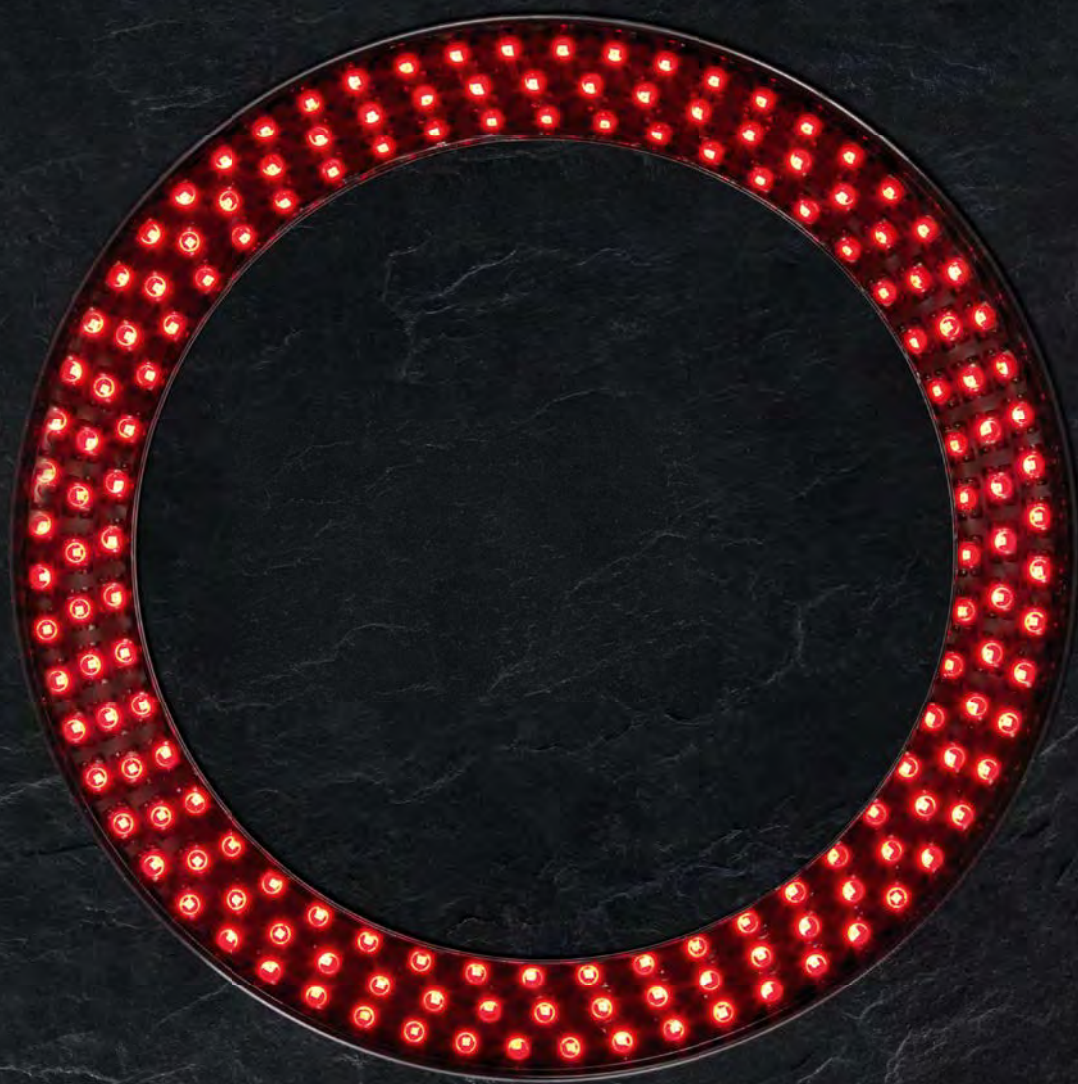


PRODUCT OVERVIEW

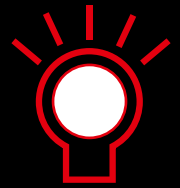
VISION SYSTEMS – LIGHTING – OPTICS

the easy way of machine vision





The value of seeing more



BAR LIGHTS

FOCUSED BAR LIGHTS

AREA LIGHTS

RING LIGHTS

DARK FIELD LIGHTS

DOME LIGHTS

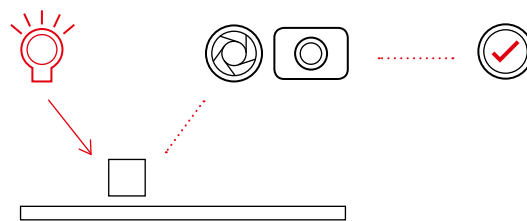
SPOT LIGHTS

TELECENTRIC LIGHTS

VICOLUX® LIGHTING

THE BEST PRECONDITION FOR SHARP RESULTS

An imaging system can only recognise what is visible. The most intelligent algorithm for information processing remains worthless if the object concerned is not recognisable. Having the right lighting is the key.



Each task requires special illumination that fits the circumstances. Because all materials – whether glass, plastic, metal, liquids, paste-like substances or textile fabrics – possess absorbent, transmitting and reflective properties. Furthermore, they also have their own highly individual shapes and geometries.

