

## HBO Microlithography Lamps for Other Systems



### Areas of application

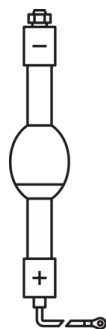
- Microlithography

### Product features and benefits

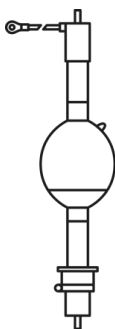
- High spectral intensity with peak irradiance at 365nm wavelength, making it ideal for microlithography
- Designed for long lasting performance
- Qualified with major microlithography equipment manufacturers
- Qualified with major microlithography equipment manufacturers



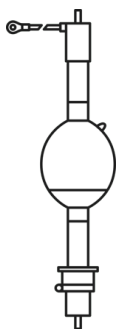
Product family datasheet



HBO 3500WMR



HBO 5000W/MF



HBO 5000W/S

# Product family datasheet

## Technical data

| Product description         | General Product Information |                              |              |              |
|-----------------------------|-----------------------------|------------------------------|--------------|--------------|
|                             | Product number (Americas)   | Product name (Americas)      | Family brand | Lamp type    |
| HBO 350 W/S                 | 69228                       | HBO 350W/68V/S 10/CS 1/SKU   | HBO          | DOUBLE ENDED |
| HBO 350 W <sup>1)</sup>     | 69226                       | HBO 350W/60V 10/CS 1/SKU     | HBO          | DOUBLE ENDED |
| HBO 5000 W/HK               | 69138                       | HBO 5000W/HK 4/CS 1/SKU      | HBO          |              |
| HBO 1000 W/D                | 69200                       | HBO 1000W/38V/D 1/CS 1/SKU   | HBO          |              |
| HBO 201 W/HS-D2             | 69168                       | HBO 201W/HS-D2 10/CS 1/SKU   | HBO          | DOUBLE ENDED |
| HBO 3500 W/HK               | 69137                       | HBO 3500W/HK 55V 1/CS 1/SKU  |              | DOUBLE ENDED |
| HBO 250 W/LS                | 69553                       | HBO 250W/LS 10/CS 1/SKU      | HBO          |              |
| HBO 500 W/A <sup>2)</sup>   | 69205                       | HBO 500W/60V/A 10/CS 1/SKU   | HBO          | DOUBLE ENDED |
| HBO 500 W/B <sup>2)</sup>   | 69206                       | HBO 500W/48.5V/B 10/CS 1/SKU | HBO          | DOUBLE ENDED |
| HBO 1000W/DHL               | 55003                       | HBO 1000W/DHL 1/CS 1/SKU     | HBO          |              |
| HBO 3500 W/MR               |                             |                              |              |              |
| HBO 5000 W/MF <sup>3)</sup> | 69133                       | HBO 5000W/MF 1/CS 1/SKU      | HBO          |              |
| HBO 5000 W/S <sup>3)</sup>  |                             |                              |              |              |

| Product description         | Global order reference | Electrical Data |                 | Photometric Data          |
|-----------------------------|------------------------|-----------------|-----------------|---------------------------|
|                             |                        | Nominal wattage | Nominal voltage | Light center length (LCL) |
| HBO 350 W/S                 | HBO 350 W/S            | 350 W           | 68 V            | 52.5 mm <sup>4)</sup>     |
| HBO 350 W <sup>1)</sup>     | HBO 350 W              | 350 W           | 67.5 V          | 45.0 mm <sup>4)</sup>     |
| HBO 5000 W/HK               | HBO 5000 W/HK          | 5000 W          | 70 V            | 152.5 mm <sup>4)</sup>    |
| HBO 1000 W/D                | HBO 1000 W/D           | 1000 W          | 37.7 V          | 89.5 mm <sup>4)</sup>     |
| HBO 201 W/HS-D2             | HBO 201 W/HS-D2        | 201 W           | 25 V            |                           |
| HBO 3500 W/HK               | HBO 3500 W/HK          | 3500 W          | 55 V            | 142.7 mm <sup>4)</sup>    |
| HBO 250 W/LS                | HBO 250 W/LS           | 250 W           | 39 V            | 62.0 mm <sup>4)</sup>     |
| HBO 500 W/A <sup>2)</sup>   | HBO 500 W/A            | 500 W           | 60 V            | 73.0 mm <sup>4)</sup>     |
| HBO 500 W/B <sup>2)</sup>   | HBO 500 W/B            | 500 W           | 48.5 V          | 78.5 mm <sup>4)</sup>     |
| HBO 1000W/DHL               | HBO 1000W/DHL          | 1000 W          | 45 V            |                           |
| HBO 3500 W/MR               | HBO 3500 W/MR          | 3500 W          | 62 V            |                           |
| HBO 5000 W/MF <sup>3)</sup> | HBO 5000 W/MF          | 5000 W          | 50 V            | 143.5 mm <sup>4)</sup>    |

