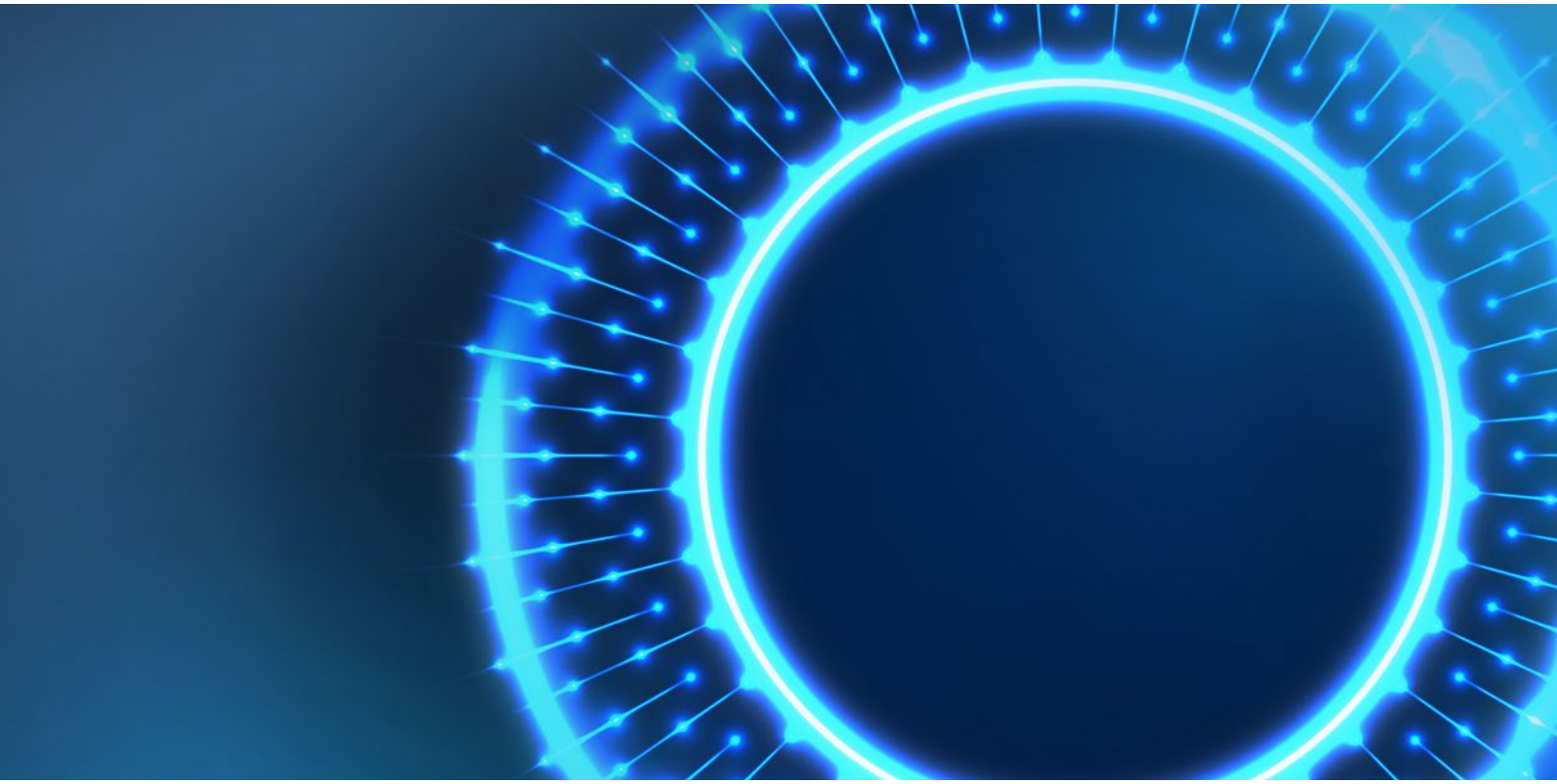
LATAB
Industrial LED Lighting



LED Lighting for Machine Vision

Product Catalog

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LED Lighting for Machine Vision

LAT elektronik AB (LED Array Technology) was founded in 1988 in Stockholm, Sweden. Starting as a consultancy for image processing technology, the company soon became a specialist for customer-specific lighting solutions in the area of machine vision. As part of the German Polytec Organization (www.polytec.com), LATAB today offers an outstanding variety of standard products and is known for its high degree of flexibility and short delivery times, even for customer-specific developments.

Why Choose LATAB Products?

- All products are “Made in Sweden” and meets the highest quality demands
- Individual requirements are largely met by the modularity of the standard program
- All lights can be operated in either continuous/switching and strobe modes
- Lights and controllers are easy and user-friendly to operate
- Very flexible solutions
- Very short delivery times
- Application-orientated advice and long-term service

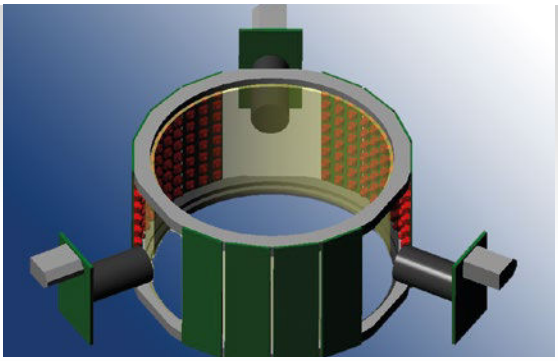
Support

Integration into the international Polytec Organization guarantees world-wide support for LATAB products. Experienced engineers from the machine vision industry help customers make the best choice of products and if required provide support in the integration of machine vision systems.

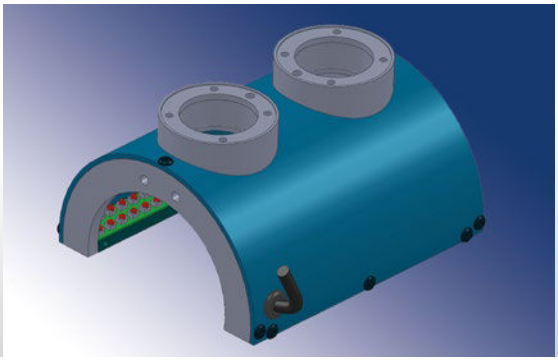
Customer-specific Engineering

Customer-specific developments and adaptations are a core part of LATAB's business – at near standard prices of course, and with short project delivery times. You name it, we'll make it!

Design skills:
- CAD engineering
- Electronics development
- Thermal management



Customer-specific circular back light with 3 camera holes



Customer-specific tunnel light with light colors red and UV with 2 camera holes

Evaluation Kits

Different environmental conditions for machine vision applications can often make the choice of suitable lighting difficult. That's why in many cases "Try before you buy" is the way to go.

LATAB provides demonstration units of potentially suitable lighting heads and controllers to help the customer decide on the best lighting for his practical situation.

!

- Step files available on request.
- We reserve the right to make changes to products without notification.

Warranty

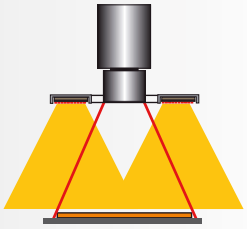
A warranty period of one year applies to all light heads and controllers under the following operating conditions:
- **Operating temperature**
  +5 °C to +40 °C (41 °F to +104 °F)
- **Storage temperature**
  -40 °C to +90 °C (-40 °F to +194 °F)
- **Relative humidity**
  max. 80 %, non-condensing
- **Geographical height of operating location**
  up to 2000 m above sea level
- **Pollution degree**
  2, only non-conductive pollution occurs. Except that occasionally a temporary conductivity caused by condensation is to be expected.
- **Definition of a defect light head**
  A light head is defect if the brightness decreases to 50 % of the original luminosity.
- **Restriction of Warranty**
  Operation without LATAB controller causes a loss of warranty!

Lighting Techniques

Ring Light

- Illuminate flat, diffused surfaces
- Inspection of circular objects
- When direct attachment to lens is required
- Standard sizes: 44 to 345 mm outer diameter
- Optional: diffusers and polarization filters

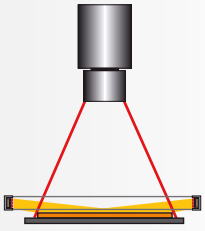
Application
- Homogeneous/directed lighting
- Defects on surfaces
- OCR
- Print control
- Inspection of assembly
- Part recognition



Dark Field Light

- Creates low angle light and enhances contrast of surface features
- Standard sizes: 25 to 276 mm outer diameter
- Small working distance

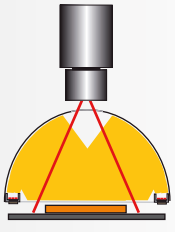
Application
- Detection of edges, defects and contours



Dome Light/Tunnel Light

- Diffused (“cloudy day”) and shadow-free lighting
- Standard sizes dome: 44 to 345 mm outer diameter
- Standard sizes tunnel: 119 to 371 mm length
- Small working distance

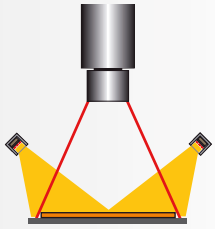
Application
- Inspection of specular and diffuse objects
- OCR
- Print control
- Label inspection



Line Light

- Can also be used as a dark field light to create low angle light
- Standard length: 50 to 446 mm
- Optional: diffusers
- One, two or square lines are available

Application
- Homogeneous/directed lighting
- Defects on surfaces
- OCR
- Print control
- Inspection



Back Light

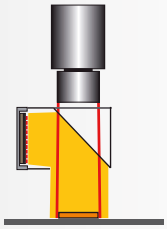
- To highlight the contour of a flat object
- For opaque and transparent objects
- Ideal for precise measurements
- Standard sizes: 51 x 48 to 207 x 516 mm

Application
- Measure outside dimension of objects
- Locate parts or mounting holes
- Positioned under the object
- Homogeneous lighting

Coaxial Light

- Diffused and shadow-free lighting
- Creates contrast between specular and diffuse surfaces
- Short working distance

Application
- For reflecting objects
- Print control



LED Ligthing Heads

General Features

LATAB LED lightings are devices that can be used for a great variety of vision and industrial applications, e.g. inspection, testing and robot control. The LED lighting heads feature a superior light intensity and smooth lighting combined with long lifetime. The LATAB product family is highly modular and can be used in various combinations to optimize the illumination.

All modules, light heads and controllers are made for industrial applications. For this reason they are built in solid aluminium housings. All lights can be operated either in continuous/switching or strobe mode. The lights are robust, small in size and easy to install. Just connect the light head to a controller and the light intensity will be at 100 % by default.

A Wide Product Range

The modular design of LATAB LED lighting heads permits a range of more than 3,000 standard products. Besides the design of the lighting head, the key selection criteria are continuous/switching or strobe mode lighting, different LED colors and innumerable sizes, mounts and cable-configurations. Accessories such as polarizing filters and brackets also form part of the product range.

The standard lighting heads are based upon high intensive LEDs, available in a wide range of types and sizes: Ring-, dome-, tunnel-, front-, back-, spot-, line-, dark field-, coaxial-, rectangular and custom designed lighting heads. They are available in different colors, RGB (red/green/blue) as well as IR and UV.

