

## Technical Information

No. FO 4713

Edition: 06/00 - subject to change

Substitutes: Edition 11/98

Status: valid

Mercury Short Arc Lamp  
for Microlithography

# HBO® 1003 W/PIL & /PI

## n Product description

The OSRAM HBO® 1003 W/PIL is a direct current mercury short arc i-line lamp designed for the manufacture of integrated circuits (microlithography). This lamp type emits a very high radiant intensity in the ultraviolet and visible wavelength range and is especially suited for use in ASML i-line equipment (PAS 5500/60B, /80B, /100, /100B). The HBO® 1003 W/PIL is also available as standard-version HBO® 1003 W/PI with an average 850h service life. Both types can be operated in constant power operation or pulse mode operation.

## n Technical data

Order reference	HBO® 1003	1003 W/PI
Rated lamp wattage (constant power operation)	W	max. 750
Rated lamp wattage (pulse mode operation)	W	700 / 1.000
Rated lamp voltage	V	27,1
Rated lamp current (=)	A	25,8
Ignition voltage (cold)	kV <sub>s</sub>	max. 20
Radiant power (wave length range 365 ± 2,5nm)	W	18,7
Radiant intensity (wave length range 365 ± 2,5nm)	mW/sr	2.400
Electrode gap e (cold)	mm	3
Lamp length (overall) l <sub>1</sub>	mm	max. 197
Lamp length l <sub>2</sub>	mm	167,5 / max. 169,5
Bulb diameter d	mm	29
LCL a	mm	85
Average service life	h	1.500 / 850
Base	β Cathode: SFc 15-6/25 β Anode: SFcX 14-6/25 with cooling fins	

## n Lamp operation

Maximum permissible base temperature	°C	200
Cooling	forced base cooling, cooling fins on anode	
Burning position	vertical, anode (+) underneath	

The HBO® 1003 W/PIL can either be operated on standard ballasts or on electronic power supplies (ECG).

## n Safety Instruction

Because their high luminous efficacy, the UV radiation which they emit and the high pressure within the lamp, HBO® lamps must be operated within enclosed, purpose-built housings. When a lamp breaks, mercury is released. Particular safety regulations must be paid attention (for details please request technical information no. FO 4574).

