HORTURION PS 600 W / 750 W / 1000 W

Power supplies for BLV HORTURION HPS and MH lamps

Application **Efficient grow lighting for professional greenhouses.**

Description

- High quality power supply for use with HPS and MH greenhouse luminaires and lamps
- Balanced weight
- Highly efficient in combination with BLV HORTURION HPS and MH lamps
- Developed, procured and produced in Germany
- Detection of overvoltage and undervoltage
- Lamp detection
- Board temperature measurement

1. General Specifications (all versions)

Dimensions and weight (open frame)

Length l	181 mm ± 1 mm
Width w	151 mm ± 1 mm
Height h	58 mm ± 1 mm
Weight W	0,9 kg ± 0,1 kg

Dimensions are compatible with most standard HPS and MH greenhouse luminaires.

Operating data

(nominal operation)	**Minimum**	**Maximum**	**Nominal**
Efficiency η	94 %	97 %	96,5 %
Ambient temperature T_A	0 °C	+35 °C	+25 °C

LED status indication

Green	Normal operation.
Red and green	Boot up and lamp ignition.
Red	Error state.

Note: Status indications and internal data are readable with a separate BLV HORTURION Read Out Device.

2. Specifications PS 600 W 400 V

Power supply designed for the BLV HORTURION HPS and MH 600W DE EL lamps.

Designation	HORTURION PS 600 W 400 V
Part numbers	104098 (single box packaging)
	109857 (bulk packaging)

Input data

(nominal operation)	**Minimum**	**Maximum**	**Nominal**	**Remarks**
Input voltage V_{IN}	360 V_{AC}	440 V_{AC}	400 V_{AC}	
Frequency F	47,5 Hz	63 Hz	50 Hz	
Input current I_{IN}		2 A_{AC}		
Power factor	0,97		0,99	At nominal lamp power
System power P_{IN}	–	640 W	630 W	At nominal lamp power
THD_I			4,2 %	At nominal lamp power

Lamp output data

(nominal operation)	Minimum	Maximum	Nominal	Remarks
Output voltage V_L	–	275 V_{AC}	210 V_{AC}	
Lamp switch-off V_{off}			285 V_{AC}	
Output current I_L	2.3 A_{AC}	5,5 A_{AC}	2,9 A_{AC}	
Output power P_L	–	635 W	610 W	At nominal input voltages
Ignition Voltage V_{Ign}	3,0 kV	3,4 kV	3,25 kV	Resonant ignition
Lamp cable length l_c	–	1 m	0,3 m	120 pF/m max.

3. Specifications PS 750 W 400 V

Power supply designed for the BLV HORTURION HPS and MH 750W DE EL lamps.

Designation HORTURION PS 750 W 400 V

Part number 104099 (single box packaging)
109858 (bulk packaging)

Input data

(nominal operation)	Minimum	Maximum	Nominal	Remarks
Input voltage V_{IN}	360 V_{AC}	440 V_{AC}	400 V_{AC}	
Frequency F	47,5 Hz	63 Hz	50 Hz	
Input current I_{IN}		2,5 A_{AC}		
Power factor	0,97		0,99	At nominal lamp power
System power P_{IN}	–	815 W	790 W	At nominal lamp power
THD_I			4,2 %	At nominal lamp power

Lamp output data

(nominal operation)	Minimum	Maximum	Nominal	Remarks
Output voltage V_L	–	315 V_{AC}	250 V_{AC}	
Lamp switch-off V_{off}			330 V_{AC}	
Output current I_L	2,8 A_{AC}	5,5 A_{AC}	3,1 A_{AC}	
Output power P_L	–	785 W	760 W	At nominal input voltages
Ignition Voltage V_{Ign}	3,0 kV	3,4 kV	3,25 kV	Resonant ignition
Lamp cable length l_c	–	1 m	0,3 m	120 pF/m max.

