



OPTICS Engineering Ltd.

2015 Catalog

OPTICAL SOLUTIONS FOR
THE INDUSTRY AND SCIENCE

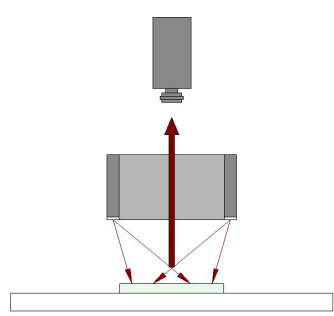


LED Ring Lights

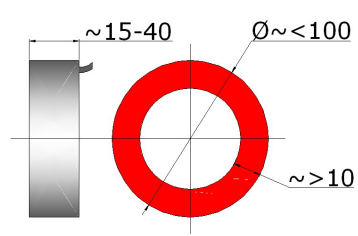
LED Ring Lights provide direct illumination with high and even intensity for specular or opaque surfaces. Beam angle is factory adjusted according to customers' demand on working distance and illuminated area size.

Specifications:

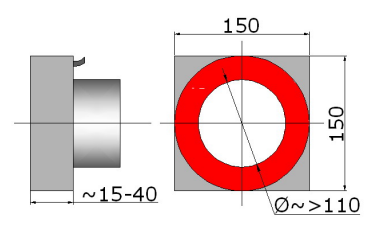
- white, UV, blue, green, red or NIR light
- power requirement: 12V DC or 24V DC (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu or plastic housing
- designed to operate in harsh industrial environment
- please call for IP classified versions



Working example



Standard Ring Light



Large Area Ring Light



UV Ring Light

LED Ring Lights

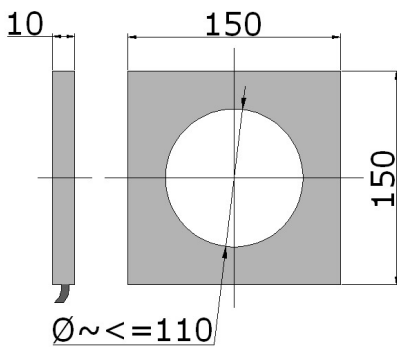
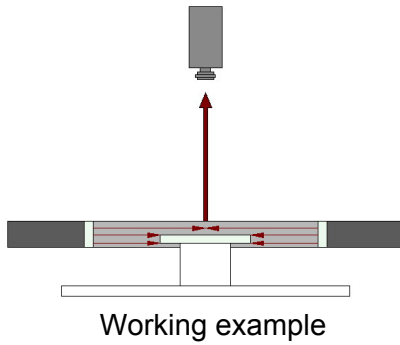
Product Number	Dimensions (mm)	Lighting area (mm)	Wave-length (nm)	Available IP protection
3-056-000	Ø80/Ø40x30	Ø80/Ø40	white	IP65
3-057-000	Ø100/Ø60x29	Ø100/Ø60	white	IP65
3-057-600	Ø100/Ø60x29	Ø100/Ø60	465	IP65
3-060-000	Ø100/Ø45x30	Ø100/Ø45	white	IP65
3-061-000	Ø100/Ø45x30	Ø100/Ø45	850	IP65
3-063-000	Ø80/Ø50x30	Ø80/Ø50	375	IP65
3-064-000	Ø80/Ø40x24	Ø80/Ø40	white	IP65
3-075-000	150x150x45/Ø90	Ø125/Ø100	640	IP65
3-076-000	150x150x30/Ø90	Ø125/Ø76	640	IP65
3-080-000	Ø70/Ø50x23	Ø70/Ø50	640	IP65

Please call for more standard or custom versions.

Please call for segmented versions.

LED Darkfield (Low Angle) Lights

LED Darkfield (Low Angle) Lights are suitable for highlighting surface roughness, surface structure, edges with the help of light nearly plane parallel with the surface.