In order to quickly and economically come up with an optimal solution for our customers we offer a broad range of lighting that meets a multitude of requirements and can create a lighting system that:

- ... Illuminates a diverse array of geometries (surface areas, rings, lines)
- ... Allows for various lighting conditions (e.g. directed, diffuse, parallel, shadow-free, focused, polarised)
- ... Allows for a great variety of lighting principles (bright field, dark field, incident light, transmitted light)
- ... Works with diverse wavelengths (from UV365 to IR950)
- ... Can be actuated in a broad variety of ways (switchable, pulsable and flashable, with adjustable brightness and flash times)
- ... Can be quickly and easily combined with each other and also with optics and cameras

The vicolux® high performance LED lighting from Vision & Control lives up to these demands. It is particularly distinguished by the high performance illumination and control electronics which, despite the systems' compact design, are integrated. Vision & Control offers the right components for any lighting situation – completely uncomplicated. With trendsetting light generation, control and distribution that make visible precisely what needs to be recognised and processed.

ADVANTAGES/PROPERTIES

For over 20 years, Vision & Control has used the most powerful LEDs as light sources and is therefore able to offer the following:

HIGH RELIABILITY

- ... Stable light characteristics and long service life
- ... Integrated control units that are perfectly matched to the LEDs
- ... Rugged, industry compatible designs

MAXIMUM SPEED

- ... Rapid image evaluation based on homogeneous, high contrast images
- ... Short shutter speeds thanks to high efficiency illumination
- ... High process speeds due to powerflash control that is exact to the microsecond

REDUCED WORK AND INTEGRATION EFFORT

- ... Simple switching between continuous, pulsed and flash operation
- ... Quick set-up thanks to plug & play properties: Plug connectors, universal switch input, installation options, exchangeable accessories
- ... Electrically and mechanically combinable with optical components and vision systems
- ... Easy product selection thanks to our online catalogue and provision of all relevant technical data (CAD model, intensity distribution, etc.)

QUALITY AND SAFETY

- ... CE compliant components
- ... Tested photobiological safety, DIN EN 62471:2009-03
- ... Certification in accordance with 9001:2008

Vicolux® lighting reduces costs – from project planning to set-up, in ongoing operations and in maintenance.



BAR LIGHTS

SERIES

... LLL7
... LAL7
... LDL7

... LAL14
... LDL14

... LAL30
... LDL30
... LDLF30

... LDLF60

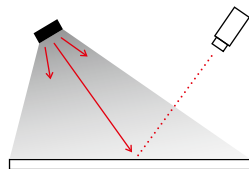
APPLICATIONS

- ... Automotive
 - . Presence control
 - . Surface inspection
- ... Packaging industry
 - . Printed image control
 - . Position determination
- ... Electronics industry
 - . Circuit path inspection
 - . Solder spots monitoring

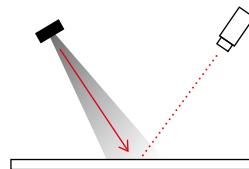
PROPERTIES

- ... Lengthwise illumination of the inspection area, using incident or transmitted light or focused on a line
- ... Homogeneous light with a high luminosity
- ... Simple adjustment of the light distribution to the respective process environment (using accessories)
- ... Electrical connection by means of standard plug connectors
- ... Virtually borderless illumination area
- ... Threaded holes for rotatable or fixed mounting
- ... Clamp adapters for variable fastening and the cascading of multiple bar lights

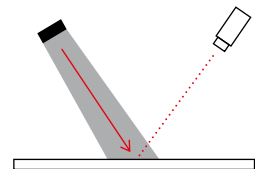
LIGHTING PRINCIPLE



DIFFUSE
(LDL/LDLF SERIES)
Homogeneous illumination of the inspection area in incident or transmitted light



DIRECTED
(LAL SERIES)
Powerful illumination of the inspection area in incident light

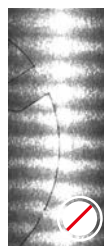


CONTINUOUSLY DIRECTED
(LLL SERIES)
Directed homogeneous illumination of the inspection area by means of integrated special optics

ELECTRONIC VERSIONS

- PLUG & PLAY
- ADJUSTABLE LIGHTING
- WITHOUT INTEGRATED CONTROL UNIT

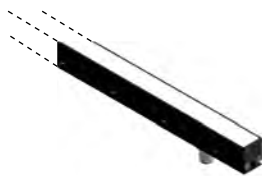
SCANNING OF A MATT-GLOSS ALUMINIUM SURFACE



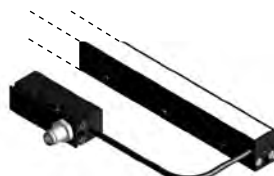
- LEFT**
Homogeneous but dark (diffuse)
- CENTRE**
Bright but only pointwise (directed)
- RIGHT**
Continuous bright line (continuously directed)



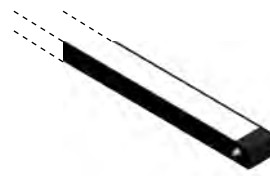
CONSTRUCTION DESIGNS



7 series and 14 series with integrated controller



7 series and 14 series with separate controller



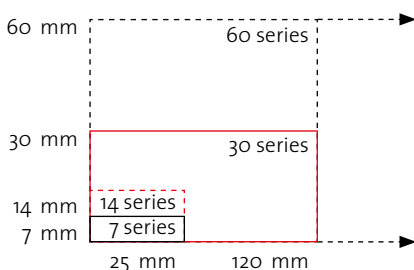
30 series and 60 series with integrated controller

