25,000	acc. to MIL HDBK for nominal operation

All values for U_u = 230 V_{rms}. Temperature at test point = 70°C

MISCELLANEOUS

Nominal Operation	Nominal	Tolerance
Efficiency (1)	0.8	0.75 – 0.8
Ambient Temperature (°C)	+25	+10 – +50
Max. Temperature at Test Point (°C)	+70	Case surface near output at U-profile
Switch Off Temperature (°C)	+90	+85 – +95

TOP & BOTTOM VIEW



Nominal Dimensions

Length (mm) 128
Width (mm) 86
Height (mm) 41
Weight (Kg / lb) ..... 0.41 / 1.11

All dimensions are in millimeters.

Plugs and Cables	Manufacturer / Type	Remarks / Header / Contacts
Ballast Mains Plug	CN1 AMP 643495-2 Wiring with AWG 18, 105°C, 900V (recommended)	AMP 770 849-5/770522-1
Ballast Interface Plug	ST4 JST/B2B-EH-A	JST EHR-2/SEH-001T-P0.6
Fan Connection Plug	ST 1/ST5, JST/B2B-EH-A For 12V fan 200mA	JST EHR-2/SEH-001T-P0.6
Connection Ballast-Ignitor	ST 6 AMP 640445-2 (HBX 76i)	AMP 770 849-2/770522-1
Ignitor HV-plug to Lamp Lamp Cable	Housing: SMK/101CCT-091-01R Tecnosil/AWG20 UL Style 3239, 20kVDC, 150°C	

SPECIFICATIONS

PIN ASSIGNMENT AND FUSE

Connector	Signal	Description
Line Input ST101		
PIN 3	AC in -L-	AC wide range input voltage 90V-264VAC
PIN 2	AC in -N-	DC wide range input voltage 90V-340VDC
PIN 1	PE	Safety Ground
ST1 & ST5 Fan Drive JST B2B-EHA		
PIN 1 +	Fan + 12V	
PIN 2 -	Fan - (0V)	Fan drive output voltage is only availablewhen lamp is lit
	200mA (both outputs)	
Lamp Output Terminal ST6		Connection to external ignitor HBX76i or
PIN 1 -	Minus lamp voltage	High voltage output to lamp HBX76
PIN 2 +	Plus and Power	SMK standard wiring length 175mm
Fuse	Built-in and fixed T 1.6A 250V	

COOLING RECOMMENDATIONS:

The unit has two 12V terminals for driving one or two fans. One is intended for the power supply and one for the lamp. By default, one is connected to the built-in power supply cooling fan. The combined maximum total output current for both outputs is 200mA. This leaves 135mA for an external fan. Please note that this output voltage is only available when the lamp is in operation. Temperature of the power supply should not exceed 70°C. Temperature overload is protected by an internal temperature switch at 90°C.

ENVIRONMENTAL REQUIREMENTS:

Storage Temperature Range.....-20°C – +50°C
Operating Temperature Range.....0° C – 60° C
Humidity Range .....20% – 95% non-condensing
Altitude (Operating).....0 ft. to 10,000 ft.

STANDARDS:

Safety and Performance
CSA C22.2 No.60950 UL60950,UL508
CB-Test and UL must be completed with the final product

CAUTION:

SAFETY - Due to hot restrike capabilities of the power supply, the output voltage to the lamp can reach 15,000 volts. Ensure a minimum 15mm (>1/2") clearance between all lamp terminals to the power supply. All primary wiring must meet all local national safety regulations.

USHIO

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Form No. S-SMARTARC-HBX76/0924