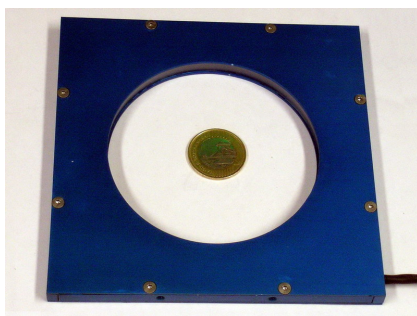
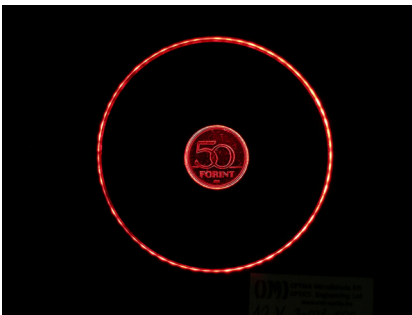


Specifications:

- white, UV, blue, green, red or NIR light
- power requirement: 12V DC or 24V DC (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu or plastic housing
- designed to operate in harsh industrial environment
- please call for IP classified versions

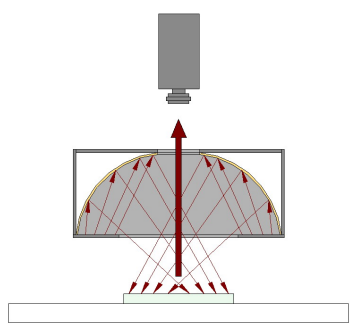
LED Darkfield (Low Angle) Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wave-length (nm)	Available IP protection
3-067-000	100x100x10/Ø60	Ø60x8	640	IP65
3-077-000	150x150x10/Ø100	Ø100x8	640	IP65
3-078-000	150x150x10/Ø100	Ø100x8	850	IP65

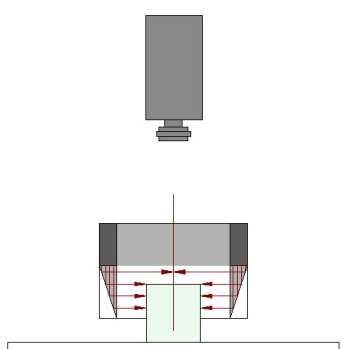


Please call for more standard or custom versions.

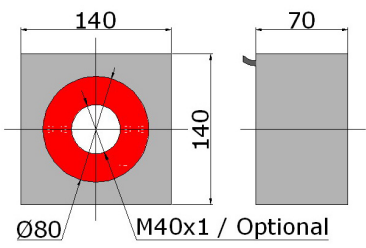
Please call for segmented versions.



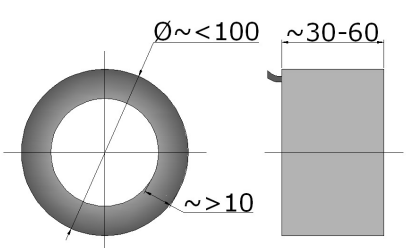
LED Dome Light



LED Low-Angle Light



LED Dome Light typical dimensions



LED Low-Angle Light typical dimensions

LED Dome Lights

LED Dome Lights ensure even, shadowless illumination for inspecting specular, uneven or curved surfaces. Shadows and reflections generated by the surface can be avoided this way.

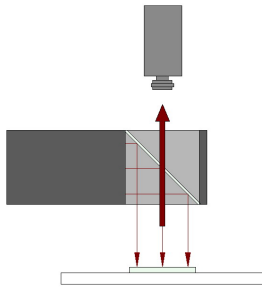
Specifications:

- white, UV, blue, green, red or NIR light
- power requirement: 12V DC or 24V (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- designed to operate in harsh industrial environment

LED Dome Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)
3-085-000	140x140x67	Ø80	640
3-087-000	Ø70/Ø30x40	Ø50	Fehér
3-090-000	Ø122/Ø80x60	Ø80	Fehér

Please call for more standard or custom versions.



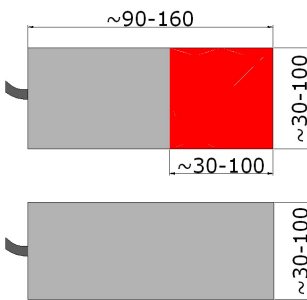
LED Coaxial Lights

LED Coaxial Lights

LED Coaxial Lights ensure even, diffuse, axial illumination for inspecting glossy surfaces.