WAVELENGTHS

Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	white (5,700 K)	850 nm	880 nm	950 nm
	Ultraviolet		Visible light						Infrared			
LLL7	●		●	●	●	●	●	●	●	●	●	●
LAL7	●		●	●	●	●	●	●	●	●	●	●
LAL14	●		●	●	●	●	●	●	●	●	●	●
LAL30	●		●	●	●	●	●	●	●	●	●	●
LDL7			●	●	○	●	●	●	●	●	●	●
LDL14			●	●	○	●	●	●	●	●	●	●
LDLF30			●	●	○	●	●	●	●	●	●	●
LDL30			●	●	○	●	●	●	●	●	●	●
LDLF60			●	●	○	●	●	●	●	●	●	●

● Available ○ on request

LUMINOUS FIELD SIZES



7 and 14 series
Lengths from 25 to 500 mm* (in 25 mm increments)

30 and 60 series
Lengths from 120 to 600 mm* (in 60 mm increments)

(* Special lengths upon request)

Lengths starting from 25 mm or 120 mm

COMBINED LIGHTING

2-SIDED AND 4-SIDED LIGHTING

- Bar lighting with 4-sided bracket in radiating position from bright to dark field, individually adjustable
- Suitable for the 7 series and 14 series



TUNNEL LIGHTING

- Immersion of the test object in illumination possible with linearly moved processes
- Suitable for the 7 series and 14 series



FOCUSED BAR LIGHTS

- See following page for description



ACCESSORIES

CABLE

- Suitable for all series (exception: LAL30 series and LDL30 series have an open connecting cable)



MOUNTING ADAPTOR

- For mounting the lighting in the machine/system
- Suitable for the 7 series and 14 series



POLARISERS

- Influence the direction of propagation of the light-waves, prevent interfering reflections on the test object
- Suitable for all series



FOCUSED BAR LIGHTS

SERIES

...ZAL

...ZAL-SPO

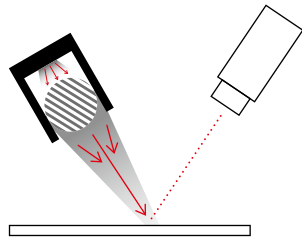
APPLICATIONS

- ... Packaging industry
 - . Printed image control
 - . Edge detection of endless material/roll goods
- ... Solar industry
 - . Inspection for microcracks
- ... Textile industry
 - . Examining the fabric structure
- ... Glass industry
 - . Foreign object detection in plate glass

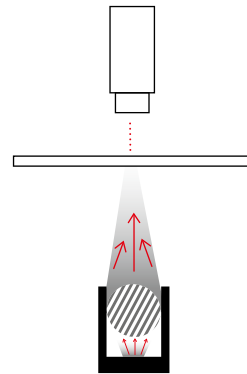
PROPERTIES

- ... Ideal for line-scan camera applications
- ... High luminosity focused on a thin line
- ... Also suitable for incident light and transmitted light applications in bright field
- ... Passive cooling

LIGHTING PRINCIPLE






INCIDENT LIGHT (ZAL SERIES)
Powerful illumination of the inspection area



TRANSMITTED LIGHT (ZAL-SPO SERIES)
Powerful illumination of the inspection area

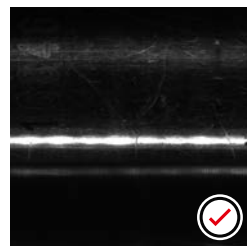
ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT

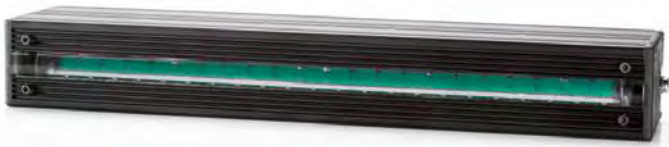
INSPECTION OF A GLOSSY METAL SURFACE



LEDs reflect on the surface



The light is focused on a thin line by means of focused bar lighting



WAVELENGTHS

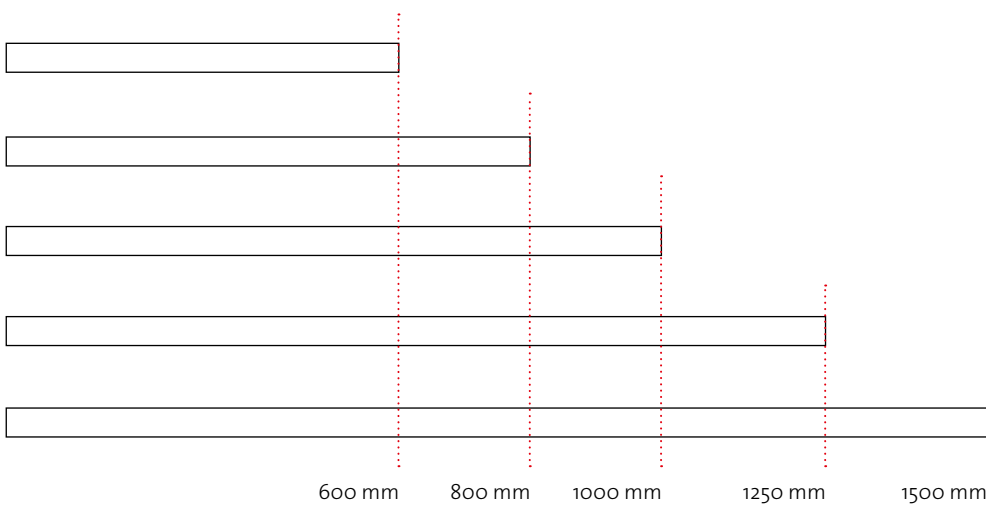
Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5700 K)	850 nm	880 nm	950 nm
	Ultraviolet			Visible light						Infrared		
ZAL				●	●		●	●	●		●	●
ZAL-SPO				●	●		●	●	●		●	●

● Available

TIP

You can easily configure your own individual bar lighting from the bar lighting items of the LAL7 and LLL7 series. You can mount a rod lens in front of the bar lighting using a bracket. They are available in various lengths and diameters. The lens is height-adjustable. With this the focal position can be changed. Consequently, a host of lighting scenarios are possible. This lighting combination can even be fitted into the most confined installation location, thanks to its very compact dimensions.

