


**Ready for your ideas!**

**Specialty lamps for innovative applications  
in medicine and industry**

SEE THE WORLD IN A NEW LIGHT

**OSRAM**





In medicine and industry, lamps have to meet specific requirements in each of their areas of application. With its extensive know-how as a system supplier, OSRAM has established itself as a competent partner of leading equipment manufacturer worldwide. In medical engineering, industry and other special applications, very high requirements are placed on the quality of light and the reliability of the lamps; as one of the world's largest manufacturers of lamps and lighting systems, OSRAM can meet these requirements.

## Highly qualified lighting specialists.

### Focussed Xenon-Light **XBO® R 300 W**

- Xenon discharge lamp for DC operation
- Short arc
- Focussing reflector
- Reflector coated for maximum reflection in visible spectral range
- For light guides with up to 8 mm diameter
- Cables with plug-in connector
- Ozone-free
- Hot re-strikeable

### Focussed UV-A and blue light (Long Life) **HXP™ R 120 W UV**

- Mercury discharge lamp for AC operation at constant power
- Short arc
- Long-life: average 2,000 hours
- Focussing reflector
- Reflector coated for maximum reflection at 320 ... 500 nm range

### Focussed light (Long Life) **HXP™ R 120 W VIS**

- Mercury discharge lamp for AC operation at constant power
- Short arc
- Long-life: average 2,000 hours
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### Mercury free instant light **LINEX®**

- High performance type dielectric barrier discharge lamp system
- Aperture lamp and inverter
- Instant light within a few milliseconds
- Mercury (Hg) free lamp system

#### **LINEX® A3-10W40/ LINEX® A4-10W24**

- Especially used for the exposure process in high end digital copiers and scanners
- Provides an illuminance of 80,000/48,000 lux in white (triphosphor)

#### **LINEX® A4-10A24**

- Produce intense UV-A light with a maximum around 360 nm
- Provides an irradiance of typically 4 mW/cm<sup>2</sup> at a distance of 8 mm from the aperture

### Intense UV-C light for surface cleaning **XERADEX®**

- 20 W and 100 W excimer lamp system
- Patented pulsed operating principle obtains four times higher efficiency compared to conventional operations
- VUV radiation at 172 nm wavelength
- Efficient ozone generation
- No cooling required

## Endoscopy

### Requirements

Illumination of human organs or tissue with white light containing a well-balanced mix of colours in its spectrum. High colour rendering index. Focused light beam for easy and efficient coupling into light guides with small diameters.

### Solutions

- XBO® R 100 W
- XBO® R 180 W
- **XBO® R 300 W**
- HLX® 64627
- HLX® 64634
- HLX® 64653

### Typical applications

Endoscopic light sources



## Microscopy

### Requirements

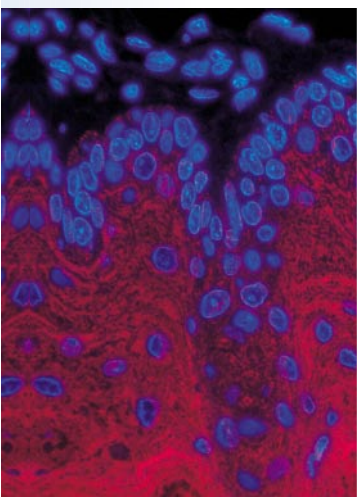
Illumination of slide preparations through small diameter optics. Different wavelengths applicable for different fluorescent markers, therefore a wide-range spectrum from UV-A through blue and green to red colour is required. Long-life for time-consuming screening tasks.

### Solutions

- HBO® 50W/AC
- HBO® 100W/2
- HBO® 103W/2
- **HXP™ R 120 W VIS**

### Typical applications

Fluorescent microscopy



# The right lamp whatever the main a

## Air and surface disinfection

### Sterilisation with UV light

### Requirements

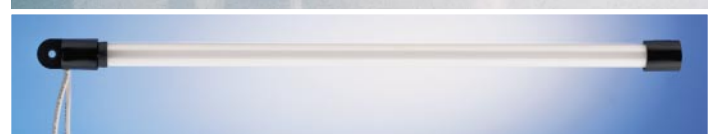
High germicidal efficiency with surface and/or spot illumination. Long-life lamp.