Specifications:

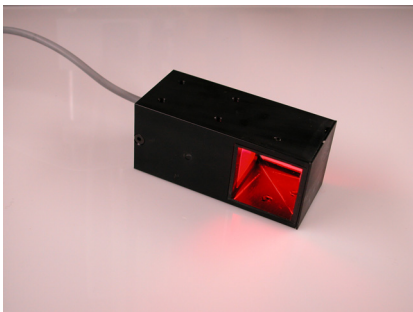
- white, UV, blue, green, red or NIR light
- power requirement: 12V DC or 24V DC (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- designed to operate in harsh industrial environment



Typical dimensions

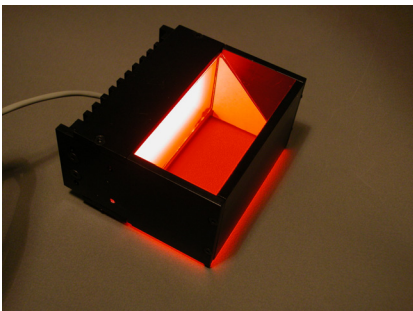
LED Coaxial Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-301-000	90x40x40	30x30	640	IP65
3-304-000	110x100x60	100x50	640	IP65

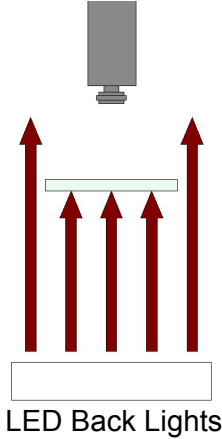


30x30 LED Coaxial Light

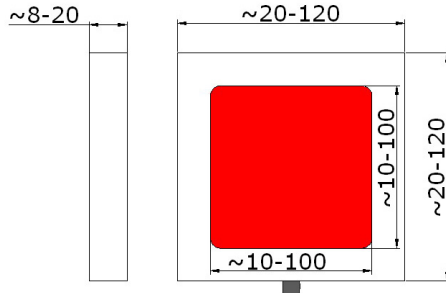
Please call for more standard or custom versions.



100x50 LED Coaxial Light



LED Back Lights



Typical dimensions

Standard LED Backlights

Standard LED Backlights ensure homogen illumination to display contours of objects sized up to 100 mm with high contrast. Also applicable as diffuse lighting.

Specifications:

- white, blue, green, red or NIR light
- homogen intensity distribution
- power requirement: 12V DC or 24V DC (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- glass or plastic illumination surface
- designed to operate in harsh industrial environment
- please call for IP classified versions

Slim Standard Backlights:

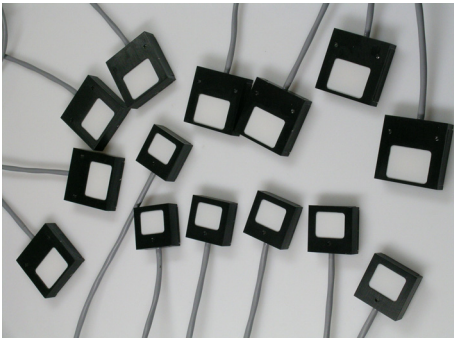
- typical thickness: 8 to 10 mm
- illuminating area: <~50 mm x < ~50 mm

Thin Standard Backlights

- typical thickness: 12 mm
- illuminating area: <~50 mm x < ~50 mm

Thick Standard Backlights

- typical thickness: 20 mm
- illuminating area: <~100 mm x < ~100 mm



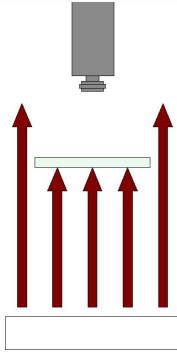
Slim Standard Backlights

Standard LED Backlights

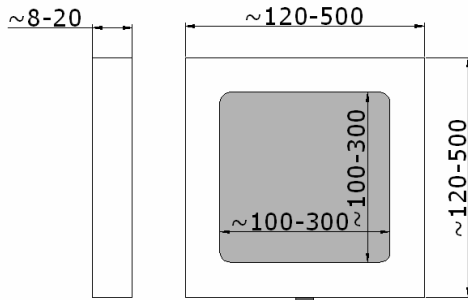
Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-107-000	30x14x10	15x10	525	IP65
3-106-000	42x30x8	25x25	640	IP65
3-108-000	60x60x12	40x40	640	IP65
3-201-000	100x100x20	80x80	640	IP65

Please call for more standard or custom versions.

Please call for edge-to-edge versions.



Large LED Back Lights



Typical dimensions

Large LED Backlights

Large LED Backlights ensure homogen illumination to display contours of objects larger than 100 mm with high contrast. Also applicable as diffuse lighting.