LUMINOUS FIELD SIZES



FREELY FOCUSABLE BAR LIGHTING



AREA LIGHTS

SERIES

...AL
...DL

...FAL
...FALRL
...FALKD

...FDL
...FDLRL
...FDLKD

...FAL modular
...FDL modular

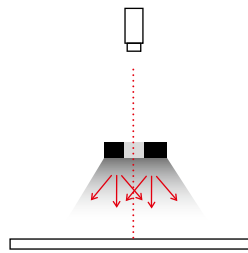
APPLICATIONS

- ... Food industry
 - . Positional determination
 - . Completeness control
- ... Glass industry
 - . Side wall inspection of hollow glass
 - . Contaminants in plate glass
- ... Automotive
 - . Presence and position control
 - . Measurement tasks

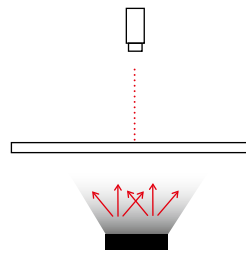
PROPERTIES

- ... Extensive range of tiny (30 x 30 mm) to very large-area standard lighting systems (180 x 240 mm)
- ... Modular area illumination in freely configurable sizes of up to 1.20 m edge length
- ... Camera view possible
- ... Light and compact designs, suitable for installation on moving machine parts

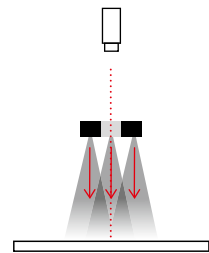
LIGHTING PRINCIPLE



DIFFUSE
Homogeneous illumination of the inspection area in incident light






DIFFUSE
Homogeneous illumination of the inspection area in transmitted light



DIRECTED
Powerful illumination of the inspection area in incident light

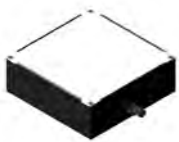
ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT



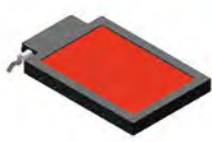


CONSTRUCTION DESIGNS



AL AND DL SERIES

- Compact, borderless, lightweight unit
- Illumination area size corresponds to the outer dimensions
- Integrated controller
- Mounting holes M3
- Easy set-up thanks to M5 plug



FAL AND FDL SERIES

- Scratchproof light-emitting surface made of glass
- Stable border with M6 mounting holes
- Lighting with camera view possible (FALKD and FDLKD series)
- Mounted (see Fig.) or separate controller (EPF or EC versions)



FALRL AND FDLRL SERIES

- Compact, borderless, lightweight unit with plastic light-emitting surface
- Mounting holes M3
- Mounted or separate controller (EPF or EC versions, see Fig.)



FAL AND FDL MODULAR SERIES

- Scratchproof light-emitting surface made of glass
- Stable border with M6 mounting holes
- Illumination area can be freely defined with a grid of 30 x 30 mm
- Optionally with camera view (see Fig.)

COMBINED LIGHTING

COAXIAL MIRROR LIGHTING

- Diffuse light incidence that strikes the test object parallel to the optical axis of the camera system
- Suitable for DL30x30 and DL60x60 series with mounting adapter and beam splitter unit (STE series)



ACCESSORIES

CABLE

- For 80x100, 100x150, 30x30, 30x60, 60x60, 30x90 and 60x90 lighting
- Available in various lengths, optionally with angled plug connectors for easy set-up



WAVELENGTHS

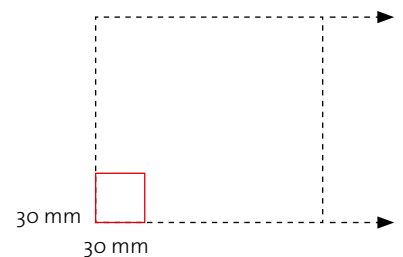
Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5,700 K)	850 nm	880 nm	950 nm
	Ultraviolet		Visible light						Infrared			
AL	●	●	●	●	●	●	●	●	●	●	●	●
DL			●	●	●	○	●	●	●	●	●	●
FAL		●	●	●	●	●	●	●	●	●	●	●
FALRL		●	●	●	●	●	●	●	●	●	●	●
FALKD		●	●	●	●	●	●	●	●	●	●	●
FAL modular			●	●	●	●	●	●	●	●	●	●
FDL			●	●	●	○	●	●	●	●	●	●
FDL modular			●	●	●	○	●	●	●	●	●	●
FDLRL			●	●	●	○	●	●	●	●	●	●
FDLKD			●	●	●	●	●	●	●	●	●	●

● Available ○ on request

NOTE

For the 60x90 model, Fresnel lenses, diffusers and polarisers are also available as accessories

LUMINOUS FIELD SIZES



- Modular area illumination: max. illumination area 30 x 1200 mm or 100 modules (1 module = 30 x 30 mm illumination area)