Product family datasheet

|                            |                        | Electrical Data |                 | Photometric Data          |
|----------------------------|------------------------|-----------------|-----------------|---------------------------|
| Product description        | Global order reference | Nominal wattage | Nominal voltage | Light center length (LCL) |
| HBO 5000 W/S <sup>3)</sup> | HBO 5000 W/S           | 5000 W          | 50 V            | 143.5 mm <sup>4)</sup>    |

|                             | Physical Attributes & Dimensions | Operating Conditions |                          | Lifetime Data    |
|-----------------------------|----------------------------------|----------------------|--------------------------|------------------|
| Product description         | Length                           | Burning position     | Cooling                  | Nominal lifetime |
| HBO 350 W/S                 | 127.0 mm                         | Other <sup>5)</sup>  | Convection <sup>6)</sup> | 600 hr           |
| HBO 350 W <sup>1)</sup>     | 128.0 mm                         | Other <sup>5)</sup>  |                          | 400 hr           |
| HBO 5000 W/HK               | 355.0 mm                         | Other <sup>5)</sup>  | Forced <sup>7)</sup>     | 850 hr           |
| HBO 1000 W/D                | 240.0 mm                         | Other <sup>5)</sup>  | Convection               | 1000 hr          |
| HBO 201 W/HS-D2             | 150.0 mm                         | Other <sup>8)</sup>  |                          | 1000 hr          |
| HBO 3500 W/HK               | 280.0 mm                         | Other <sup>8)</sup>  |                          | 1000 hr          |
| HBO 250 W/LS                | 147.0 mm                         | Other <sup>5)</sup>  | Convection <sup>9)</sup> | 2500 hr          |
| HBO 500 W/A <sup>2)</sup>   | 190.0 mm                         | Other <sup>5)</sup>  |                          | 800 hr           |
| HBO 500 W/B <sup>2)</sup>   | 175.0 mm                         | Other <sup>5)</sup>  |                          | 800 hr           |
| HBO 1000W/DHL               | 206.0 mm                         | Other                |                          | 2250 hr          |
| HBO 3500 W/MR               | 290.0 mm                         | Other <sup>5)</sup>  |                          | 750 hr           |
| HBO 5000 W/MF <sup>3)</sup> | 360.0 mm                         | Other <sup>8)</sup>  | Forced <sup>7)</sup>     | 850 hr           |
| HBO 5000 W/S <sup>3)</sup>  | 360.0 mm                         | Other <sup>8)</sup>  | Forced <sup>7)</sup>     |                  |

|                         | Environmental & Regulatory Information<br>Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH) |                                                                             |                            |                        |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------|------------------------|
| Product description     | Primary article identifier                                                                                      | Declaration no. in SCIP database                                            | Candidate list substance 1 | CAS No. of substance 1 |
| HBO 350 W/S             | 4050300258041   4052899528192                                                                                   | 664a7846-47f2-4d61-8323-e72e69aa88b3   7d7b2d2e-a007-4743-bc1c-a0d10b59e864 | Lead                       | 7439-92-1              |
| HBO 350 W <sup>1)</sup> | 4050300351599                                                                                                   | 69139dd2-ff81-43c7-bcfa-b84bcd0b9cc1                                        | Lead                       | 7439-92-1              |
| HBO 5000 W/HK           | 4050300897585                                                                                                   | db52bb49-e4f0-495f-9c4a-2e113c01961f                                        | Lead                       | 7439-92-1              |
| HBO 1000 W/D            | 4050300288857   4062172370745                                                                                   | a7ed535d-b58b-40ea-8c22-64880ddaa6bb   4e65a63f-77e1-4fba-a7be-6830a43f935b | Lead                       | 7439-92-1              |
| HBO 201 W/HS-D2         | 4050300591940                                                                                                   | 0e66b0e9-1432-4003-8cc4-4d3a9d357685                                        | Lead                       | 7439-92-1              |
| HBO 3500 W/HK           | 4050300628349                                                                                                   | 43786f93-bbf9-4419-bc65-ce101b279063                                        | Lead                       | 7439-92-1              |