Specifications:

- white, blue, green, red or NIR light
- homogen intensity distribution
- power requirement: 12V DC or 24V DC (please specify when ordering)
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- plastic illumination surface
- designed to operate in harsh industrial environment
- please call for IP classified versions

Standard Large LED Backlights:

- typical thickness: 25 mm
- illuminating area: >~100 mm x >~100 mm

Slim Large LED Backlights (edge-lit):

- typical thickness: 10 mm
- illuminating area: >~100 mm x >~100 mm



Edge-lit Slim Backlight



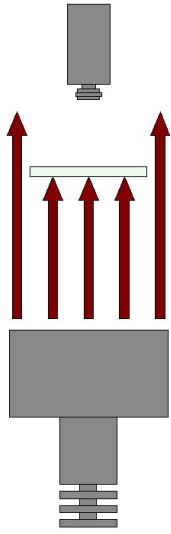
Standard Large Backlight

Large LED Backlights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-207-000	130x190x25	100x160	Vörös	IP65
3-212-000	200x200x30	200x150	Fehér	IP65
3-240-000	235x240x10	200x200	Vörös	IP65
3-241-000	180x180x10	120x140	Vörös	IP65

Please call for more standard or custom versions.

Please call for edge-to-edge versions.



LED SPOT Backlight



LED SPOT Backlight

LED SPOT Backlights with Extra Large Intensity

LED SPOT Backlights offer extra large intensity for exposures in the microsecond range. Simple installation, no maintenance. Recommended for narrow space applications, too.

Specifications:

- white, blue, green, red or NIR light
- power consumption: max. 3 W
- homogene intensity distribution
- illuminating area: $\varnothing 35$ mm
- power requirement: constant current
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- dimensions: $\varnothing 40/\varnothing 25 \times 50$ mm
- plastic or glass illumination surface
- designed to operate in harsh industrial environment
- please call for IP classified versions

Please call for more standard or custom versions.

LED SPOT Lights

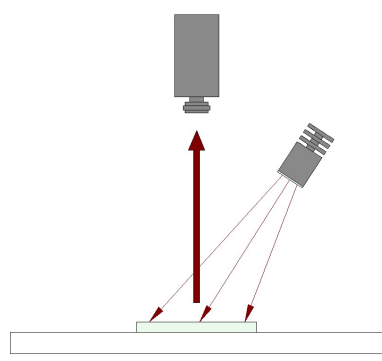
LED SPOT Lights including one power LED offer high intensity for a wide range of application with maintenance-free passive cooling.

Specifications:

- white, blue, green, red or NIR light
- power consumption: max. 3 W
- beam angle: 8°, 30°, 50° or 10°x50°
- power requirement: constant current
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- compact size: $\varnothing 25 \times 50$ mm
- fixing with M4 screw
- cable outlet on the side
- designed to operate in harsh industrial environment
- please call for IP classified versions

Typical field of use:

- products, workpieces
- laboratory tests
- machine vision measurements, calibrations
- microscopic inspections
- workpieces to be machined (eg. milling, lathing etc.)



LED SPOT Light



LED SPOT Lights



LED SPOT Light with hose

LED SPOT Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-402-000/ 1W/3W/5W	$\varnothing 25 \times 45$	$\varnothing 18,5$	any color	IP65
3-410-000/ 1W/3W/5W	$\varnothing 25 \times 45 + 120$ (goose neck)	$\varnothing 18,5$	any color	IP65

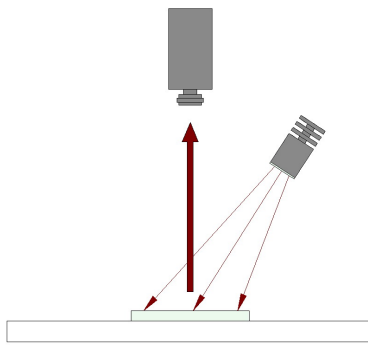
Please call for more standard or custom versions.

LED SPOT Modul Lights

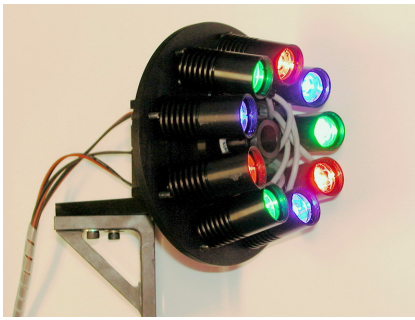
LED SPOT Modul Lights include multiple LED SPOT Lights offering extreme intensity with maintenance-free passive cooling and individually adjustable reflectors.