RING LIGHTS

SERIES

...RK613
...RK1220

...RK2036
...RK3652

...RK5268
...RK2029

...RK2037
...RK3950

...RK3056

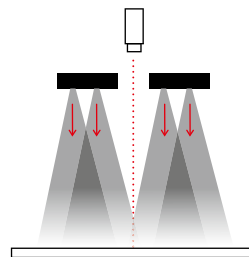
APPLICATIONS

- ... Automotive
 - . Read codes and characters
 - . Positional determination of components
 - . Inspect attributes
- ... Semiconductor industry
 - . Positional determination of fiducial markers
 - . Solder point inspection
- ... Food industry
 - . Contour and shape control
 - . Check and read identity codes

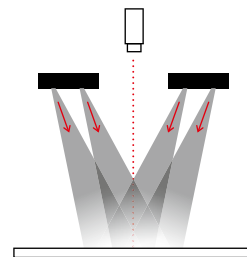
PROPERTIES

- ... Powerfully illuminating coaxial universal lighting for incident light applications
- ... Compact design with integrated controller
- ... Extensive accessories for quick and easy adapting of the light direction to the inspection task
- ... It is possible to combine different illumination area sizes with one another so that, for example, you have a 3-channel RGB light source or a round planar light with camera view

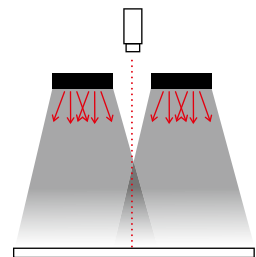
LIGHTING PRINCIPLE



DIRECTED
Coaxial incident light (without accessories)






DIRECTED, FOCUSED
Focusing of the light rays through a Fresnel lens

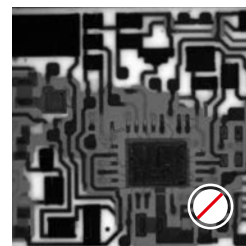
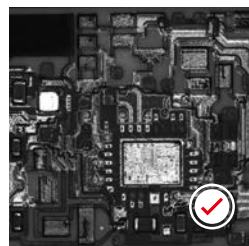


DIFFUSE
Homogeneous illumination without interfering reflections by attaching diffusers

ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT

INSPECTION OF CIRCUIT BOARD COATED WITH LACQUER



LEFT
Reflections predominate on the components

RIGHT
Suppression of all reflective surfaces by means of light and lens polarisation when extinguishing (polarised ring light)



WAVELENGTHS

Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5,700 K)	850 nm	880 nm	950 nm
	Ultraviolet		Visible light						Infrared			
RK613		●		●	●	●	●	●	●	●		●
RK1220		●		●	●		●	●	●	●		●
RK2036		●		●	●	●	●	●	●	●		●
RK3652		●		●	●	●	●	●	●	●		●
RK5268		●		●	●	●	●	●	●	●		●
RK2029		●		●	●	○	●	●	●	●	●	●
RK2037	●	●		●	●	○	●	●	●	●	●	●
RK3950				●	●	○	●	●	●	●	●	●
RK3056	●	●		●	●	○	●	●	●	●	●	●

● Available ○ on request

ACCESSORIES

CABLE

- Available in various lengths, optionally with angled plug connectors for easy set-up
- Suitable for RK2036, RK3652, RK5268



MOUNTING ADAPTOR

- For mounting directly on the lenses
- Suitable for all series



DIFFUSERS

- Diffuser discs in different intensities
- Homogeneous light, no disruptive reflections
- Suitable for all series



FRESNEL LENSES

- For focusing or defocusing on a specific area to be illuminated
- Suitable for all series

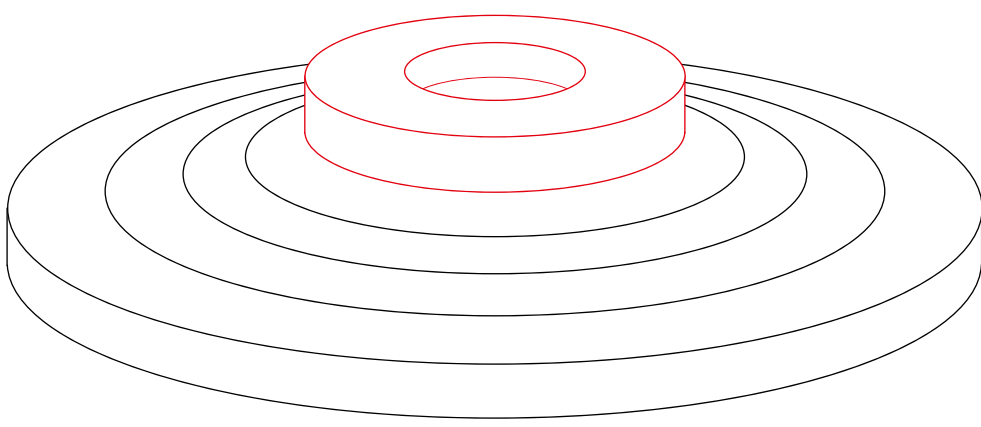


POLARISERS

- Influences the direction of propagation of the lightwaves
- Prevents interfering reflections on the test object
- Suitable for all series



