

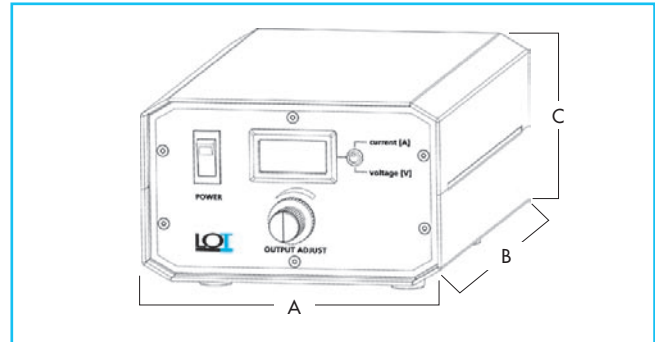
Power Supplies for Halogen Lamps



Most Halogen lamps are designed for a set voltage, the so-called rated or nominal voltage. All lamp data such as power consumption, flux, lamp life etc. is measured at rated voltage, i.e. rated voltage is the reference value.

Only a minority of Halogen lamps (such as our calibrated types) are designed for operation with constant current.

As a result of the manufacturing process, the filament wire resistance and therefore the power consumption of the individual lamps varies somewhat.



	A [mm]	B [mm]	C [mm]
LSN111	170	260	115
LSN4012	222	398	88
LSN3218	222	398	88

Soft-Start

When the halogen lamp is cold - before start - the resistance of the filament is up to 20 times lower than at operating temperature. Accordingly the lamp is run with too much current during the start-up phase (if the power supply can supply it). So the operating frequency has an effect on lamp life. You can limit this negative effect of inrush current, by operating the lamp with a current ramp. The current will be brought slowly to its operating level without exceeding it, so that the lamp does not reach overpower level. This operating mode is called „Soft-Start“ or current ramp. If your power supply does not have this feature, you should gradually increase the current to its operating level, when starting the lamp.

Constant Voltage Operation

In constant voltage operation the ohmic resistance of the filament increases slightly (diameter of filament decreases due to tungsten vaporization and recrystallization effects inside the wire). This reduces the wattage input of the lamp ($\sim U^2/R$) and also the luminous flux. The effect is measurable in the range of a few per cent.

Constant Current Operation

The situation is reversed if „voltage lamps“ are operated at constant current. The higher resistance increases the wattage ($\sim I^2 \cdot R$) and the lamp is a little bit brighter. But the consequence also is higher filament temperature and therefore shorter lamp life.

For calibrated Halogen lamps the provided irradiance data are measured at a rated lamp current! It is therefore important (in order to maintain calibration) to run these lamps with a constant current power supply. These lamps are designed for constant current operation.

Specifications

	LSN111	LSN4012	LSN3218
	Power supply for halogen lamps up to 150 W	Power supply for halogen lamps up to 200 W	Power supply for halogen lamps up to 250 W
Input Ratings			
Voltage:	100 – 240 VAC ± 10 % 50 – 60 Hz	230 VAC +10, -15 % 47 – 63 Hz	230 VAC +10, -15 % 47 – 63 Hz
Line regulation:	10 ⁻³ typ.		
Current max.	150 VA max.	550 VA, 340 W	660 VA, 460 W
Power factor:	≥ 0,7	>0,7	>0,7
Output Ratings			
Power:	150 W max.	240 W max.	320 W max.
Current:	0,5 – 10 A ± 0,1 A	0 – 12 A	0 – 18 A
Voltage:	17,0 V DC, max.	0 – 40 V DC	0 – 32 V DC
Current ripple:	0,5 % RMS	25 mA eff.	50 mA eff.
Stability:	≤ 0,3 % typ. @8h		
Meter accuracy:	± 3 %	1 %	1 %
Operating modes:	constant current	constant current or constant voltage	constant current or constant voltage
Current ramp:	yes	no	no

Ordering Information

LSN111	Power supply for Halogen lamps up to 150 W
LSN4012	Power supply for Halogen lamps up to 200 W (constant current or –voltage)
LSN3218	Power supply for Halogen lamps up to 250 W (constant current or –voltage)