4. Specifications PS 1000 W 400 V

Power supply designed for the BLV HORTURION HPS and MH 1000W DE EL lamps.

Designation	HORTURION PS 1000 W 400 V
Part number	108258 (single box packaging) 108866 (bulk packaging)

Input data

(nominal operation)	**Minimum**	**Maximum**	**Nominal**	**Remarks**
Input voltage V_{IN}	360 V_{AC}	440 V_{AC}	400 V_{AC}	
Frequency F	47,5 Hz	63 Hz	50 Hz	
Input current I_{IN}		3 A_{AC}		
Power factor	0,97		0,99	At nominal lamp power
System power P_{IN}	–	1040 W	1035 W	At nominal lamp power
THD_I			4,2 %	At nominal lamp power

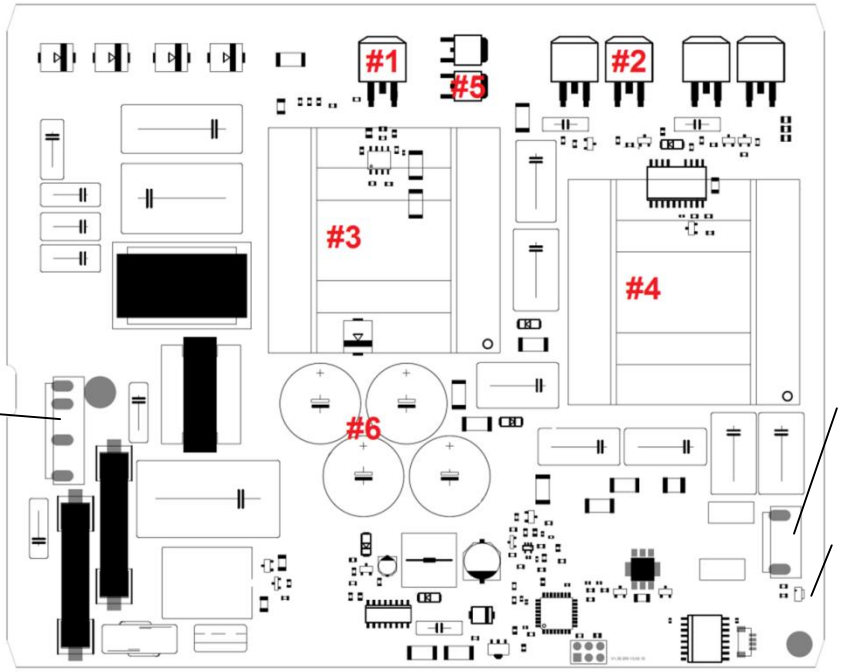
Lamp output data

(nominal operation)	**Minimum**	**Maximum**	**Nominal**	**Remarks**
Output voltage V_L	–	315 V_{AC}	250 V_{AC}	
Lamp switch-off V_{off}			330 V_{AC}	
Output current I_L	3,3 A_{AC}	5,5 A_{AC}	4 A_{AC}	
Output power P_L	–	1035 W	1000 W	At nominal input voltages
Ignition Voltage V_{Ign}	3,0 kV	3,4 kV	3,25 kV	Resonant ignition
Lamp cable length l_c	–	1 m	0,3 m	120 pF/m max.

5. Lifetime expectancy and failure rate

Lifetime expectancy	50,000 hours at 35 °C ambient temperature of the HORTURION HPS TL luminaire when operated under normal conditions (e.g. perfect grid, no grid pollution, no distortion, nominal supply voltage/frequency, etc). Values may differ if the PS is operated in 3rd party luminaires.
Failure rate	<0,1 % based on 2,500 burning hours per year (average) and 2 switching cycles per day.