The standard colors are:

- White
- Red (617 nm)
- Infrared (880 nm)
- Blue (465 nm)
- Green (520 nm)
- RGB (red/green/blue)
- Ultraviolet (395 nm)

Lighting Head Series

Today LATAB applies high intensive SMD type LEDs (surface mounted device). Lighting heads based on these LED type are named S-series ("S" as first character in the product code).

The well-established H-series lighting heads are based upon the classic hole mounted LEDs ("P" as first character in the product code). They were standard before the introduction of SMD type LEDs. The H-series is not listed in the catalog any more. These lighting heads are still available on request. The customer's investment protection is a key point in the long-lasting partnership with LATAB customers.

!

Guideline for Longer Lifetime of LED Lighting Heads

LEDs are long-life components; however the effect of heating will decrease their lifetime. To increase the lifetime, please keep the following in mind when choosing LED lighting:

- **Controller mode for longer lifetime in this order:**
  - Strobe mode (strobe controller)
  - Long flash mode (continuous/switching mode controller)
  - Continuous/switching mode (continuous/switching mode controller)
- **Red LEDs feature the longest lifetime**
- **Adjust light intensity to lowest usable level**
- **Keep ambient temperature low**

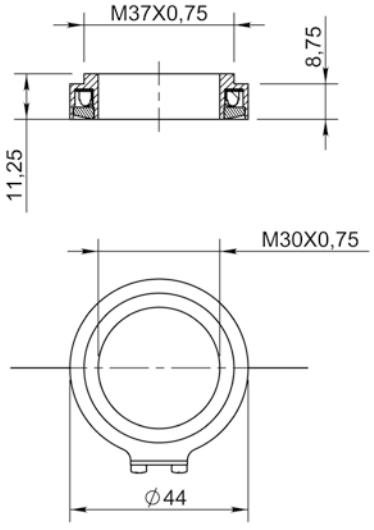
Ring Lights with Lens Thread

This ring light can be easily mounted in two ways:

- By a standard lens adapter with a lens thread of 37 x 0.75 mm. Lens adapters for different lens threads are available on request.
- By a small bracket (order no. LAD3 7218)

The best evenness of light will be achieved at a working distance of 20-25 mm. A diffuser is included.

Mechanical Dimensions



Step files available on request

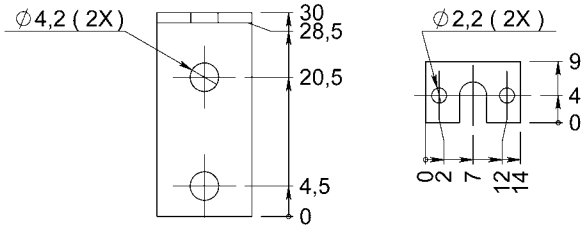
Order Information

Order number	Sizes (mm)		Working distance (mm)	Controller[2]	
	outer ø	inner ø		continuous/ switching mode	strobe mode
SAX3 1044	44	29	20-25	1 A	8 A

[2] See “Controller selection” for details

Options

- Cable length and type see “Order options”
- Bracket LAD3 7218:



Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red ring light: SAH3 1044

Ring Lights

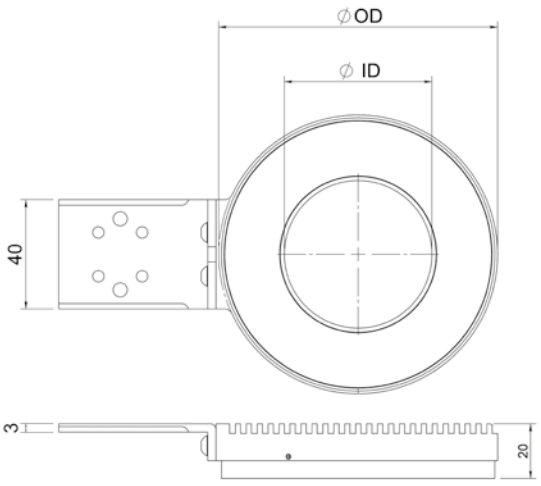
Ring lights provide uniform and shadow-free lighting. A diffuser (removable) for homogeneous light is included. In order to avoid reflection, some ring lights can be used in combination with polarization filters.

Brackets are included (no. SXX3 010213, for details see lighting head brackets).

The standard light beam angle is 12°.

The special RGB lights are built with high-power three-chips LEDs red, green, and blue, enabling the use of each color separately or in combination. White light can be achieved by setting each channel to the same intensity level.

Mechanical Dimensions



Step files available on request

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red ring light: SAH3 1078

Order Information Single Color Lights

Order number	Sizes (mm)		Working distance (mm) approx.	Controller[2]	
	outer ø	inner ø		continuous/ switching mode	strobe mode
SAX3 1044	see ring light with lens thread				
SAX3 1078	78	34	50	1 A	8 A
SAX3 1102	102	54	80	1 A	8 A
SAX3 1132	132	84	100	1 A 3 A[3]	8 A 24 A[3]
SAX3 1162	162	114	140	1 A 3 A[3]	8 A 24 A[3]
SAX3 1202[4]	202	155	180	3 A	24 A
SAX3 1348[4]	345	299	300	3 A	24 A

Order Information RGB Lights

Order number	Sizes (mm)		Controller[5]	
	outer ø	inner ø	continuous/ switching mode	strobe mode
RGB3 1078	78	34	1 A	8 A
RGB3 1102	102	54	1 A	8 A
RGB3 1132	132	84	1 A	8 A
RGB3 1162	162	114	1 A	8 A
RGB3 1202[4]	202	155	1 A	8 A
RGB3 1348[4]	345	299	on request	on request

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV
[4] Second bracket (SXX3 010213) included for more stability
[5] For RGB lights 4 channel controllers are required

Options

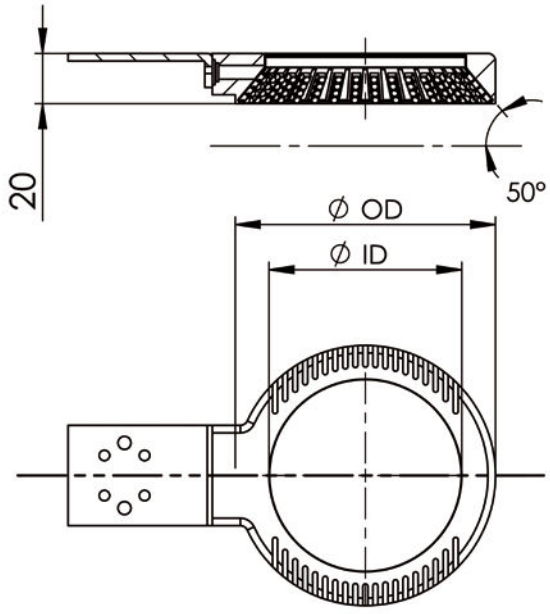
- Cable length and type see “Order options”
- Polarization options see “Polarization filters”

Ring Lights with 50° Light Beam Angle

These ring lights are characterized by a 50 degree inward aligned light output which places them between conventional ring lights and dark field lights.

This kind of illumination is used for example for shadow-free lighting of conic objects. Bracket is included (no. SXX3 010213, for details see lighting head brackets).

Mechanical Dimensions



Step files available on request

Order Information

Order number	Sizes (mm)		Controller[2]	
	outer ø	inner ø	continuous/ switching mode	strobe mode
SAX3 3104	104	76	1 A	8 A
SAX3 3184	184	157	3 A	24 A

[2] See “Controller selection” for details

Options

- Cable length and type see “Order options”
- Diffuser see “Order options”
- A clear diffuser to protect the LEDs is also available

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	

[1] Example for red ring light: SAH3 3104

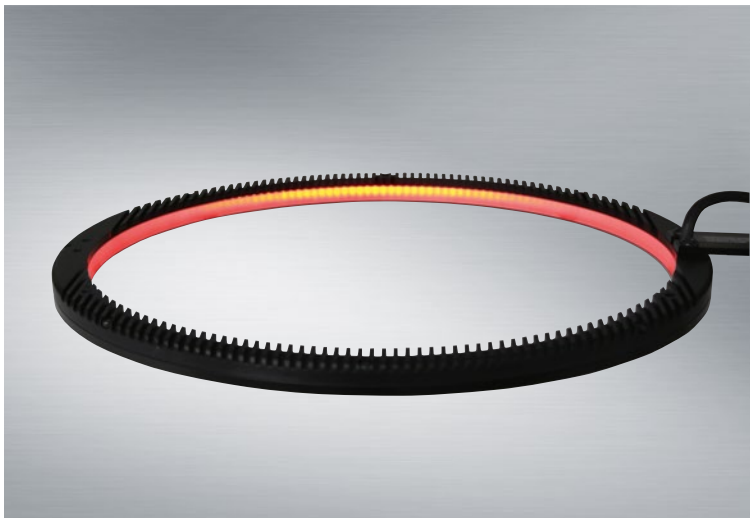
Dark Field Lights

Dark field lights are ideal for detecting edges and contours.

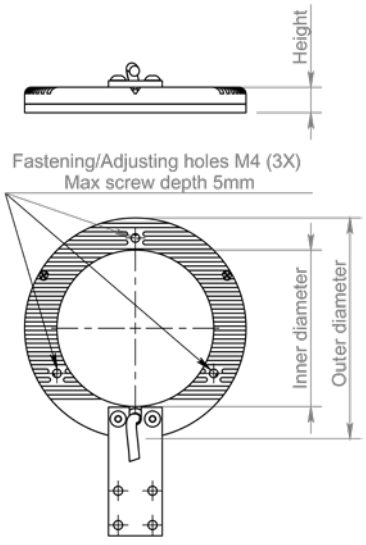
The standard light beam angle is 80°.

The dark field lights have a diffuser for better evenness of illumination.

Bracket LAD3 4011 is included (for details see “Lighting head brackets”).



Mechanical Dimensions



Step files available on request

Order Information

Order number	Sizes (mm)			Light beam angle	Controller[2]	
	outer ⌀	inner ⌀	height		continuous/ switching mode	strobe mode
PAD3 4025[3,5]	25	15	9.5	5°	1 A	8 A
SAX3 4072	72	42	13.5	10°	1 A	8 A
SAX3 4103	103	73	13.5	10°	1 A	8 A
SAX3 4166	166	136	13.5	10°	1 A	8 A
SAX3 4213	213	183	13.5	10°	1 A 3 A[4]	8 A 24 A[4]
SAX3 4276	276	246	13.5	10°	1 A 3 A[4]	8 A 24 A[4]

[2] See “Controller selection” for details
[3] Available only in red light color
[4] For light colors white, blue, green and UV
[5] Screw-in depth (M1,6) max. 2 mm

Options

- Cable length and type see “Order options”
- Custom light beam angle see “Order options”

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red dark field light: SAH3 4H072

Dome Lights

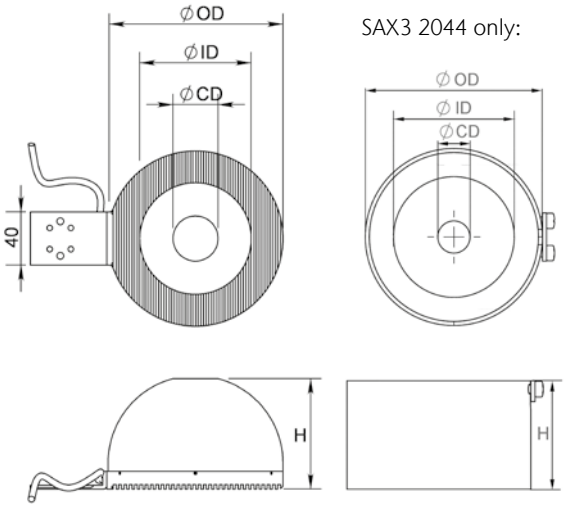
The dome lights are available in a wide range of sizes.