OUTER AND INNER DIAMETERS



12 mm INNER DIAMETER 104 mm
 26 mm OUTER DIAMETER 136 mm

DARK FIELD LIGHTS

SERIES ...RR19/8 ...RR30/23 ...RR3950 ...RR64/22

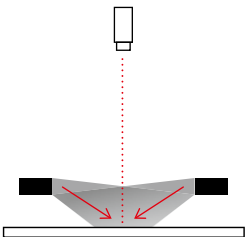
APPLICATIONS

- ... Automotive
 - . Detection of surface flaws
 - . Reading of embossed codes and characters
- ... Electronics industry
 - . Solder point inspection
 - . Positional determination
- ... Metalworking industry
 - . Embossing control
 - . Inspection of cut and stamped edges

PROPERTIES




- ... Ring-shaped, radial LEDs
- ... Due to the lighting properties (lighting principle), the lighting is located very close to the object
- ... Even the smallest bumps and pits become visible

LIGHTING PRINCIPLE

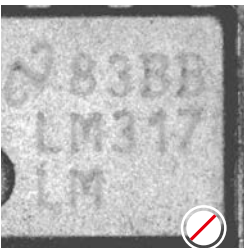


! With dark field array, only the light rays deflected to the surface structure are directed into the lens and camera. For this, the light source is always located close above the object.

ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT

READING OF LASER MARKINGS ON SEMICONDUCTORS



LEFT
Recording with targeted area illumination

RIGHT
Dark field array



WAVELENGTHS

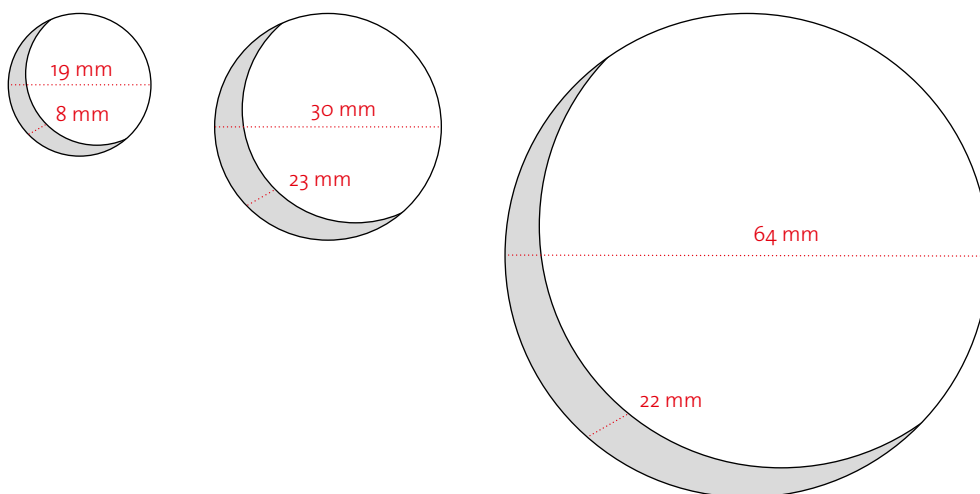
Series	Light colour												
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5700 K)	850 nm	880 nm	950 nm	
	Ultraviolet			Visible light						Infrared			
RR19/8				●	●		○	●	●		●	●	
RR30/23				●	●		○	●	●		●	●	
RR3950				●	●			●	●		●		
RR64/22				●	●		●	●	●	●	●	●	

● Available ○ on request

TIP

With the bar lighting of the 7 series and 14 series, you can attain the desired illumination area size for your individual inspection task. The bar lights are mounted in a 4-sided bracket to form a square dark field. The opposite sides can be selected in lengths from 25 mm to 250 mm.

ILLUMINATION AREA DIMENSIONS

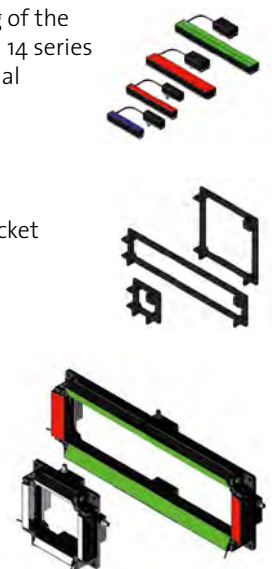


FOUR-SIDED ILLUMINATION FOR DARK FIELD APPLICATIONS

Bar lighting of the 7 series and 14 series with external controllers

+
4-sided bracket

=



DOMELIGHTS

SERIES

...SFD30/9

...SFD42/12

...RD3950

...SF64

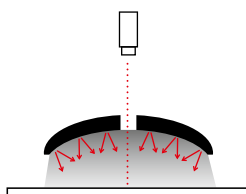
APPLICATIONS

- ... Glass industry
 - . Inspecting the mouths of hollow glass
 - . Inspecting bottle bases
- ... Automotive
 - . Surface inspection
 - . Presence control
- ... Pharmaceutical
 - . Checking and reading identification codes
 - . Inspection and position control of closing caps

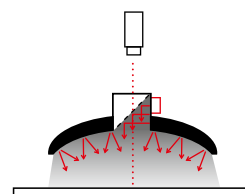
PROPERTIES

- ... Shadow-free and homogeneous illumination of the inspection area with an extremely high luminosity (500 W/m²)
- ... Use of power LEDs
- ... Compact design height
- ... Also available in deep blue and infrared as standard

LIGHTING PRINCIPLE



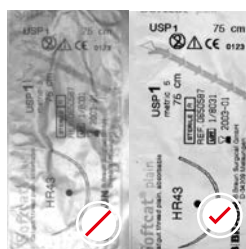
SHADOW FREE INCIDENT LIGHT
The so-called "cloudy day" lighting produces an evenly distributed light from the half-space over the test object