Specifications:

- power consumption: max. $n \times 3 \text{ W}$
- beam angle: from 10° up to 180°
- white, UV, blue, green, red, yellow or NIR light
- power requirement: constant current
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- circle, ring or line layout
- extra long lifetime
- robust, anodized alu housing with robust fixing
- designed to operate in harsh industrial environment
- please call for IP classified versions



LED SPOT Light



9x3W RGB Modul Light



4x3W Modul Light

LED SPOT Modul Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-402-200/ 1W/3W/5W	Ø80x87	Ø18,5x4pcs	any color	IP65
3-456-000/ 1W/3W/5W	200x50x80	170x30	any color	IP65

Please call for more standard or custom versions.

LED Signal Lights

Illuminations visible from any direction, built into colorless or colored covering. Warning or guiding light systems eg. for parking lots. Also available with unique control.

Specifications:

- power consumption: max. 3 W, extra long lifetime
- beam angle: up to 180°
- white, UV, blue, green, red, yellow or NIR light
- power requirement: constant current
- available with power supply with optional trigger input
- please call for IP classified versions

RGB LED SPOT Lights

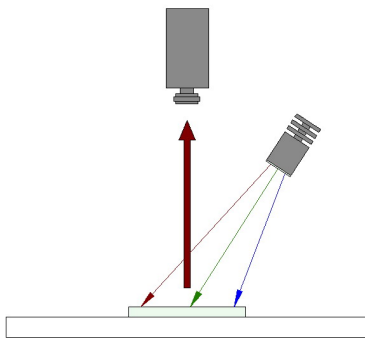
RGB LED SPOT Lights offer three separately controllable LED chips integrated into one compact modul. A wide range of visible color gamut or white light can be achieved with integrated color mixing optics. RGB LED SPOT Lights are also available in moduls to achive greater intensity.

Jellemzők:

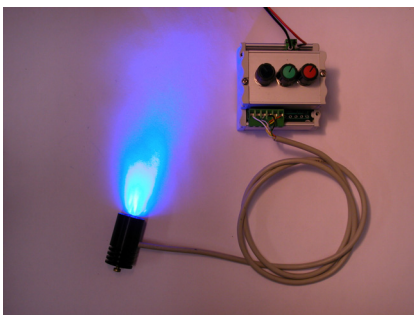
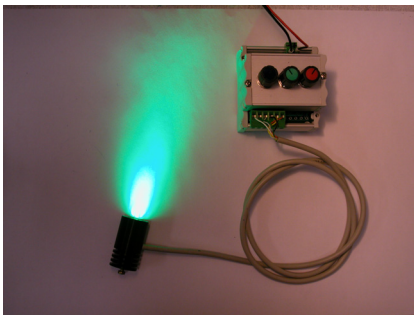
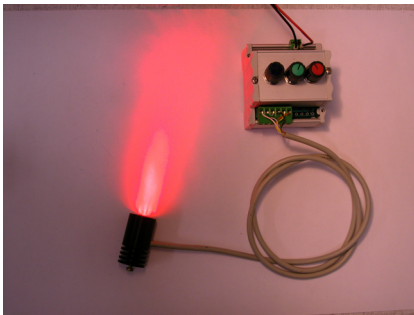
- white or coloured light
- power consumption: max. 3 W
- beam angle: 30°
- power requirement: constant current
- separately adjustable intensity for each chip
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- compact size: $\varnothing 25 \times 50$ mm
- fixing with M4 screw
- cable outlet on the side
- designed to operate in harsh industrial environment
- please call for IP classified versions

Typical field of use:

- enhancing contrast depending on the color of the workpiece in machine vision inspection
- illumination with variable color at laboratory tests
- museum display cases
- artworks
- photography illuminations



RGB LED SPOT Light



3x1W RGB LED SPOT Lights

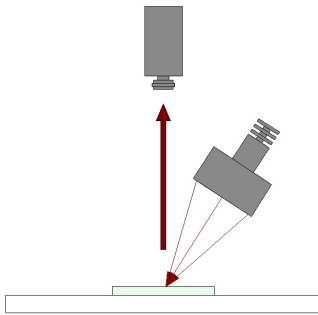
Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)	Available IP protection
3-403-000	$\varnothing 25 \times 45$	$\varnothing 24$	RGB	IP65
3-411-000	$\varnothing 25 \times 45 + 120$ (goose neck)	$\varnothing 24$	RGB	IP65

Please call for more standard or custom versions.