Dome lights provide highly shadow-free lighting in small working distances and avoid reflection from reflective objects more than ring lights.

In order to prevent a camera hole shadow it is possible to use a coaxial light together with the dome light.

Brackets are included (no. SXX3 010213, for details see “Lighting head brackets”) except for SAX3 2044.

Mechanical Dimensions



SAX3 2044 only:

Step files available on request

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red dome light: SAH3 2078

Order Information Single Color Lights

Order number	Sizes (mm)				Controller[2]	
	outer ø	inner ø	camera hole ø	height	continuous/ switching mode	strobe mode
SAX3 2044	44	30	8	26	1 A	8 A
SAX3 2078	78	34	24	57	1 A	8 A
SAX3 2102	102	54	30	69	1 A	8 A
SAX3 2132	132	84	34	83	1 A 3 A[3]	8 A 24 A[3]
SAX3 2162	162	114	50	100	1 A 3 A[3]	8 A 24 A[3]
SAX3 2202[4]	202	155	65	124	3 A	24 A
SAX3 2348[4]	345	299	100	190	3 A	24 A

Order Information RGB Lights

Order number	Sizes (mm)				Controller[5]	
	outer ø	inner ø	camera hole ø	height	continuous/ switching mode	strobe mode
RGB3 2078	78	34	24	57	1 A	8 A
RGB3 2102	102	54	30	69	1 A	8 A
RGB3 2132	132	84	34	83	1 A	8 A
RGB3 2162	162	114	50	100	1 A	8 A
RGB3 2202[4]	202	155	65	124	1 A	8 A
RGB3 2348[4]	345	299	100	190	on request	on request

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV
[4] Second bracket (SXX3 010213) included for more stability
[5] For RGB lights 4 channel controllers are required

Options

- Cable length and type see “Order options”

Tunnel Lights

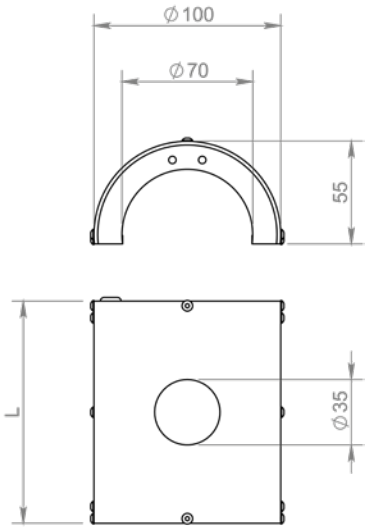
Tunnel lights, like dome lights, provide shadow-free lighting and are better at avoiding reflections from objects than are ring lights.

The most even illumination will be achieved by placing the light as close to the object as possible.

In order to prevent a camera hole shadow it is possible to use a coaxial light together with the tunnel light.

Optional brackets can be mounted at either end of the tunnel.

Mechanical Dimensions



Step files available on request

Order Information

Order number	Tunnel length (mm)	Controller[2]	
		continuous/ switching mode	strobe mode
SAX3 5203	119	1 A	8 A
SAX3 5204	155	1 A	8 A
SAX3 5205	191	1 A	8 A
SAX3 5206	227	1 A 3 A[3]	8 A 24 A[3]
SAX3 5207	283	1 A 3 A[3]	8 A 24 A[3]
SAX3 5208	299	1 A 3 A[3]	8 A 24 A[3]
SAX3 5209	335	1 A 3 A[3]	8 A 24 A[3]
SAX3 5210	371	1 A 3 A[3]	8 A 24 A[3]

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red tunnel light: SAH3 5203

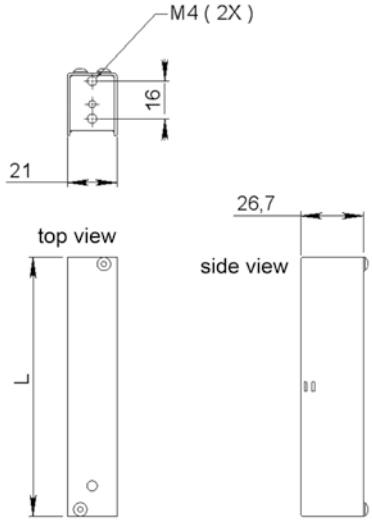
Options

- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- Customized camera holes on request

Line Lights – Single Line

Front line lights are built in modules from 50 to 446 mm, other dimensions on request. A diffuser for evenness of illumination is available optionally.

Mechanical Dimensions



Step files available on request

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red line light: SAH4 1050

Order Information

Order number	Length (mm)	Controller[2]	
		continuous/ switching mode	strobe mode
SAX4 1050	50	1 A	8 A
SAX4 1086	86	1 A	8 A
SAX4 1122	122	1 A	8 A
SAX4 1158	158	1 A	8 A
SAX4 1194	194	1 A	8 A
SAX4 1230	230	1 A	8 A
SAX4 1266	266	1 A	8 A
SAX4 1302	302	1 A	8 A
SAX4 1338	338	1 A 3 A[3]	8 A 24 A[3]
SAX4 1374	374	1 A 3 A[3]	8 A 24 A[3]
SAX4 1410	410	1 A 3 A[3]	8 A 24 A[3]
SAX4 1446	446	1 A 3 A[3]	8 A 24 A[3]

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV

Options

- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- Diffuser see “Order options”

Line Lights – Two Lines

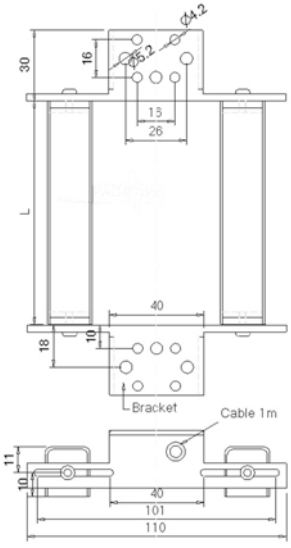
Two front line lights, which are based on the single line light (SAX4 1XXX), are available in modules from 50 to 446 mm, other dimensions on request.

The aluminium housing can be adjusted for width (40 to 101 mm) as well as the angle of the lights.

So a custom adaption to applications is very easy.

A diffuser for evenness of illumination is available optionally.

Mechanical Dimensions



Step files available on request

Order Information

Order number	Length (mm)	Controller[2]	
		continuous/ switching mode	strobe mode
SAX4 2050	50	1 A	8 A
SAX4 2086	86	1 A	8 A
SAX4 2122	122	1 A	8 A
SAX4 2158	158	1 A 3 A[3]	8 A 24 A[3]
SAX4 2194	194	1 A 3 A[3]	8 A 24 A[3]
SAX4 2230	230	3 A	24 A
SAX4 2266	266	3 A	24 A
SAX4 2302	302	3 A	24 A
SAX4 2338	338	3 A	24 A
SAX4 2374	374	3 A	24 A
SAX4 2410	410	3 A	24 A
SAX4 2446	446	3 A	24 A

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red line light: SAH4 2050

Options

- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- Diffuser see “Order options”
- Different spacer width between lights:
  40 - 101 mm width: standard
  40 - 90 mm width: add “B90” to order code
  70 - 190 mm width: add “B190” to order code
  130 - 290 mm width: add “B290” to order code

Line Lights – Square Lines

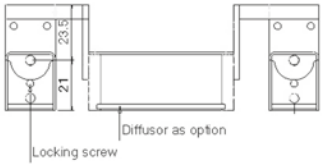
Four front line lights, which are based on the single line light (SAX4 1XXX), are avaliable in modules from 50 to 446 mm, other dimensions on request.

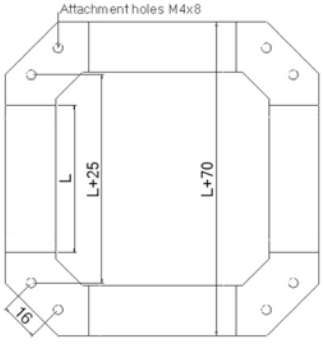
The aluminium housing allows for the adjustment of the angle of the lights. So a custom adaption to applications is very easy.

Other rectangular combinations on request.

A diffuser for evenness of illumination is available optionally.

Mechanical Dimensions





Step files available on request

Order Information

Order number	Length (mm)	Controller[2]	
		continuous/ switching mode	strobe mode
SAX4 4050	50	1 A	8 A
SAX4 4086	86	1 A	8 A
SAX4 4122	122	3 A	24 A
SAX4 4158	158	3 A	24 A
SAX4 4194	194	3 A	24 A
SAX4 4230	230	3 A	24 A
SAX4 4266	266	3 A	24 A
SAX4 4302	302	3 A	24 A
SAX4 4338	338	on request	on request
SAX4 4374	374	on request	on request
SAX4 4410	410	on request	on request
SAX4 4446	446	on request	on request

[2] See “Controller selection” for details

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red line light: SAH4 4050

Options

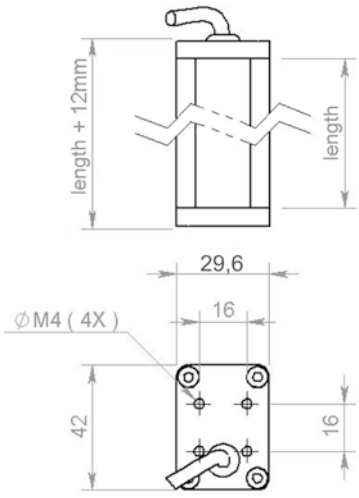
- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- Diffuser see “Order options”

Line Lights with Fresnel Lens

This line light series is designed for line scan camera applications. It produces a very thin light beam of 4 mm width.

The working distance is 40 mm. The light lengths range from 58 to 788 mm. Custom lengths on request.

Mechanical Dimensions



Step files available on request

Color Information

Replace "X" in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red line light: SAH4 6058

Order Information

Order number	Length (mm)	Controller[2]	
		continuous/ switching mode	strobe mode
SAX4 6058	58	1 A	8 A
SAX4 6097	97	1 A	8 A
SAX4 6135	135	1 A	8 A
SAX4 6173	173	1 A	8 A
SAX4 6212	212	1 A	8 A
SAX4 6250	250	1 A	8 A
SAX4 6289	289	1 A	8 A
SAX4 6327	327	1 A	8 A
SAX4 6365	365	1 A	8 A
SAX4 6404	404	1 A	8 A
SAX4 6442	442	1 A	8 A
SAX4 6481	481	1 A	8 A
SAX4 6519	519	3 A	24 A
SAX4 6557	557	3 A	24 A
SAX4 6596	596	3 A	24 A
SAX4 6634	634	3 A	24 A
SAX4 6673	673	3 A	24 A
SAX4 6711	711	3 A	24 A
SAX4 6749	749	3 A	24 A
SAX4 6788	788	3 A	24 A

[2] See "Controller selection" for details

Options

- Cable length and type see "Order options"
- Bracket options see "Lighting head brackets"

Front Lights 80 x 56 mm

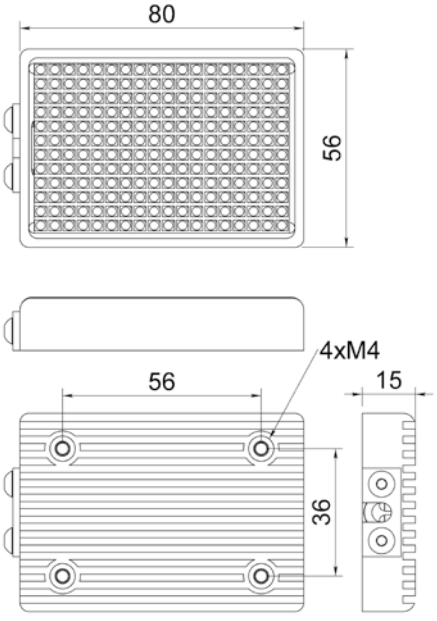
This front light suits most applications.