### Solutions

- **LINEX®**
- **XERADEX®**
- **HXP™ R 120 W UV**

### Typical applications

- intensive UV-A illumination for indirect killing of germs by generating free radicals (HXP™ R 120 W UV, LINEX® UV)
- intensive UV-C illumination for direct germicidal effects (XERADEX®)

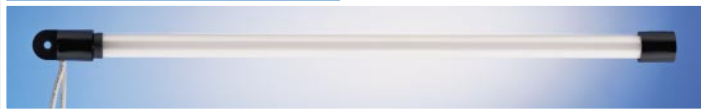


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## Object analysis

### Requirements

Bright instant light with linear radiation and long-life. UV-A and visible spectrum.



### Solutions

- LINEX® A4-10W24
- LINEX® A4-10A24

### Typical applications

Detecting structures and features with the aid of UV light, e.g. for passport readers, check machines for notes and illuminating barcodes.

## Production and quality assurance inspections

### 1. Requirement

Small area illumination: Focused light beam for efficient coupling into light guides or microscopy optics. High intensity for short camera exposure times. Long-life.

### Solution

- XBO® R 100 W
- XBO® R 180 W
- XBO® R 300 W
- HXP™ R 120 W VIS

### Typical applications

- Illumination of product lines

### 2. Requirement

Wide area illumination: Efficient, bright, shadow-less illumination of objects at short distances (a few cm)

### Solution

- LINEX®

### Typical applications

Checking labels on bottles (location, readability, completeness), scanning documents, illuminating conveyor belts, light for scanners and photocopiers

## Projection

### Requirements

Illumination of small frames for projection of films, still images or patterns.

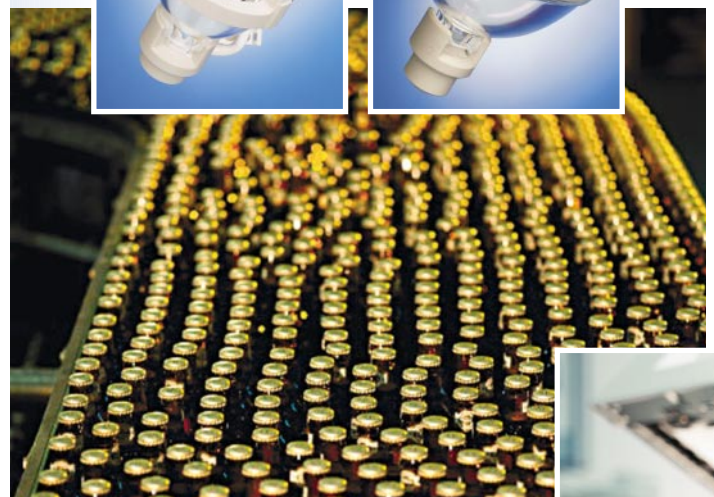
Depending on specific application either a well-balanced continuous light spectrum with high colour rendering index required or peak-like spectrum for black-and-white images sufficient. High intensity for high-speed exposures (3D scanning).

### Solutions

- HXP™ R 120 W VIS
- XBO® R 300 W

### Typical applications

- Projection of patterns for optical 3D scanning (triangulation)
- Determining of reference colour components of film originals in film post production



## Photopolymerisation

### Requirements

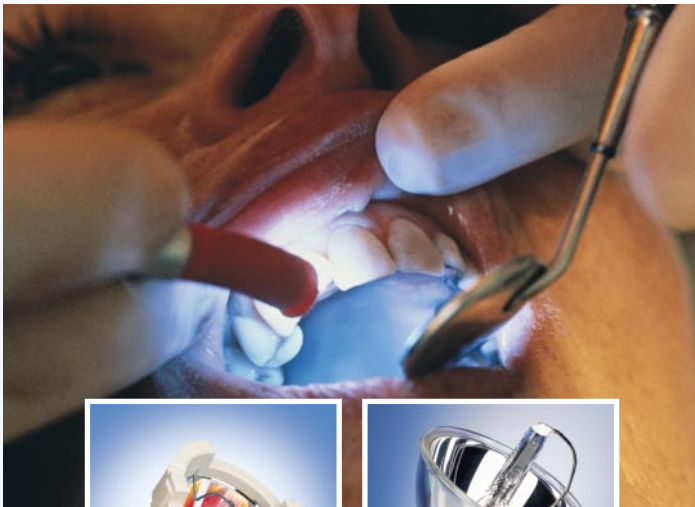
Exposure of light activated adhesives to UV-A or to blue colour light. High irradiation level required for short curing times of adhesives in industry or dental composites in dentistry. Long-life for mass production processes.