FULL DOME
A coaxial mirror light is located between the camera/lens and dome. Advantage: the shadows that occur with extremely reflective surfaces are prevented by the camera view

ELECTRONIC VERSIONS

- PLUG & PLAY
- ADJUSTABLE LIGHTING
- WITHOUT INTEGRATED CONTROL UNIT



TASK
Read characters on film label

LEFT
Disruptive reflections in diffuse light

RIGHT
Suppression of disruptive reflections by means of dome lighting



TASK
Reading of embossed characters on a hex nut

LEFT
Camera view of the dome lighting causes shadows to form in the marked area

RIGHT
Equal illumination of the marked area by extending the dome lighting with a coaxial mirror light (full dome)

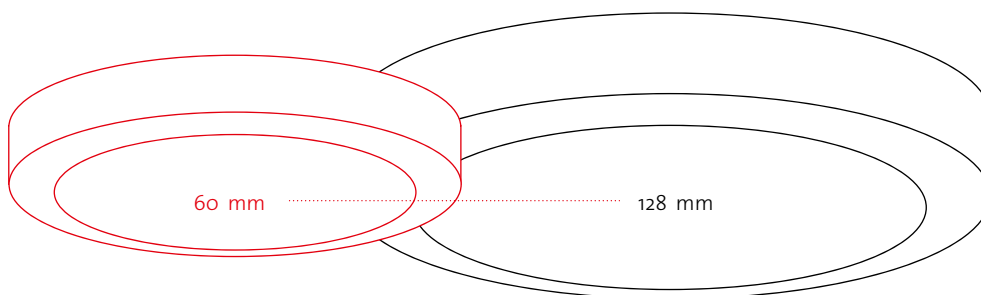


WAVELENGTHS

Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5700 K)	850 nm	880 nm	950 nm
	Ultraviolet			Visible light						Infrared		
SFD30/9			●	●	●	○	●	●	●	●		●
SFD42/12			●	●	●	○	●	●	●	●		●
RD3950				●	●		●	●	●	●	●	●
SF64								●				

● Available ○ on request

ILLUMINATION AREA DIAMETER



ACCESSORIES

CABLE

- Available in various lengths, optionally with angled plug connectors for easy set-up
- Suitable for SFD30/9 and SFD42/12



FULL DOME

- Beam splitter unit STE30x30 or STE60x60 in combination with the DL30x30 or DL60x60 area lights
- Suitable for SFD30/9 and SFD42/12



SPOT LIGHTS

SERIES

... ULS6

... RAL10

... SPOT50

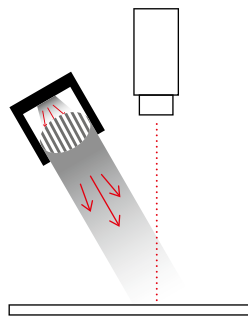
APPLICATIONS

- ... Pharmaceutical
 - . Recognition and reading of diverse codes
 - . Presence and completeness control
- ... Automotive
 - . Targeted illumination for presence control of small components in large assemblies (fitting)
 - . Light direction in the working area of robots
- ... Semiconductor industry
 - . Positional determination of fiducial markers
 - . Read codes and characters

PROPERTIES




- ... LED light source produces a focused spot of light for working distances of up to two metres
- ... High luminosity power even at considerable object distances
- ... Small and light (22 g) spot light source, suitable for mounting on moving machine parts, e.g. a robot arm
- ... Integrated focusing optics for adjusting illumination area and working distance

LIGHTING PRINCIPLE



DIRECTED
Focused, targeted illumination of the inspection area

ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT



WAVELENGTHS

Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5700 K)	850 nm	880 nm	950 nm
	Ultraviolet			Visible light						Infrared		
ULS6		●	●	●	●	○	●	●	●	●	○	●
RAL10			●	●	●	○	●	●	●	●	○	●
SPOT50	○	●	○	●	●	○	●	●	●	●	●	●

● Available ○ on request

ACCESSORIES

CABLE

- Available in various lengths, optionally with angled plug connectors for easy set-up
- Suitable for RAL10/ULS6



DIFFUSERS

- Diffuser discs in different intensities
- Homogeneous light, no disruptive reflections
- Use as extremely bright transmitted light
- Suitable for RAL10



SPOTLIGHT ADAPTER

- The ULS6 light direction is adaptable by means of front lens and C-mount lens
- Suitable for ULS6

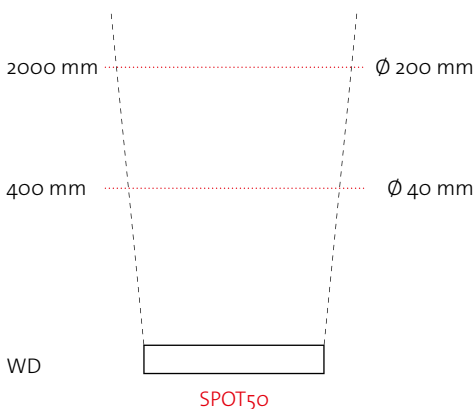
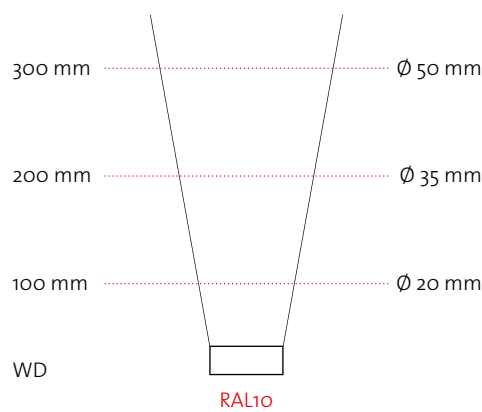
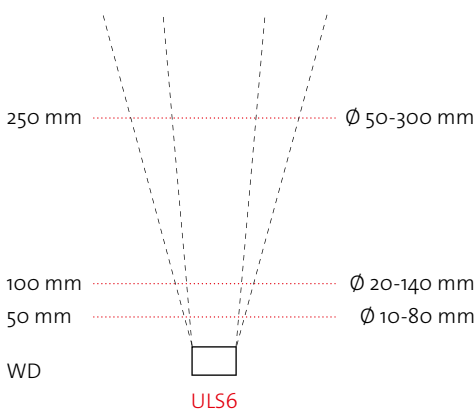