A diffuser for evenness of illumination is available as an option.

The effective light area is 72 x 48 mm.

Four M4 screws serve for securing the lighting head or a bracket (SXX3 010213).

Mechanical Dimensions



Step files available on request

Order Information

Order number	Color	Controller[1]	
		continuous/ switching mode	strobe mode
SAH5 1011	Red (617 nm)	1 A	8 A
SAW5 1011	White	3 A	24 A
SAR5 1011	IR (880 nm)	1 A	8 A
SAB5 1011	Blue (465 nm)	3 A	24 A
SAG5 1011	Green (520 nm)	3 A	24 A
SAU5 1011	UV (395 nm)	1 A	8 A

[1] See “Controller selection” for details

Options

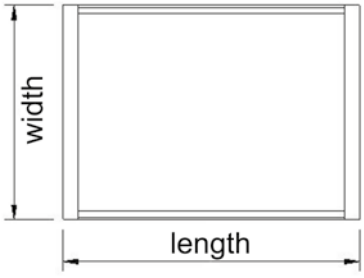
- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- Diffuser see “Order options”

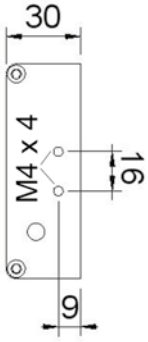
Front/Back Lights

Due to its high intensive LEDs this light series can be used either as front light or as back light. For a front light application the diffuser is replaced by an acrylic clear glass cover.

Size options range from 51 x 48 to 207 x 516 mm (outer dimensions).

Mechanical Dimensions





Step files available on request

Color Information		
Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red back light: SAH7 0602

Options

- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”
- For front light applications add “C” (acrylic clear glass cover) to order code, i.e. SAH7 0602C

The table states length (columns) and width (rows) of the outer dimension.
The effective light area is reduced by 12 mm in length and 7 mm in width.

Order Information for Red and IR Lights

mm	48	84	120	156	192	228	264	300	336	372	444	516
51	SAX7 0601	SAX7 0602	SAX7 0603	SAX7 0604	SAX7 0605	SAX7 0606	SAX7 0607	SAX7 0608	SAX7 0609	SAX7 0610	SAX7 0612	SAX7 0614
63	SAX7 0801	SAX7 0802	SAX7 0803	SAX7 0804	SAX7 0805	SAX7 0806	SAX7 0807	SAX7 0808	SAX7 0809	SAX7 0810	SAX7 0812	SAX7 0814
75	SAX7 1001	SAX7 1002	SAX7 1003	SAX7 1004	SAX7 1005	SAX7 1006	SAX7 1007	SAX7 1008	SAX7 1009	SAX7 1010	SAX7 1012	SAX7 1014
87	SAX7 1201	SAX7 1202	SAX7 1203	SAX7 1204	SAX7 1205	SAX7 1206	SAX7 1207	SAX7 1208	SAX7 1209	SAX7 1210	SAX7 1212	SAX7 1214
99	SAX7 1401	SAX7 1402	SAX7 1403	SAX7 1404	SAX7 1405	SAX7 1406	SAX7 1407	SAX7 1408	SAX7 1409	SAX7 1410	SAX7 1412	SAX7 1414
111	SAX7 1601	SAX7 1602	SAX7 1603	SAX7 1604	SAX7 1605	SAX7 1606	SAX7 1607	SAX7 1608	SAX7 1609	SAX7 1610	SAX7 1612	SAX7 1614
123	SAX7 1801	SAX7 1802	SAX7 1803	SAX7 1804	SAX7 1805	SAX7 1806	SAX7 1807	SAX7 1808	SAX7 1809	SAX7 1810	SAX7 1812	SAX7 1814
135	SAX7 2001	SAX7 2002	SAX7 2003	SAX7 2004	SAX7 2005	SAX7 2006	SAX7 2007	SAX7 2008	SAX7 2009	SAX7 2010	SAX7 2012	SAX7 2014
147	SAX7 2201	SAX7 2202	SAX7 2203	SAX7 2204	SAX7 2205	SAX7 2206	SAX7 2207	SAX7 2208	SAX7 2209	SAX7 2210	SAX7 2212	SAX7 2214
159	SAX7 2401	SAX7 2402	SAX7 2403	SAX7 2404	SAX7 2405	SAX7 2406	SAX7 2407	SAX7 2408	SAX7 2409	SAX7 2410	SAX7 2412	SAX7 2414
171	SAX7 2601	SAX7 2602	SAX7 2603	SAX7 2604	SAX7 2605	SAX7 2606	SAX7 2607	SAX7 2608	SAX7 2609	SAX7 2610	SAX7 2612	SAX7 2614
183	SAX7 2801	SAX7 2802	SAX7 2803	SAX7 2804	SAX7 2805	SAX7 2806	SAX7 2807	SAX7 2808	SAX7 2809	SAX7 2810	SAX7 2812	SAX7 2814
195	SAX7 3001	SAX7 3002	SAX7 3003	SAX7 3004	SAX7 3005	SAX7 3006	SAX7 3007	SAX7 3008	SAX7 3009	SAX7 3010	SAX7 3012	
207	SAX7 3201	SAX7 3202	SAX7 3203	SAX7 3204	SAX7 3205	SAX7 3206	SAX7 3207	SAX7 3208	SAX7 3209	SAX7 3210	SAX7 3212	

Order Information for White, Blue, Green and UV Lights

mm	48	84	120	156	192	228	264	300	336	372	444	516
51	SAX7 0601	SAX7 0602	SAX7 0603	SAX7 0604	SAX7 0605	SAX7 0606	SAX7 0607	SAX7 0608	SAX7 0609	SAX7 0610	SAX7 0612	SAX7 0614
63	SAX7 0801	SAX7 0802	SAX7 0803	SAX7 0804	SAX7 0805	SAX7 0806	SAX7 0807	SAX7 0808	SAX7 0809	SAX7 0810	SAX7 0812	SAX7 0814
75	SAX7 1001	SAX7 1002	SAX7 1003	SAX7 1004	SAX7 1005	SAX7 1006	SAX7 1007	SAX7 1008	SAX7 1009	SAX7 1010	SAX7 1012	SAX7 1014
87	SAX7 1201	SAX7 1202	SAX7 1203	SAX7 1204	SAX7 1205	SAX7 1206	SAX7 1207	SAX7 1208	SAX7 1209	SAX7 1210	SAX7 1212	SAX7 1214
99	SAX7 1401	SAX7 1402	SAX7 1403	SAX7 1404	SAX7 1405	SAX7 1406	SAX7 1407	SAX7 1408	SAX7 1409	SAX7 1410	SAX7 1412	SAX7 1414
111	SAX7 1601	SAX7 1602	SAX7 1603	SAX7 1604	SAX7 1605	SAX7 1606	SAX7 1607	SAX7 1608	SAX7 1609	SAX7 1610	SAX7 1612	SAX7 1614
123	SAX7 1801	SAX7 1802	SAX7 1803	SAX7 1804	SAX7 1805	SAX7 1806	SAX7 1807	SAX7 1808	SAX7 1809	SAX7 1810	SAX7 1812	SAX7 1814
135	SAX7 2001	SAX7 2002	SAX7 2003	SAX7 2004	SAX7 2005	SAX7 2006	SAX7 2007	SAX7 2008	SAX7 2009	SAX7 2010	SAX7 2012	
147	SAX7 2201	SAX7 2202	SAX7 2203	SAX7 2204	SAX7 2205	SAX7 2206	SAX7 2207	SAX7 2208	SAX7 2209	SAX7 2210	SAX7 2212	
159	SAX7 2401	SAX7 2402	SAX7 2403	SAX7 2404	SAX7 2405	SAX7 2406	SAX7 2407	SAX7 2408	SAX7 2409	SAX7 2410		
171	SAX7 2601	SAX7 2602	SAX7 2603	SAX7 2604	SAX7 2605	SAX7 2606	SAX7 2607	SAX7 2608	SAX7 2609	SAX7 2610		
183	SAX7 2801	SAX7 2802	SAX7 2803	SAX7 2804	SAX7 2805	SAX7 2806	SAX7 2807	SAX7 2808	SAX7 2809			
195	SAX7 3001	SAX7 3002	SAX7 3003	SAX7 3004	SAX7 3005	SAX7 3006	SAX7 3007	SAX7 3008				
207	SAX7 3201	SAX7 3202	SAX7 3203	SAX7 3204	SAX7 3205	SAX7 3206	SAX7 3207	SAX7 3208				

Required controller: 1 A controller for continuous/switching mode and 8 A controller for strobe mode, see “Controller selection”

Required controller: 3 A controller for continuous/switching mode and 24 A controller for strobe mode, see “Controller selection”

Required controller: Two 3 A controllers for continuous/switching mode and two 24 A controllers for strobe mode, see “Controller selection” (with two connectors)

Not available

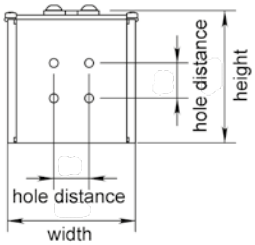
Coaxial Lights

Coaxial lights are used for reflecting objects which requires a very even light over the whole area.

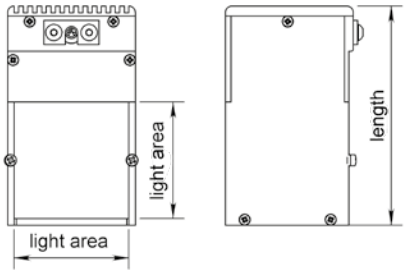
The light is covered by a coated protective glass.

Mounting: four M4 screws suited for LATAB brackets.

Mechanical Dimensions



Different hole pattern for SAX9 0110 and SAX9 0145 (8 instead of 4 thread holes). Drawing on request.



