

Technical Information

No. FO 4742

Edition: 01/03 - subject to change

Substitutes: Edition 06/02

Status: valid

Mercury Short Arc Lamp
for Microlithography

HBO[®] 1003 W/PIL

■ Product description

The OSRAM HBO[®] 1003 W/PIL is a long life (1500h) 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 designed and optimized for use in ASML i-line equipment (PAS 5500/45 B, /55B, /60B, /80B, /100, /100B, /SPRINT). The HBO[®] 1003 W/PIL is also available as standard-version (HBO 1003 W/PI) with an average 850h service life. It can be operated in constant power operation or pulse mode operation.

■ Technical data

Order reference	HBO [®]	1003 W/PIL
Rated lamp wattage (constant power operation)	W	max. 700
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 _s	max. 20
Radiant power (wave length range 365 ± 2,5nm)	W	18.7
Radiant intensity (wave length range 365 ± 2,5nm)	mW/sr	2,200
Electrode gap e (cold)	mm	3
Lamp length (overall) l ₁	mm	max. 195
Lamp length l ₂	mm	167.5
Bulb diameter d	mm	29
LCL a	mm	85
Guaranteed life	h	1500

Base

- Cathode: SFc 15-6/25ab with thread (M6)
- Anode: SFcX 14-6/25 with cooling fins

■ Lamp operation

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

■ Safety Instruction

Due to 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).