### Solutions

- XBO® R 180 W
- **XBO® R 300 W**
- HBO® R 103 W
- HBO® 200 W
- **HXP™ R 120 W UV**

### Typical applications

- Curing of dental composites
- Curing of adhesives



## Biotechnology

### Requirements

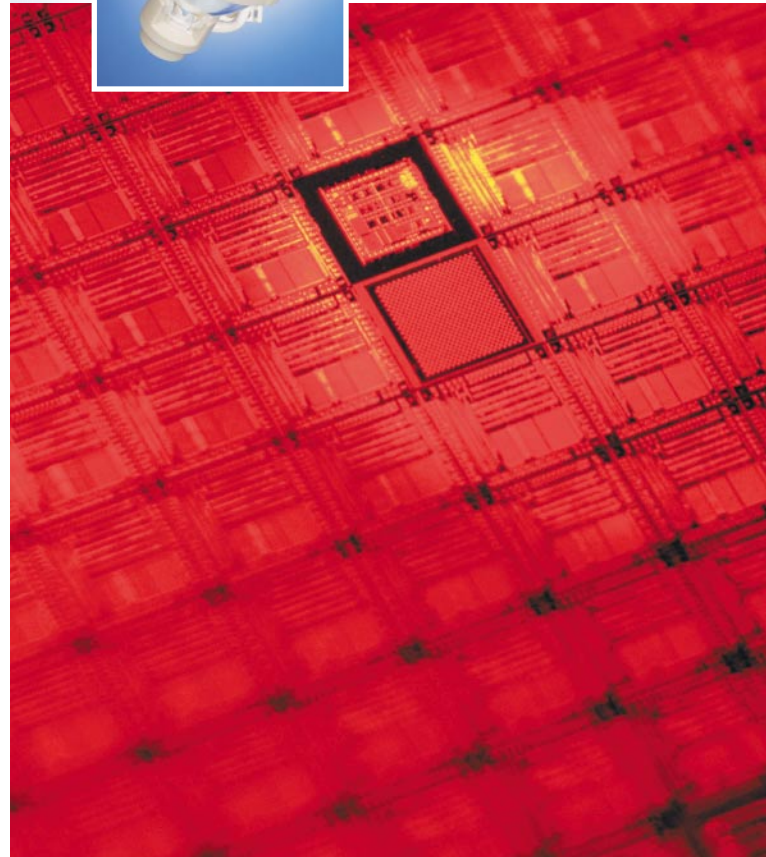
Intensive and efficiently focused near UV-A beam for triggering chemical reactions, e.g. in nucleotide chains. Additionally, visible light beam to trigger fluorescence of fluorescent markers. Long-life.

### Solution

- **HXP™ R 120 W VIS**

### Typical applications

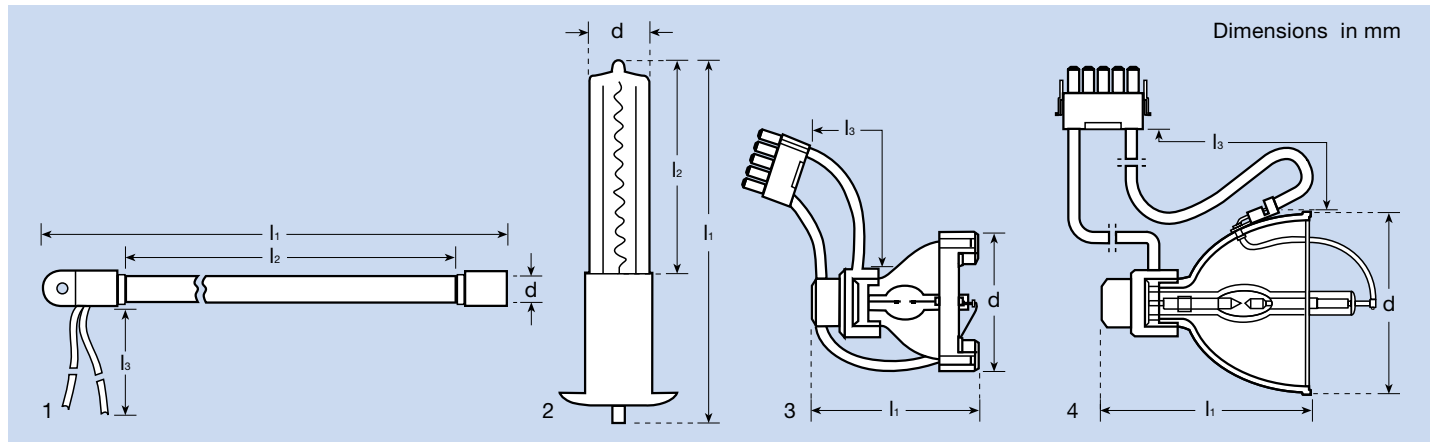
- Synthesis of oligonucleotide microarrays
- Read-out of microarrays