Step files available on request

Order Information

Order number	Side length of active light area (mm)	Width (mm)	Height (mm)	Length (mm)	Mounting hole distance (mm)	Controller[2] continuous/ switching mode	Controller[2] strobe mode
SAX9 2525	25	30.5	33	70	10	1 A	8 A
SAX9 5050	50	55.5	58	95	16	1 A	8 A
SAX9 7575	75	80.5	84	120	16	1 A 3 A[3]	8 A 24 A[3]
SAX9 0110	109	117	118	159	16	3 A	24 A
SAX9 0145	145	150	153	190	16	3 A[4]	24 A[4]

Order Information RGB Lights

Order number	Side length of active light area (mm)	Width (mm)	Height (mm)	Length (mm)	Mounting hole distance (mm)	Controller[5] continuous/ switching mode	Controller[5] strobe mode
RGB9 2525	25	30.5	33	70	10	1 A	8 A
RGB9 5050	50	55.5	58	95	16	1 A	8 A
RGB9 7575	75	80.5	84	120	16	1 A	8 A
RGB9 0110	109	117	118	159	16	1 A	8 A
RGB9 0145	145	150	153	190	16	1 A	8 A

[2] See “Controller selection” for details
[3] For light colors white, blue, green and UV
[4] For light colors red and IR, others on request
[5] For RGB lights 4 channel controllers are required

Color Information

Replace “X” in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R	IR	880
B	Blue	465
G	Green	520
U	UV	395

[1] Example for red coaxial light: SAH9 2525

Options

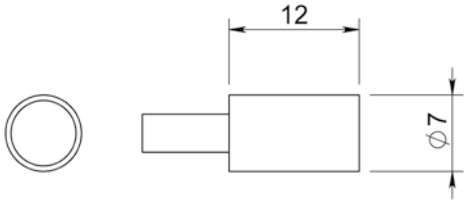
- Cable length and type see “Order options”
- Bracket options see “Lighting head brackets”

Spot Lights

SAX-spot light with 7 mm diameter
The small spot light is based on one S-LED.
It is designed especially for lighting small areas.
Option: Multi-light head applications are available with up to 10 spots using one controller.

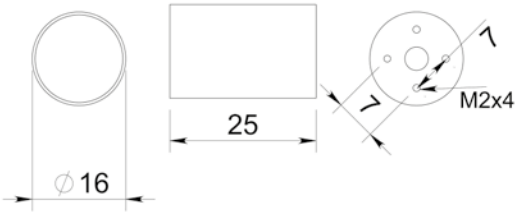
OSX-spot light with 16 mm diameter
The small spot light contains four high-power O-LEDs.
It is designed especially for lighting small areas.
Option: Multi-light head applications are available with up to four spots using one controller.

Mechanical Dimensions



Step files available on request

Mechanical Dimensions



Step files available on request

Color Information (for both types)

Replace "X" in order number by one character[1]	Color	Wavelength (nm)
H	Red	617
W	White	
R[2]	IR	880
B	Blue	465
G	Green	520

[1] Example for red spot light: SAH3 7007
[2] Only for SAX3 7007

Order Information (for both types)

Order number	Sizes (mm)		Controller[3]	
	outer ø	height	continuous/ switching mode	strobe mode
SAX3 7007	7	12	1 A	8 A
OSX3 7016	16	25	1 A	8 A

[3] See "Controller selection" for details

Options (for both types)

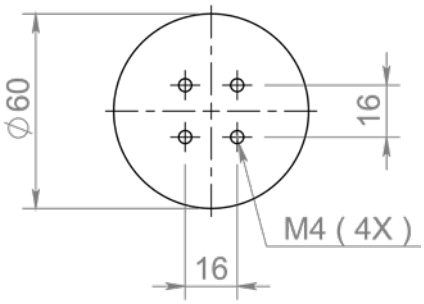
- Cable length and type see "Order options"

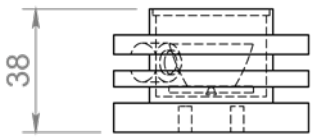
High-brightness Spot Lights

The spot light with secondary LED optics is based on an Oslon SSL80 LED. Different lenses enable fields of view with different diameters.

The lighting head can be equipped with lenses for light beam angles of 10, 18, 28 and 40 degrees for an ideal adjustment to different working distances and fields of view.

Mechanical Dimensions





Step files available on request

Color Information

Replace "X" in order number by one character[1]	Color	Wavelength (nm)
D	Red	617
W	White	
B	Blue	465
G	Green	520

[1] Example for red spot light: FAD3 1151 (10)

Order Information

Order number	Secondary optics	Controller[2]	
		continuous/ switching mode	strobe mode
FAX3 1151 (10)	10°	1 A	8 A
FAX3 1151 (18)	18°	1 A	8 A
FAX3 1151 (28)	28°	1 A	8 A
FAX3 1151 (40)	40°	1 A	8 A

[2] See "Controller selection" for details

Options

- Cable length and type see "Order options"
- Bracket options see "Lighting head brackets"
- Diffuser see "Order options"

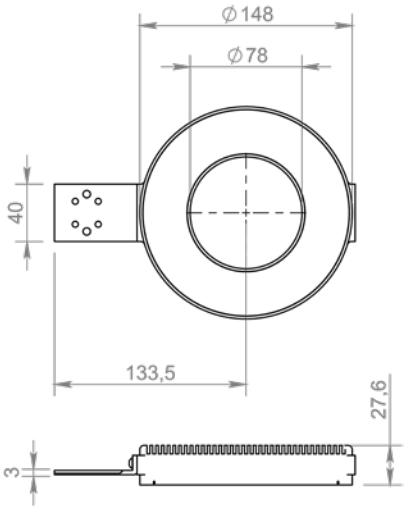
High-brightness Ring Lights

These ring lights are equipped with 12 high-power LEDs permitting working distances of 1 to 1.5 m, much more than standard LED lights which are usually suitable for working distances of up to 30 cm.

The lighting head can be equipped with lenses for light beam angles of 10, 18, 28 and 40 degrees for an ideal adjustment to different working distances and fields of views.

A bracket and a clear glass diffuser is included.
It's possible to choose a shower glass diffuser.

Mechanical Dimensions



Step files available on request

Order Information

Order number	Secondary optics	Controller[2]	
		continuous/ switching mode	strobe mode
FAX3 1153(10)	10°	1 A	8 A
FAX3 1153(18)	18°	1 A	8 A
FAX3 1153(28)	28°	1 A	8 A
FAX3 1153(40)	40°	1 A	8 A

[2] See "Controller selection" for details

Options

- Cable length and type see "Order options"
- Bracket options see "Lighting head brackets"
- Diffuser see "Order options"

Color Information

Replace "X" in order number by one character[1]	Color	Wavelength (nm)
D	Red	617
W	White	
B	Blue	465
G	Green	520

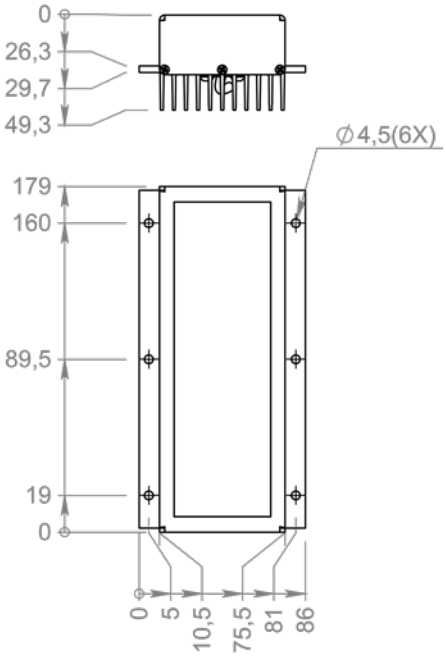
[1] Example for red ring light: FAD3 1153(10)

High-brightness Rectangular Lights

These rectangular lights are equipped with 12 high-power LEDs and a reflector to focus the light on a rectangular field of view. They are especially suitable for pallet lighting.

Fastening holes are integrated in the cooling profile (no bracket included).

Mechanical Dimensions



Step files available on request

Order Information

Order number	Color	Controller[1]	
		continuous/ switching mode	strobe mode
OSH5 0101	Red (617 nm)	3 A	24 A
OSW5 0101	White	3 A	24 A
OSB5 0101	Blue (465 nm)	3 A	24 A
OSG5 0101	Green (520 nm)	3 A	24 A

[1] See “Controller selection” for details

Options

- Cable length and type see “Order options”

Control Units

General Information

Reliable controllers are a precondition for efficient LED lighting. That's why LATAB has developed an extensive range of its own controllers. These not only maximize the life time of the sensitive LEDs, but automatically adapt to the connected light head.

The product features of the LATAB controllers are numerous: designs suitable for industrial use, adjustable light intensity, up to 4 channels, PC operation via Ethernet or other interfaces, as well as stand-alone solutions, either for continuous/switching mode operation or strobe mode, with adjustable pulse durations from 50 µs to 1.5 ms.

The controllers are based on constant current generators with a "plug and play" feature that automatically adapts to the connected LED light for exact light intensity.

The major differentiating factor of LATAB controllers is the illumination technique:

Continuous/switching Mode

The adjustable parameter for continuous/switching mode controllers is light intensity either via an internal or external potentiometer. Intensity can also be modulated by the voltage from zero (0 V) to full brightness (10 V).

Continuous/switching mode controllers are equipped with the "long flash" feature: The long flash function is a kind of trigger-controlled light. Light starts with trigger pulse and lasts as long as the trigger pulse is on.

In the long flash mode double intensity is available, that means that light intensity is twice the standard intensity. In double intensity (DI) mode ON-time is limited to five seconds, followed automatically by five seconds OFF-time. Shorter ON-time double intensity pulses are not limited and can be repeated at users demand.

Rise time is about 1.5 msec and fall time about 10 to 15 msec.

Strobe Mode

The adjustable parameters for strobe controllers are light intensity and strobe pulse length. Intensity can also be modulated by the voltage from zero (0 V) to full brightness (10 V).

For PC-controlled units a trigger pulse delay is also available. Strobe controllers provide 5 times more intensity compared to continuous/switching devices.

In strobe mode the pulse length is tuneable by internal set time from 50 to 1500 µsec. Rise and fall time is a few µsec.

A second differentiating factor of LATAB controllers is the interface:

Ethernet Interface

These controllers communicate by Ethernet protocol. In principle this allows an unlimited number of units to be connected to the same computer. When using the test program the number is limited to 8 controllers. The trigger signal is connected to the controller by a separate connector.

RS-232 Interface

The RS-232 interface is converted (within the COM-port connector itself) to RS-485, enabling up to 16 units to be connected to the same COM-port in a so-called multi drop system. These units are delivered with a test/demo PC-software which can also be used in real applications.

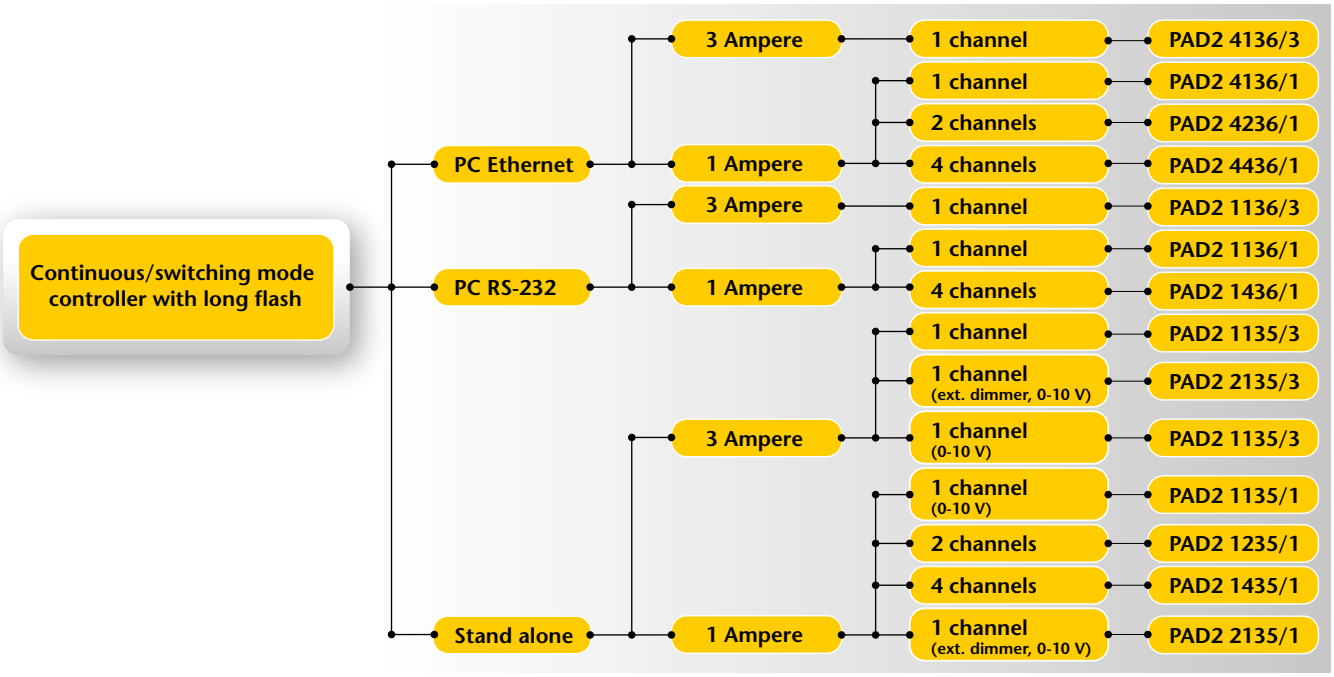
Test Program

Controllers with PC-communication are delivered with a test program for testing purposes and lab applications only.