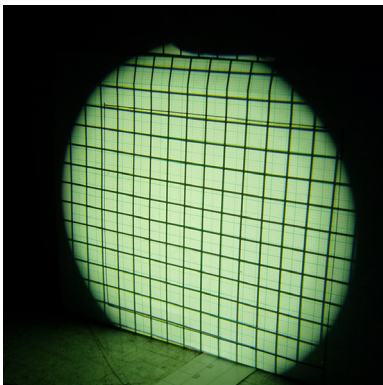
LED SPOT Projectors Lights

LED SPOT Projector Lights illuminate workpieces of any size with a Structured Light. Usually optimised for a given distance, but also available with focusable optics.

We offer LED SPOT Projectors to project light spots with definite size or diameters, or with any pattern e.g. for 3D scanning.



LED SPOT Projector

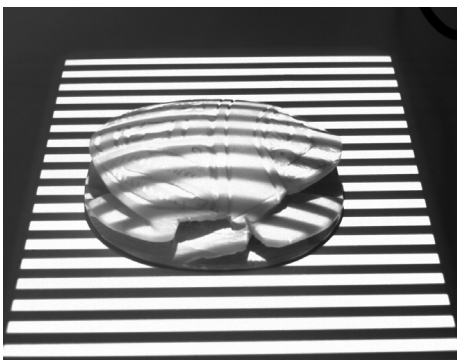


Typical pattern

Specifications:

- power consumption: max. 3 W
- projecting distance: max. ~3 m
- white, blue, green, red or NIR light
- available with custom size or pattern (Structured Light)
- even intensity distribution
- power requirement: constant current
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- compact size: $\varnothing 25 \times 50$ mm
- fixing with M4 screw
- cable outlet on the side
- designed to operate in harsh industrial environment
- please call for IP classified versions
-

Please call for more standard or custom versions.

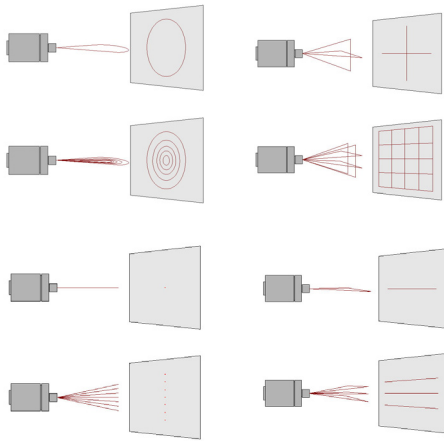


Projector for 3D scanning



LED SPOT Projector with C-mount lens

Professional Laser Illuminations



Typical patterns



Specifications:

- diffractive optics without moving parts, maintenance-free
- structured laser light
- focusable
- power requirement: 5V DC
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- professional semiconductor laser chips
- available with multiple wavelengths
- designed to operate in harsh industrial environment
- robust, anodized aluminium housing
- available with adjustable fixing

Typical patterns:

- dot, dot-series
- line, parallel lines
- cross, grid
- circle, concentric circles
- custom patterns are also available on demand

LED Line Lights

LED Line Lights illuminate objects, signs, labels, or workpieces passing in front of a sensor e.g. a line-camera. Direct line illumination is a special lighting used in industrial machine vision automated inspections.

Specifications:

- LED light source projecting a straight line with high intensity
- plastic cylindrical lens
- white, blue, green, red or NIR light
- compact, anodized alu housing
- fixing with M5 screws
- working distance: 50-150mm
- focusable
- length of illuminated area: 250 mm (300 mm as an option)
- width of illuminated area: 5-15 mm
- power requirement: 24VDC
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)

LED Line Lights

Product number	Dimensions (mm)	Illuminating area (mm)	Wavelength (nm)
3-015-000	250x60x20	250x10	White



LED Line Light

Please call for more standard or custom versions.

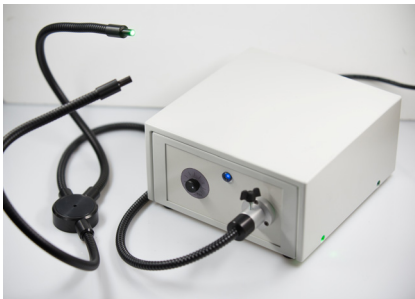
LED Light Sources for Fiber Optics

LED Light Sources for Fiber Optics offer longlife illumination for fiber optics application. Tens of thousands of hours lifetime, dimmable, constant color temperature.