POLARISERS

- Influences the direction of propagation of the lightwaves
- Prevents interfering reflections on the test object
- Suitable for RAL10



ILLUMINATION AREA DIAMETER



ULS6
Light exit diameter 6 mm

RAL10
Light exit diameter 10 mm

SPOT50
Light exit diameter 44 mm

WD: Working distance

TELECENTRIC LIGHTS

SERIES

... TZB10
... TZB30

... TZB51
... TZB60

... TZB95
... TZB130

APPLICATIONS

- ... Glass industry
 - . Edge and foreign object detection
 - . Shape control
- ... Medical technology
 - . Inspection of miniature components and structures
- ... Pharmaceutical
 - . High precision measurement tasks
- ... Automotive
 - . Control of the dimensional accuracy and outer contour
 - . Threading inspection

PROPERTIES




- ... Directed light source with parallel light direction
- ... For use in combination with telecentric lenses
- ... Illumination area diameters are attuned to the telecentric lenses of the vicotar® brand
- ... Suitable for flash operation in the microsecond range
- ... Highest precision measurement of reflective and transparent objects

LIGHTING PRINCIPLE

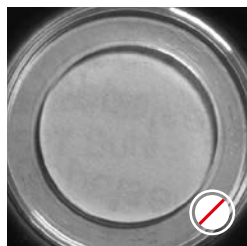


TELECENTRIC TRANSMITTED LIGHT
The telecentric lighting is located behind the test object

ELECTRONIC VERSIONS

-  PLUG & PLAY
-  ADJUSTABLE LIGHTING
-  WITHOUT INTEGRATED CONTROL UNIT

READING OF THE INNER BORDER MARKING ON A BLU-RAY DISC



With diffuse incident lighting no embossing is visible



The embossing on the Blu-Ray is recognisable thanks to telecentric incident lighting



WAVELENGTHS

Series	Light colour											
	365 nm	395 nm	455 nm	470 nm	525 nm	590 nm	617 nm	633 nm	White (5700 K)	850 nm	880 nm	950 nm
	Ultraviolet		Visible light						Infrared			
TZB10				●	●			●	●	○	●	○
TZB30				●	●			●	●	○	●	○
TZB51				●	●			●	●	○	●	○
TZB60				●	●			●	●	○	●	○
TZB95				●	●			●	●	○	●	○
TZB130				●	●			●	●	○	●	○

● Available ○ on request

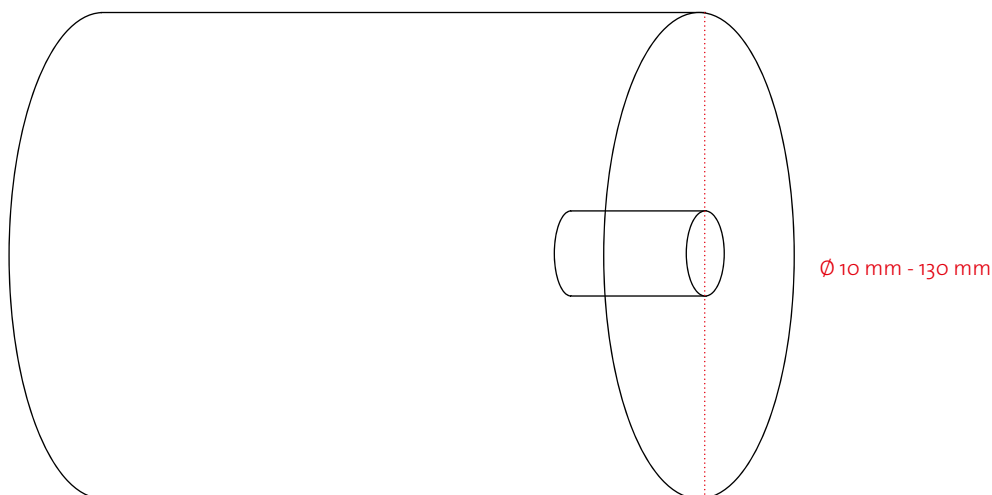
COMBINED LIGHTING

TELECENTRIC INCIDENT LIGHT

- Beam splitter unit of the STE30 and STE60 series



LUMINOUS FIELD DIAMETERS



ACCESSORIES

SAFETY GLASSES AND POLARISING FILTER

- Protect the front lens against contamination and mechanical influence
- Suitable for all series



VISION & CONTROL GMBH

Mittelbergstraße 16 D-98527 Suhl Germany

Phone +49 (0)3681/7974-0 Fax +49 (0)3681/7974-44

www.vision-control.com