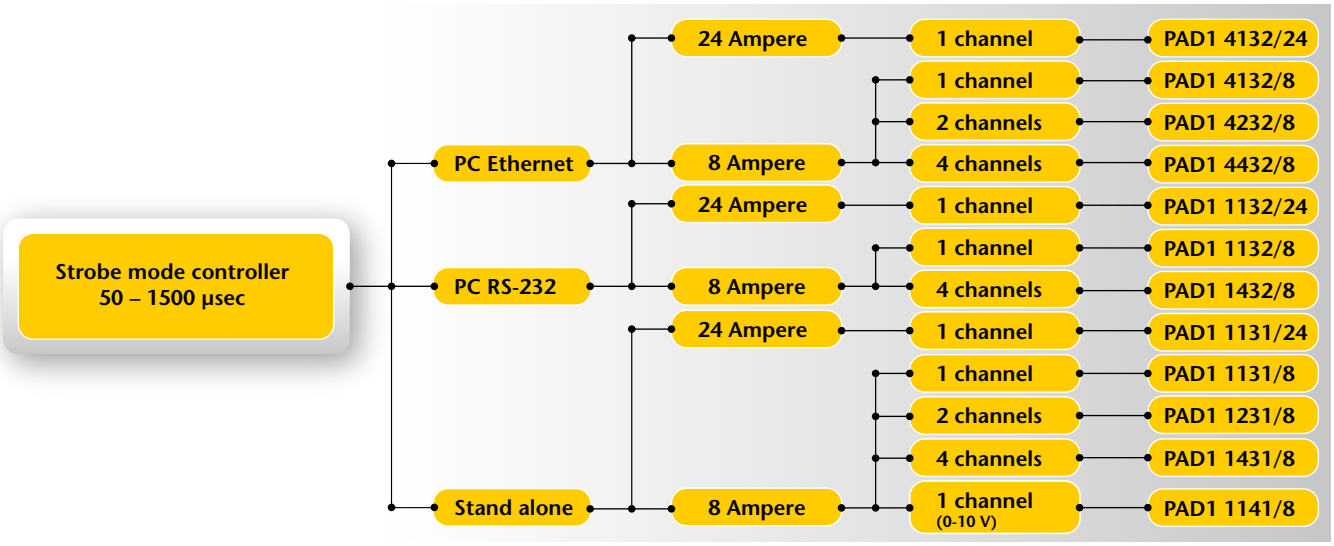
The protocol has a simple form and is therefore easily programmable by the user.

Controller Selection

Continuous/switching Mode



Strobe Mode



Continuous/switching Mode Controllers

The continuous/switching mode controllers are microprocessor-based and specially designed to control all types of LATAB lighting heads. Like the lighting heads, they come in a black aluminium housing.

The controller is enabled for plug and play. Just connect the LATAB lighting head and the controller automatically identifies the lighting type by an electronic sensor and gives the maximum light intensity to the lighting head. The light intensity can be adjusted by an internal/external dimmer, via 0-10 V, RS-232 or Ethernet.

The unique "long flash" feature gives the opportunity to increase the light intensity up to 200 % when a trigger pulse is received. In order to avoid overheating the pulse length is limited to 5 sec, followed by a 5 sec cool down period.

The controllers are supplied with a 5 m power/trigger cable[1].

Sample picture. Specific type pictures and drawings on the following pages.

General Specifications	
Supply voltage	24 V DC ± 10 %, max. 2.5 A
Power output	max. 1 A/3 A
Light intensity	0 - 100 % internal potentiometer
Trigger input	5 - 24 V, optically isolated
Operation temperature	0 - 65 °C

Order Information

Order number	Intensity control mode	Output	Number of channels	Figure number	Long flash option (5 sec)
PAD2 1135/1	Internal potentiometer/ 0-10 V[1]	1 A	1	1	yes
PAD2 1135/3	Internal potentiometer/ 0-10 V[1]	3 A	1	1	yes
PAD2 2135/1	External dimmer/ 0-10 V[1]	1 A	1	9	yes
PAD2 2135/3	External dimmer/ 0-10 V[1]	3 A	1	9	yes
PAD2 1235/1	Internal potentiometer	1 A/chan.	2	3	yes
PAD2 1435/1[2]	Internal potentiometer	1 A/chan.	4	4	yes
PAD2 1136/1	RS-232	1 A	1	1	
PAD2 1136/3	RS-232	3 A	1	1	
PAD2 1436/1[3]	RS-232	1 A	4	10	
PAD2 4136/1	Ethernet	1 A	1	5	yes
PAD2 4136/3	Ethernet	3 A	1	6	yes
PAD2 4236/1	Ethernet	1 A	2	7	yes
PAD2 4436/1[2]	Ethernet	1 A	4	8	yes

[1] Additional cable LKA2 5135 is neccessary
[2] Trigger cable is optional
[3] PAD2 1436/1 has no trigger function

Strobe Mode Controllers

The strobe mode controllers are microprocessor-based and specially designed to control all types of LATAB lighting heads. Like the lighting heads, they come in a black aluminium housing.

The controller is enabled for plug and play. Just connect the LATAB lighting head and the controller automatically identifies the lighting type by an electronic sensor and gives the maximum light intensity to the lighting head.

The strobe pulse is adjustable in 16 steps. The light intensity can also be adjusted. Increasing the light intensity up to 200 % at 50 and 100 µsec strobes can be selected by internal jumper.

The controllers are supplied with a 5 m power/trigger cable.

Sample picture. Specific type pictures and drawings on the following pages.

General Specifications	
Supply voltage	24 V DC ± 10 %, max. 2.5 A
Power output	max. 8 A/24 A
Light intensity	0 - 100 % internal potentiometer
Strobe pulse	50 - 1500 µsec in 16 steps
Trigger input	5 - 24 V, optically isolated
Trigger frequency	max. 200 Hz
Operation temperature	0 - 65 °C

Order Information

Order number	Intensity control mode	Output	Number of channels	Figure number	Trigger delay (0 - 48 msec)
PAD1 1131/8	Internal potentiometer	8 A	1	1	
PAD1 1131/24	Potentiometer	24 A	1	2	
PAD1 1141/8	0-10 V	8 A	1	1	
PAD1 1231/8	Internal potentiometer	8 A/chan.	2	3	
PAD1 1431/8	Internal potentiometer	8 A/chan.	4	4	
PAD1 1132/8	RS-232	8 A	1	1	yes
PAD1 1132/24	RS-232	24 A	1	2	yes
PAD1 1432/8	RS-232	8 A/chan.	4	4	yes
PAD1 4132/8	Ethernet	8 A	1	5	yes
PAD1 4132/24	Ethernet	24 A	1	6	yes
PAD1 4232/8	Ethernet	8 A/chan.	2	7	yes
PAD1 4432/8	Ethernet	8 A/chan.	4	8	yes