Flexible or semi-rigid fibers are available with custom length and with focusable optics.

Specifications:

- nominal max. luminous flux: 1500 lm
- dimming with front panel knob or via Trigger Input
- dimensions: 250 x 220 x 117 mm
- power source: 230 V AC, max. 50 W
- short-driven external trigger
- thermal protection with internal heatswitch
- weight: 2,6 kg
- available with custom wavelength LED chips



LED Light Source for
Fiber Optics



Focusable Optics

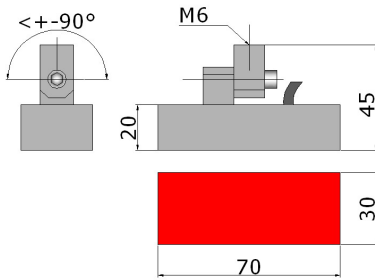
LED Light Source for Fiber Optics

Product number	Dimensions (mm)	Fiber connection dimension	Fiber diameter
3-650-000	250x220x117 mm	Ø14x37 mm	Ø6 mm

Please call for models with custom connectors or with custom wavelength.

LED Matrix Lights

LED Matrix Lights illuminate objects, signs, labels or workpieces with light emitted by a large surface area. This kind of direct illumination offers high intensity for a wide range of application.



Typical dimensions

Specifications:

- white, UV, blue, green, red or NIR light
- power source: 12V DC or 24V DC
- available with power supply with optional trigger input
- continuous or strobe operation (depends on power supply)
- extra long lifetime
- robust, anodized alu housing
- compact size
- fixing with M4 screw
- designed to operate in harsh industrial environment



White LED Matrix Lights

LED Matrix Lights

Product number	Dimensions (mm)	Illuminating surface (mm)	Wavelength (nm)
3-005-000	40x20x22	32x16	640
3-001-000	70x30x45	64x26	630
3-002-000	70x30x45	64x26	880
3-003-000	70x30x45	64x26	white

Please call for more standard or custom versions.



NIR LED Matrix Lights

LED Power Sources

LED Power Sources are available in several versions depending on user requirements: dimmable, triggerable, with on or more outputs, typically with DIN rail mounting.

Because of the varied fields of applications, details must be specified when ordering.

Specifications:

- switched-mode electronics
- dimmable with built in knob or analog signal
- available with external trigger input
- typical versions:
 - o 12V DC or 24V DC input, constant current output
 - o 230V AC input, constant current output
 - o 230V AC input, 5V DC, 12V DC or 24V DC output available with multiple outputs
- DIN rail mounting
- flickerless technology



Power Source with built in knob



Power Source with multiple outputs



Power Source with multiple knobs and switch

LED Power Sources

Product number	Input / Output	Dimming/Triggering
7-260-000	12VDC / 5VDC	
7-204-000	24VDC / 1A	built in knob
7-210-000	24VDC / 100mA	trigger + knob
7-201-000	230VAC / 24VDC	

Please call for more standard or custom versions.

Services

Optical components

We manufacture and distribute unique, small or medium series precision optical elements eg.: optical flats, filters, surface mirrors, prisms, lenses.

Optical Mirrors

We manufacture and refurbish front or rear surface aluminium mirrors.

Extension tubes, spacer rings

We manufacture and distribute extension tubes and spacers for C-mount lenses and other kind of industrial optics. Custom length and versions with electronically isolated threads are available.

Industrial lenses, filters

We distribute C-mount lenses for machine vision. Please call for standard, megapixel or telecentric optics, color filters or polarizers.

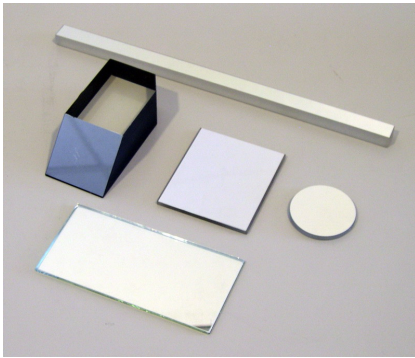
Optical subassemblies

We manufacture, assemble and calibrate optical components and subassemblies in a workshop with clean area.