## Ready for your ideas – Specialty lamps from OSRAM

Working in partnership to turn ideas into reality. Use OSRAM know-how to improve existing and find new applications for the future.

## Technical data



Product reference	LINEX® A4-10W24	LINEX® A4-10A24	LINEX® A3-10W40	XERADEX® 20W	XERADEX® 100W
Fig. no.	1	1	1	2	2
Type of current	pulsed dc-current	pulsed dc-current	pulsed dc-current	pulsed dc-current	pulsed dc-current
Lamp wattage	24 W	24 W	40 W	20 W	100 W
VUV radiation power	–	–	–	8 W	40 W
Rated lamp current	1 A	1 A	1.7 A	–	–
Average life	4,000 h	4,000 h	4,000 h	–	–
Burning position	any	any	any	–	–
Colour temperature	5,600 K	–	5,600 K	–	–
Diameter d	11.5 mm	11.5 mm	11.5 mm	40 mm	40 mm
Length over all l <sub>1</sub>	277 mm	277 mm	375 mm	245 mm	700 mm
Bulb length l <sub>2</sub>	250 mm	250 mm	350 mm	120 mm	600 mm
Cable length l <sub>3</sub>	230 mm	230 mm	230 mm	–	–
Electrical connectors	Molex	Molex	Molex	–	–
Rated lamp voltage	< 3 kV	< 3 kV	< 3 kV	–	–
Lamp operating frequency	> 80 kHz	> 80 kHz	> 80 kHz	–	–
Illuminance	48,000 Lx <sup>3)</sup>	N/A	80,000 Lx <sup>3)</sup>	–	–
Inverter	QT LINEX 1x24/24	QT LINEX 1x24/24	QT LINEX 1x24/40	DBD-20-110/240 V	DBD-100-110/240 V

Product reference	HXP™ R 120W/45 C VIS	HXP™ R 120W/45 C UV	XBO® R 300W/60 C OFR
Fig. no.	3	3	4
Type of current	AC	AC	DC
Lamp wattage	120 W	120 W	300 W
Initial voltage range	65...95 V	65...95 V	14...19 V
Rated lamp current	1.4 A	1.4 A <sup>1)</sup>	16 A
Initial aperture lumens	2,450 lm <sup>1)</sup>	9 W <sup>1) 2)</sup>	2,350 lm <sup>1)</sup>
Average life	2,000 h	2,000 h	1,000 h
Burning position	p20	p20	p20
Colour temperature	approx. 9,000 K	N/A	approx. 6,200 K
Beam-to-axis angle	22°	22°	30°
Diameter d	67 mm	67 mm	82 mm
Length over all l <sub>1</sub>	max. 77 mm	max. 77 mm	max. 80 mm
Working distance	45 mm	45 mm	60 mm
Cable length l <sub>3</sub>	approx. 120 mm	approx. 120 mm	approx. 120 mm
Electrical connectors	AMP-plug	AMP-plug	AMP-plug

<sup>1)</sup> Light passing through a 5 mm aperture placed at working distance

<sup>2)</sup> total radiation power in spectral interval 320 ... 500 nm

<sup>3)</sup> at 8 mm distance

We should like to thank for allowing us to use pictures from Zeiss, Jena (title), Braun, Bahlingen/Baden (clean room) and Hermann Winkels GmbH, Horb (check machine for banknotes)