Controller Figures

Figure 1 PAD2 1135/1 · PAD2 1135/3 · PAD2 1136/1 · PAD2 1136/3 · PAD1 1131/8 · PAD1 1141/8 · PAD1 1132/8

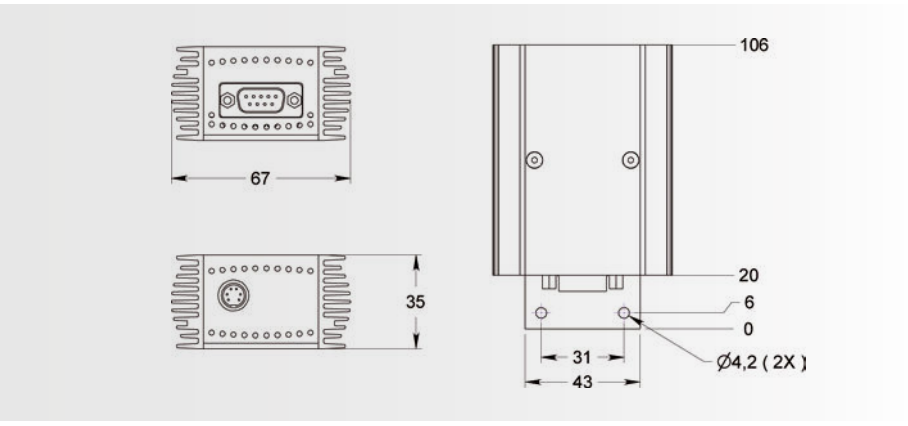


Figure 2 PAD1 1131/24 · PAD1 1132/24

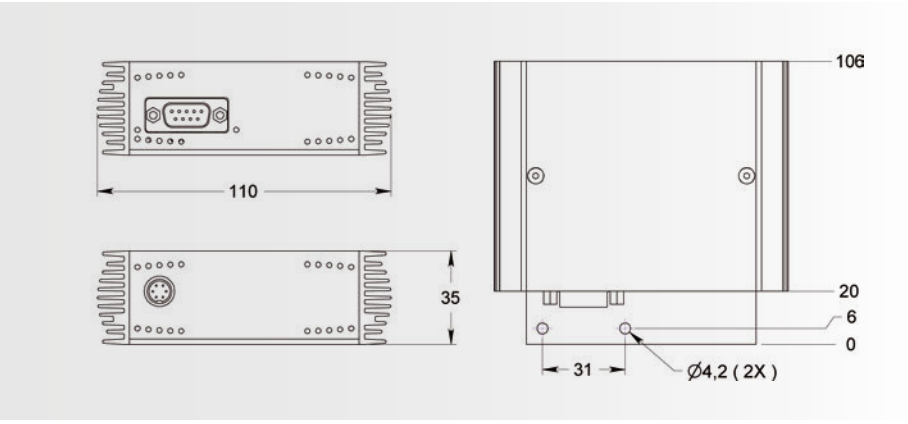


Figure 3 PAD2 1235/1 · PAD1 1231/8

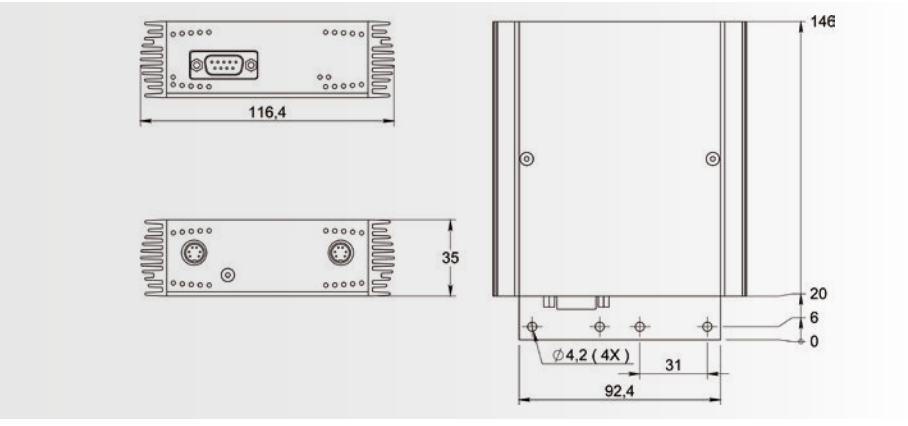


Figure 4 PAD2 1435/1 · PAD1 1431/8 · PAD1 1432/8

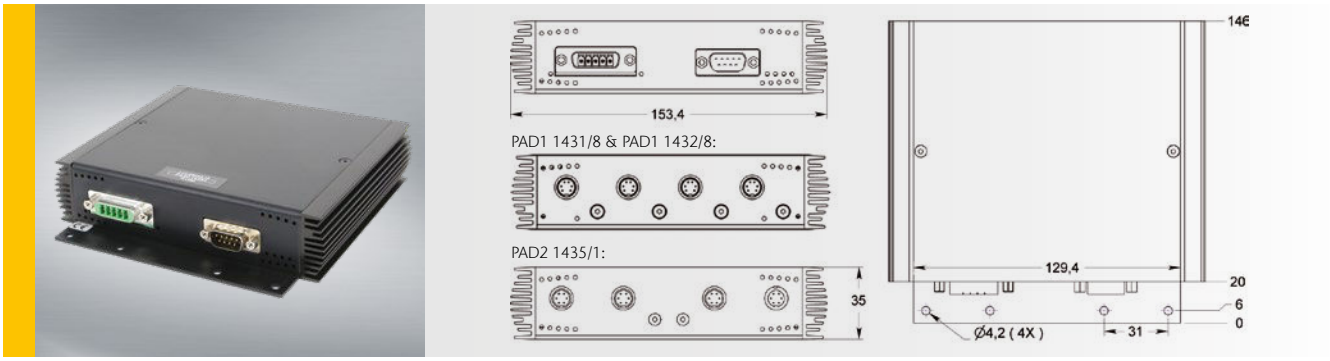


Figure 5 PAD2 4136/1 · PAD1 4132/8

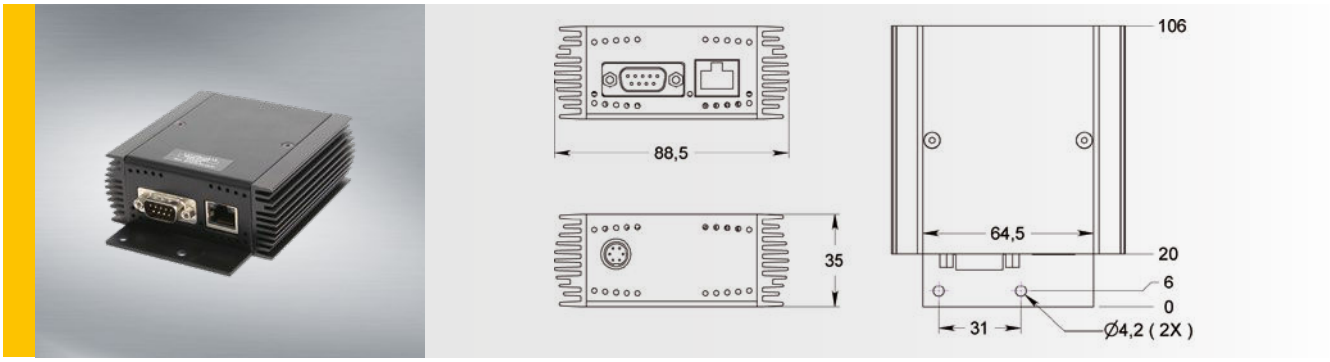


Figure 6 PAD2 4136/3 · PAD1 4132/24

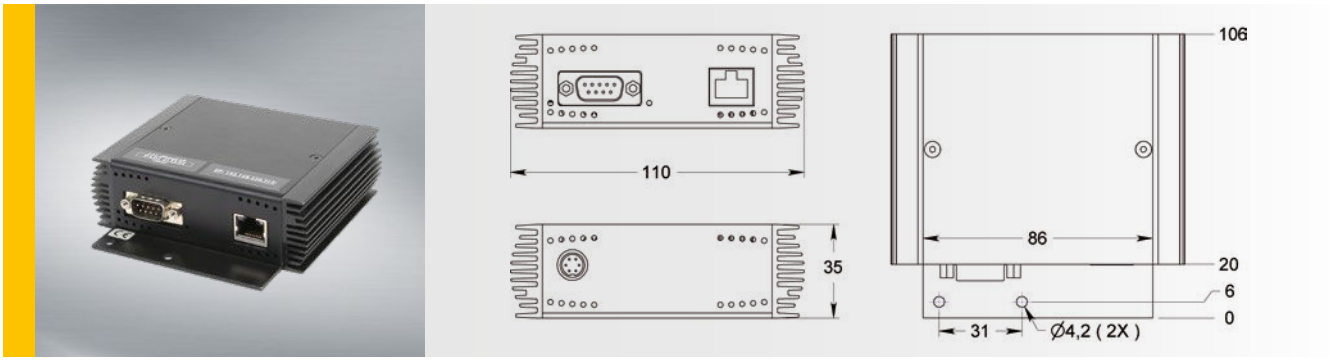


Figure 7 PAD2 4236/1 · PAD1 4232/8

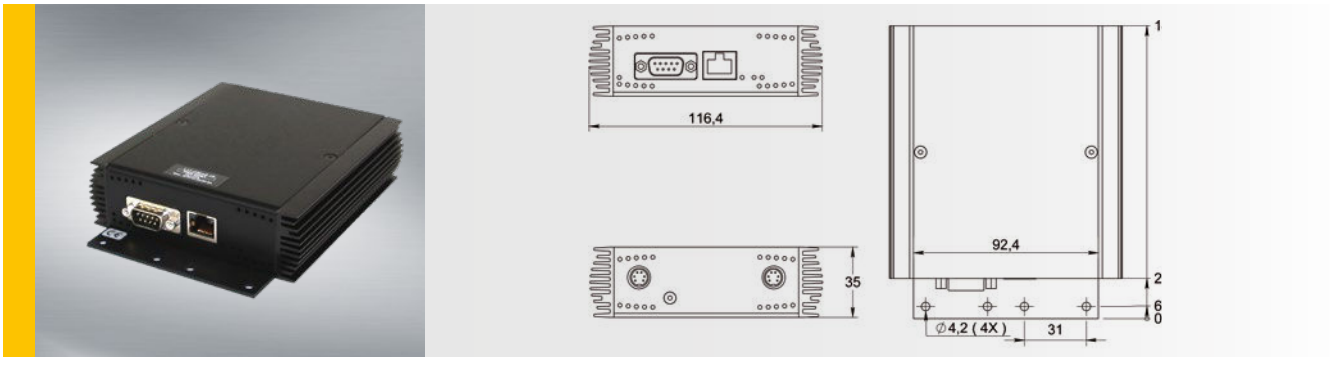


Figure 8 PAD2 4436/1 · PAD1 4432/8

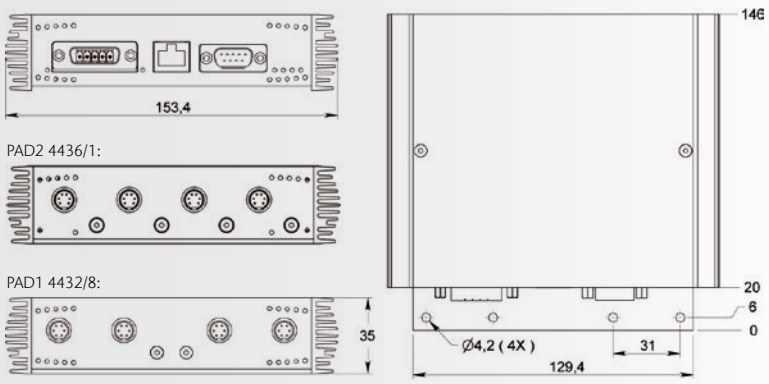


Figure 9 PAD2 2135/1 · PAD2 2135/3

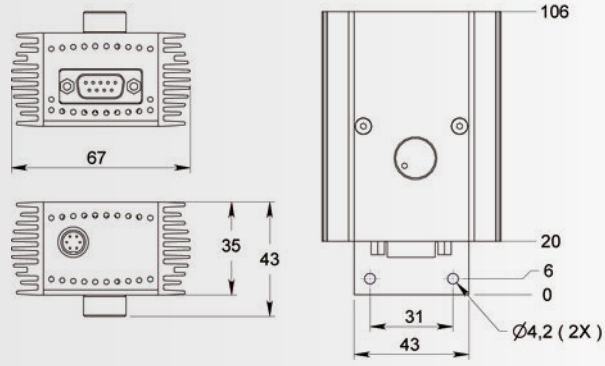
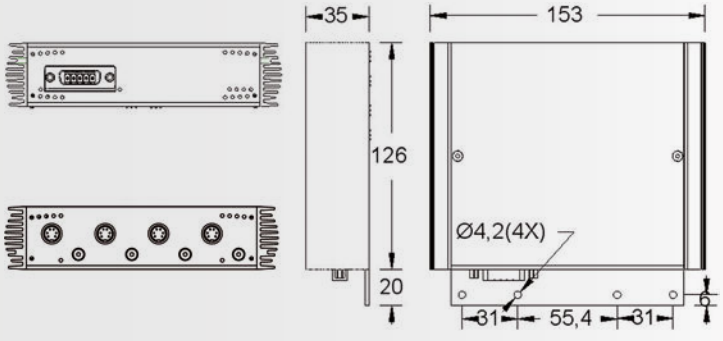


Figure 10 PAD2 1436/1



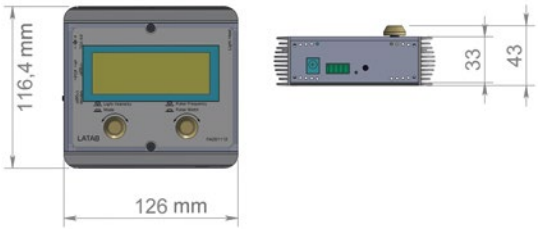
Demo Controller/Laboratory Tester

The Demo controller/laboratory tester comes with plug & play functionality. All adjustments can be made from the front panel. It can be operated in both continuous/ switching (normal as well as external on/off control) and strobe mode (internal or external trigger).

Trigger frequency: adjustable internal generator from 1 - 50 Hz or external up to 200 Hz.

Light intensity range:
0 - 100 % @ strobe time 0.005 - 1.5 msec
0 - 200 % @ strobe time max. 100 µsec.