Optical microstructures for calibration

We manufacture optical microstructures for calibration and measurement purpose. Micrometer-range precision, microlitographic technology. Please call for custom figures and substrates. Large printed versions are available as well.

Please call for more standard or custom versions.



Evaporating aluminum mirrors



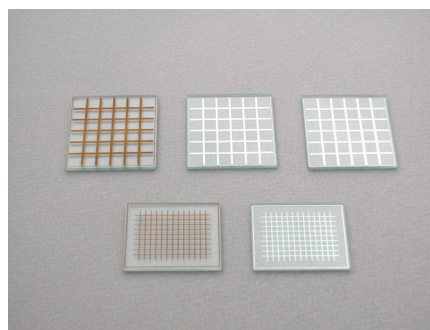
C-C mount spacers



Manufacturing optical parts



Assembly workshop



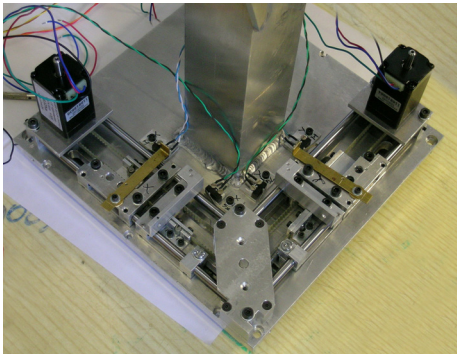
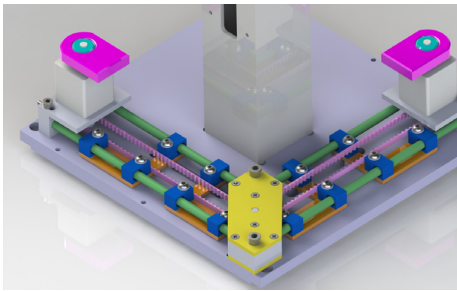
Optical microstructures for calibration

Optical and optomechanical systems and devices

We design, develop, produce and install optical and optomechanical devices and equipments.

Please call for in-line machine vision equipments for non-contact quality inspection.

We design, develop and manufacture optomechanical devices for research and science.



High precision aperture for neutron imaging

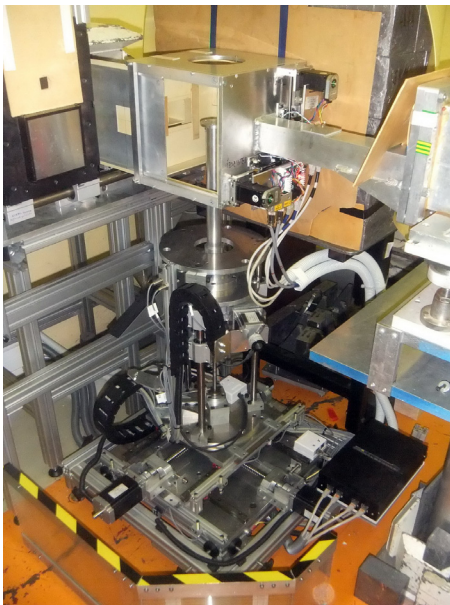
Restoring and refurbishing optical devices

Restoring, repairing

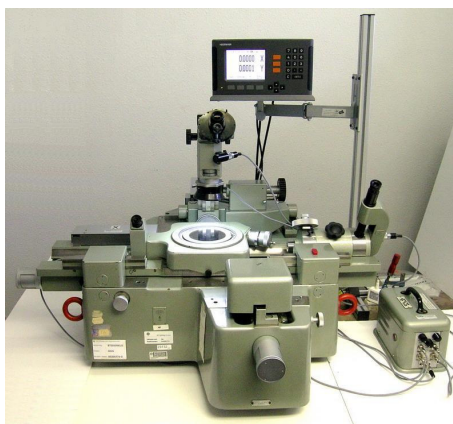
We restore historical optical devices and instruments, achieving the original and functional condition: surveying instruments e.g. theodolites, old binoculars, astronomical telescopes etc. We repair, renew, restore and clean binoculars, riflescopes and other optical devices.

Refurbishing, modernization

We refurbish, functionally repair, renew and calibrate optical devices, instruments and tools by repairing or replacing the optical, mechanical and electrical components: industrial microscopes, optical instruments, projection microscopes etc.



PGAA – NIPS neutron tomograph



Refurbished X-Y measuring microscope



Renewed heliometer Fraunhofer 1817

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