## Product family datasheet

| Environmental & Regulatory Information<br>Information according Art. 33 of EU Regulation (EC) 1907/2006 (REACH) |                                               |                                                                             |                            |                        |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------|----------------------------|------------------------|
| Product description                                                                                             | Primary article identifier                    | Declaration no. in SCIP database                                            | Candidate list substance 1 | CAS No. of substance 1 |
| HBO 250 W/LS                                                                                                    | 4052899514843   4008321336668                 | 872b1190-ab05-48f3-8283-61ef79b983c3   c2f27551-e9f2-44a8-9229-f4eeb5f6fb66 | Lead                       | 7439-92-1              |
| HBO 500 W/A <sup>2)</sup>                                                                                       | 4050300021089                                 | 454e0682-41e1-4c7d-a6fb-66d0753e0edc                                        | Lead                       | 7439-92-1              |
| HBO 500 W/B <sup>2)</sup>                                                                                       | 4050300275819                                 | 5f991f9f-8f20-4d97-8224-80639ee6776f                                        | Lead                       | 7439-92-1              |
| HBO 1000W/DHL                                                                                                   | 4008321673145                                 | 35e19ed5-53bd-45ba-8079-3737c9f2fc21                                        | Lead                       | 7439-92-1              |
| HBO 3500 W/MR                                                                                                   | 4050300628301                                 | 17abf204-4183-4567-b724-a13eff07fd7a                                        | Lead                       | 7439-92-1              |
| HBO 5000 W/MF <sup>3)</sup>                                                                                     | 4050300772264                                 | 026d4f20-6678-4452-8959-076527d7602a                                        | Lead                       | 7439-92-1              |
| HBO 5000 W/S <sup>3)</sup>                                                                                      | 4008321147875   4008321147899   4062172213486 | c0d6f8d6-6d7d-4632-96fe-32aacce2ee6a   df72245a-57ed-42fb-90a2-5ca3c09b618d | Lead                       | 7439-92-1              |

| Product description     | Safe use instruction                                                                               |
|-------------------------|----------------------------------------------------------------------------------------------------|
| HBO 350 W/S             | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 350 W <sup>1)</sup> | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 5000 W/HK           | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 1000 W/D            | The identification of the Candidate List substance is sufficient to allow safe use of the article. |

## Product family datasheet

| Product description         | Safe use instruction                                                                               |
|-----------------------------|----------------------------------------------------------------------------------------------------|
| HBO 201 W/HS-D2             | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 3500 W/HK               | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 250 W/LS                | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 500 W/A <sup>2)</sup>   | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 500 W/B <sup>2)</sup>   | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 1000W/DHL               | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 3500 W/MR               | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 5000 W/MF <sup>3)</sup> | The identification of the Candidate List substance is sufficient to allow safe use of the article. |
| HBO 5000 W/S <sup>3)</sup>  | The identification of the Candidate List substance is sufficient to allow safe use of the article. |

## Product family datasheet

- 1) Lamp suitable for pulse operation between 250...500 W. Maximum permissible power is 350 W for constant power operation. Duty cycle 12 h ON/30 min OFF
- 2) Duty cycle 12 h ON/30 min OFF
- 3) Lamp contains overpressure even in cold status - additional safety regulations, supplied with the lamps, have to be fulfilled. Please read Technical bulletin DO-SEM TB 004 carefully
- 4) Distance from end of base to tip of anode or cathode (cold)
- 5) Anode underneath
- 6) Cooling fins on cathode base
- 7) Maximum permissible base temperature: 200 °C
- 8) Anode on top
- 9) Maximum permissible base temperature: 230 °C

## Product family datasheet

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### Safety advice

Because of their high luminance, UV radiation and high internal pressure (when hot) HBO lamps may only be operated in enclosed lamp casings specially constructed for the purpose. Mercury is released if the lamp breaks. Special safety precautions must be taken. More information is available on request or can be found in the leaflet included with the lamp or in the operating instructions.

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### Application advice

For more detailed application information and graphics please see product datasheet.

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### Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.