Mechanical Dimensions



Step files available on request

General Specifications	
Supply voltage	24 V DC ± 5 %, max. 2.5 A
Continuous/ switching mode	Adjustable brightness, max. 3 A, fine adjustment by control knob 0 - 100 %
Strobe mode	Adjustable brightness, max. 24 A, strobe time from 0.005 - 1.5 msec, trigger frequency 0 - 200 Hz
Operation temperature	0 - 65 °C

Order Information
Order number
PAD8 1112

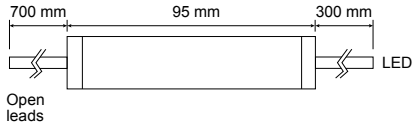
Inline Controller

For applications not requiring the features of the PAD2 and PAD1 controllers, the 24 V DC option is available. An inline controller housed in a small aluminium tube as part of the light head cable enables the light head to be directly connected to the 24 V DC power supply.

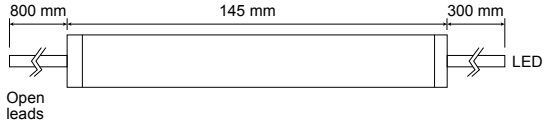
This option is available for all light heads.

Mechanical Dimensions

1 A light heads



3 A light heads



General Specifications		
	1 A light head	3 A light head
Supply voltage	24 V DC, 1 A	24 V DC, 2 A
Light head drive current	max. 1 A	max. 3 A
Light intensity 100 %, not adjustable	INL24V	INL3FO
Light intensity 100 %, adjustable	INL24VT	INL3TO
Cable Connections (Robot Cable Option)		
Red & orange (white & yellow)	+ 24 V DC	
Black & brown (green & brown)	0 V	

Order Information	
Order number extension to light head	
1 A light head	3 A light head
/INL24V	/INL3FO
/INL24VT	/INL3TO

Options

- Cable length type (i.e. robot cable) on request

Demo/Laboratory Lighting Kit

Different environmental conditions for machine vision applications can often make the choice of suitable lighting difficult. That's why in many cases different lighting applications have to be tested for the ideal solution.

The different lights are controlled by the demo controller/laboratory tester with all possible functions of the LATAB controllers.

The demo/laboratory lighting kit comes in a suitcase.

Mechanical Dimensions

Suitcase: 515 x 430 x 180 mm
Lighting heads and controller: see product pages

Contents

Product	Dimensions (mm)	Available light colors	Order number
Demo controller/ laboratory tester			PAD8 1112
Ring light	outer ⌀ 102	Red/White	SAX3 1102
Dome light	outer ⌀ 102	Red/White	SAX3 2102
Dark field	outer ⌀ 103	Red/White	SAX3 4103
Line lights - two lines	length 86	Red/White	SAX4 2086
Front light	56 x 80 x 15	Red/White	SAX5 1011
Back light	63 x 84 x 30	Red/White	SAX7 0802
Coaxial light	25 x 25	Red/White	SAX9 2525
AC/DC converter			

Other combinations and colors on request.

General Specifications

Supply voltage	24 V DC ± 5 %, max. 2.5 A
Continuous/switching mode	Brightness adjustable, max. 3 A, fine adjustment by potentiometer, 200 % more light intensity with long flash mode at 50 % on/off at max. 5 sec
Strobe mode	Brightness adjustable, max. 8 A, strobe time from 0.005 - 1.5 msec in 16 steps, trigger frequency 1 - 50 Hz
Operation temperature	0 - 65 °C

Order Information

Order number	Light color	Wavelength (nm)
SAH8 6110	Red	617
SAW8 6110	White	

Order Options

Cable Options for Lighting Heads

LATAB lighting heads are supplied with a 1 m cable by default.

For different lengths and types of cables please select the order code extension from the table below.

Extension Cables for Lighting Heads

Extension cables between lighting head connector and controller are available for continuous/switching and strobe mode controllers. Please select the cable length and type from the table below.

Diffuser

For a particularly homogeneous lighting there are diffusers available for the line light families, the front light 80 x 56 mm, ring lights/ring lights 50° and high-brightness spots.

Ring lights, dark field lights and back lights have a diffuser included as standard.

Polarization Filter

For ring lights with 78 and 102 mm diameter there are polarization filters available. For details please see page 39.

Lighting Head Brackets

There are different brackets available. For details please see page 38.

DIN Clips for Controllers

For a controller mounting on DIN rails there are DIN clips available for all control units. Two clips are mounted on the controller back side. For assembling just push the controller with the clips on the rail. Please select the option from the table below.

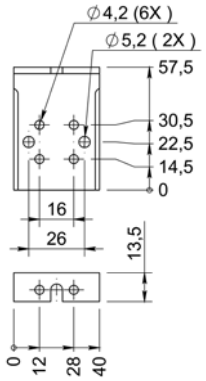
Order Information			
Order option	Specified	Order code	Example
Cable options for lighting heads	different lengths	add "/**XX**" behind light head order number	SAH3 1078/**5** for 5 m cable or SAH3 1078/**05** for 0.5 m cable
Cable options for lighting heads	various flexibility	add "/R" behind light head order number	SAH3 1078/R for flexible 1 m cable or SAH3 1078/R3 for flexible 3 m cable
Extension cables for lighting heads	for continuous/switching mode controllers	LKP1 **XXXX**	LKP1 **4000** for 4 m extension cable (continuous/switching mode)
Extension cables for lighting heads	for strobe mode controllers	LKS1 **XXXX**	LKS1 **4000** for 4 m extension cable (strobe mode)
Diffuser	for front light 80 x 56 mm, ring lights/ring lights 50°, line lights and high-brightness spots	add "S" behind light head order number	SAH4 1050S
Acrylic clear glass cover	for back lights used in front light applications	add "C" behind back light order number	SAX7 0602C
Polarization filter	see page 39		
Lighting head brackets	see page 38		
DIN clips for controllers	two clips on back side	add "/D" behind controller order number	PAD1 1131/8/D

Lighting Head Brackets

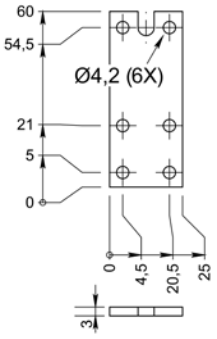
Alternative brackets with different dimensions are available to fit the LATAB lighting heads to special requirements. Step files are available on request.

Mechanical Dimensions

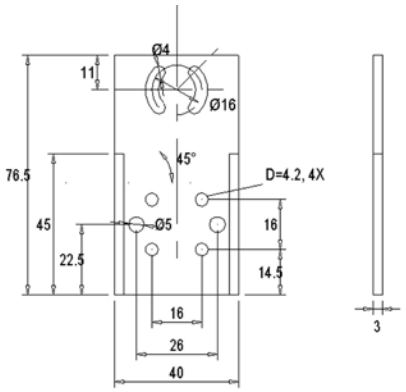
Universal, angle for S-series
(SXX3 010213)



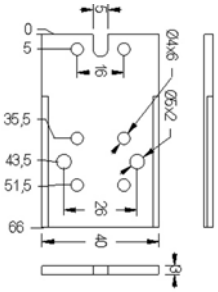
Universal, straight for S-series dark field
(LAD3 4011)



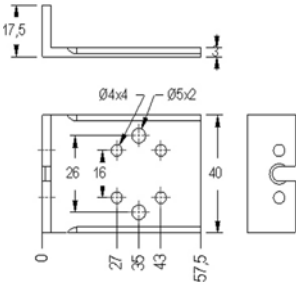
Adjustable, straight
(LDF6 1023)



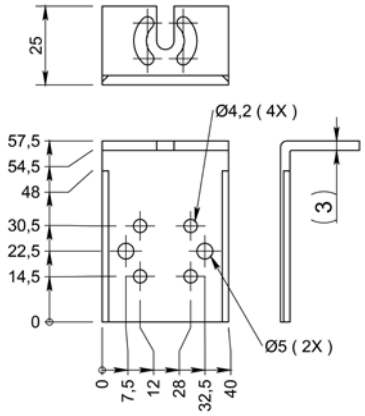
Universal, straight
(LAD3 6114)



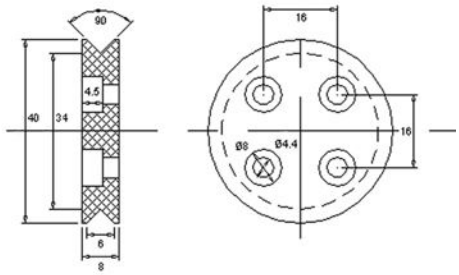
Universal, angle
(LAD3 7217)



Adjustable, angle
(LDF6 1022)



Round for Montech
(LDF6 1011)



Order Information	
Order number	Design
SXX3 010213	Universal, angle for S-series only
LAD3 4011	Universal, straight for dark field of S-series only
LAD3 6114	Universal, straight, for P-series and SXX4, SXX7, SXX9-series
LAD3 7217	Universal, angle, for P-series and SXX4, SXX7, SXX9-series
LDF6 1011	Round for Montech, for P-series and SXX4, SXX7, SXX9-series
LDF6 1023	Adjustable, straight, for P-series and SXX4, SXX7, SXX9-series
LDF6 1022	Adjustable, angle, for P-series and SXX4, SXX7, SXX9-series

Other types and custom designs on request.

Polarization Filters for Ring Lights

There are polarization filters for ring lights with 78 and 102 mm diameter available.

The filter consists of two parts: an outer part for the ring light and an inner part for the camera. The outer section is fixed by three screws. The inner section is twistable in order to adjust the polarization effect.

The most used polarization filter is HN38 with a total luminous transmittance of approximately 38 % and it's noted for the lack of color distortion.

The filter ring is made of black aluminium.

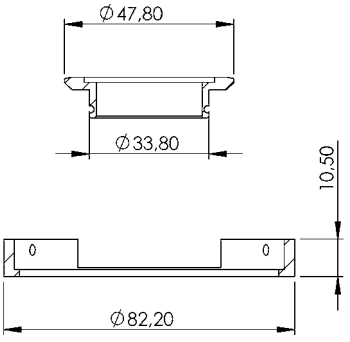
Other types of polarization filters on request.

Order Information	
Order number	Design
LFL3 1078	Polarization filter for SAX3 1078
LFL3 1102	Polarization filter for SAX3 1102

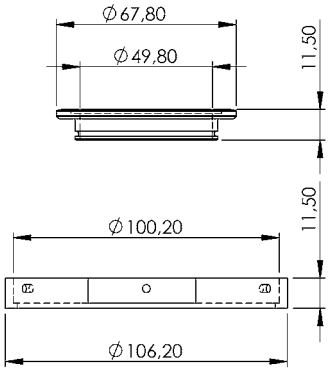
Other types and custom designs on request.

Mechanical Dimensions

LFL3 1078



LFL3 1102



LATAB
Industrial LED Lighting

International Sales Contact
E-Mail sales@latab.de
Phone +49 7243 604-1800

Headquarter:
LAT elektronic AB (Sweden)
Krossgatan 18
162 50 Vällingby
Tel. +46 8 4030 7950
info@latab.se

International Sales:
Polytec GmbH (Germany)
Polytec-Platz 1-7
76337 Waldbronn
Tel. +49 7243 604-1800
sales@latab.de

www.latab.net

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2018/02 - Technical specifications are subject to change without notice.