6. Thermal behaviour



POWER IN
- EARTH PROTECTION
- EARTH PROTECTION
. empty
- L1
. empty
-L2

LAMP OUTPUT
- HIGH VOLTAGE
. empty
. empty
- NEUTRAL

LED indicator

Temperature spots and temperature not to be exceeded:

#1 PFC-FET	<100 °C
#2 HB-FET	<100 °C
#3 PFC coil (wire)	<100 °C
#4 Lamp coil (wire)	<100 °C
#5 PFC- Diode	<120 °C
#6 Capacitor	<85 °C

Important note: Higher temperatures will significantly decrease the lifetime!

7. Connector definition

Grid: Neltron 2114H-06; 4 Contacts (L, empty, L, empty, 2xPE)
Lamp: Neltron 2114H-04; 2 Contacts (HV, empty, empty, Neutral)
Alternatively JST VH and VH-B Types can be used [B4P(6-2.4) and B3P4]

8. General remarks for the installation

BLV HORTURION power supplies installed in BLV HORTURION luminaires or in luminaires of other make shall not be replaced onsite.
The following installation remarks are mainly applicable for qualified customers who install the power supply in 3rd party luminaires.

- Make sure that the luminaire is separated from electrical power. Safety first.
- The power supply should be installed in an ESD safe environment with ESD safe tools. The power supply must never be exposed to any ESD dangers.
- Avoid contact with the circuit and the components on the power supply. To handle the power supply, hold it at the housing.
- After inserting the power supply in the gear compartment of the luminaire, check the correct orientation and make sure that the connectors are inserted properly and locked in place with an audible click.
- Make sure that the gasket of the gear compartment is not damaged and is providing the required IP protection when the compartment is closed and locked.

For further details please refer to the HORTURION PS 600 W / 750 W / 1000 W installation manual.

9. Inrush current and number of power supplies (luminaires) behind MCBs

The rating of the circuit breakers (MCBs) and fuses is mainly determined by the nominal power of the drivers. The fuses or MCBs should be de-rated in respect to the information of the manufacturer of these devices. Cable length and cable cross-section must be taken in concern. The table below must be seen as a guideline.

Maximum number of BLV HORTURION power supplies behind a three phase circuit breaker

Fuse Type	**B10**	**B13**	**B16**	**B20**	**B25**	**B32**
PS 1000 W 400 V	1x3(1,6)	2x3(2,6)	2x3(2,6)	3x3(3,2)	4x3(4,1)	5x3(5,2)
PS 750 W 400 V	1x3(1,6)	2x3(2,6)	2x3(2,6)	3x3(3,2)	4x3(4,1)	5x3(5,2)
PS 600 W 400 V	1x3(1,6)	2x3(2,6)	2x3(2,6)	3x3(3,2)	4x3(4,1)	5x3(5,2)
Fuse Type	**C10**	**C13**	**C16**	**C20**	**C25**	**C32**
PS 1000 W 400 V	2x3(2)	2x3(2,6)	3x3(3,2)	4x3(4)	5x3(5)	6x3(6,5)
PS 750 W 400 V	2x3(2,8)	3x3(3,2)	4x3(4,5)	5x3(5,6)	6x3(7)	8x3(8,9)
PS 600 W 400 V	2x3(2,8)	3x3(3,2)	4x3(4,5)	5x3(5,6)	6x3(7)	8x3(8,9)
Fuse Type	**K10**	**K13**	**K16**	**K20**	**K25**	**K32**
PS 1000 W 400 V	2x3(2)	2x3(2,6)	3x3(3,2)	4x3(4)	5x3(5)	6x3(6,5)
PS 750 W 400 V	3x3(3,1)	4x3(4)	4x3(4,9)	6x3(6,2)	7x3(7,7)	9x3(9,9)
PS 600 W 400 V	3x3(3,8)	5x3(5)	6x3(6,2)	7x3(7,7)	9x3(9,6)	12x3(12,3)

The Inrush current characteristic of the BLV HORTURION PS can be described as follows:
Inrush current nominal peak value: 19 A
Inrush current half-value time: 3 ms