VL-BAR Compact Bar Light

Angle-adjustable LED bar light for machine vision, 51 to 505 mm, 24 V DC with PNP / NPN trigger



KEY DATA

Light type
Compact LED bar light for direct or angled illumination

Colours and wavelength
Red 621 nm · Green 528 nm · Blue 470 nm · White 6500 K

Light lengths (B)
51 / 102 / 203 / 305 / 405 / 505 mm

Supply voltage
24 V DC

Overview

The VL-BAR is a compact LED bar light for machine vision. It illuminates the part directly or at an angle and suits barcode and DataMatrix reading, OCR and OCV, surface inspection and positioning tasks in narrow machine spaces.

Key features

- Six lengths: 51, 102, 203, 305, 405 and 505 mm
- Red 621 nm, green 528 nm, blue 470 nm or white 6500 K; IR 850 nm and UV 365 nm on request
- Automotive-grade LEDs with constant-current drive
- PNP and NPN trigger input for synchronised operation with cameras and controllers
- Transparent or frosted diffuser
- Cooling grooves in the aluminium housing for a long service life
- 24 V DC, M8 4-pin connector, IP50 (IP67 on request)

Technical specifications

Light type	Compact LED bar light for direct or angled illumination
Light lengths (B)	51 / 102 / 203 / 305 / 405 / 505 mm
Profile (A × C)	23 × 33.2 mm
Colours and wavelength	Red 621 nm · Green 528 nm · Blue 470 nm · White 6500 K
Infrared and UV	IR 850 nm and UV 365 nm on request
LED beam angle	Red 32° · Green 34° · Blue 34° · White 30°
LEDs	Automotive-grade LEDs, constant-current drive
Supply voltage	24 V DC
Power consumption	1.37 – 21.60 W depending on length and colour (see model table)
Trigger input	PNP or NPN — apply one signal, not both
Connection	M8 4-pin connector on a 300 mm cable
Degree of protection	IP50 (IP67 on request)

Housing	Aluminium, black anodised, with cooling grooves
Diffuser	Transparent or frosted
Mounting	4 × M3 mounting holes
EMC	2014/30/EU — EMC Directive (EN IEC 55015:2019+A11:2020, IEC 61547:2020)

Models and ordering codes

Model	Colour	Wavelength / colour temperature	Power	Light length B	Total length D
VL-BAR-23-51-R-24-C30	Red	621 nm	2.16 W	51 mm	69 mm
VL-BAR-23-51-G-24-C30	Green	528 nm	2.05 W	51 mm	69 mm
VL-BAR-23-51-B-24-C30	Blue	470 nm	1.37 W	51 mm	69 mm
VL-BAR-23-51-W-24-C30	White	6500 K	1.71 W	51 mm	69 mm
VL-BAR-23-102-R-24-C30	Red	621 nm	4.32 W	102 mm	121 mm
VL-BAR-23-102-G-24-C30	Green	528 nm	4.10 W	102 mm	121 mm
VL-BAR-23-102-B-24-C30	Blue	470 nm	2.73 W	102 mm	121 mm
VL-BAR-23-102-W-24-C30	White	6500 K	3.42 W	102 mm	121 mm
VL-BAR-23-203-R-24-C30	Red	621 nm	8.64 W	203 mm	222 mm
VL-BAR-23-203-G-24-C30	Green	528 nm	8.20 W	203 mm	222 mm
VL-BAR-23-203-B-24-C30	Blue	470 nm	5.47 W	203 mm	222 mm
VL-BAR-23-203-W-24-C30	White	6500 K	6.84 W	203 mm	222 mm
VL-BAR-23-305-R-24-C30	Red	621 nm	12.96 W	305 mm	324 mm
VL-BAR-23-305-G-24-C30	Green	528 nm	12.31 W	305 mm	324 mm
VL-BAR-23-305-B-24-C30	Blue	470 nm	8.20 W	305 mm	324 mm
VL-BAR-23-305-W-24-C30	White	6500 K	10.26 W	305 mm	324 mm
VL-BAR-23-405-R-24-C30	Red	621 nm	17.28 W	405 mm	424 mm
VL-BAR-23-405-G-24-C30	Green	528 nm	16.42 W	405 mm	424 mm
VL-BAR-23-405-B-24-C30	Blue	470 nm	10.94 W	405 mm	424 mm
VL-BAR-23-405-W-24-C30	White	6500 K	13.68 W	405 mm	424 mm
VL-BAR-23-505-R-24-C30	Red	621 nm	21.60 W	505 mm	524 mm
VL-BAR-23-505-G-24-C30	Green	528 nm	20.52 W	505 mm	524 mm
VL-BAR-23-505-B-24-C30	Blue	470 nm	13.68 W	505 mm	524 mm
VL-BAR-23-505-W-24-C30	White	6500 K	17.10 W	505 mm	524 mm

All models: 24 V DC, M8 4-pin connector on a 300 mm cable, IP50 (IP67 on request). IR (850 nm) and UV (365 nm) versions on request.

Electrical connection

M8 4-pin connector on a 300 mm cable. The light is switched by a PNP or an NPN trigger signal.

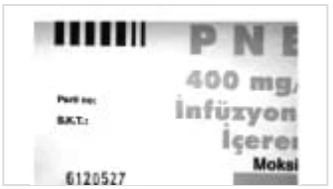
Pin	Function	Wire colour
1	Power in +24 V DC	Brown
2	NPN trigger	White
3	GND	Blue
4	PNP trigger	Black

Apply either the PNP or the NPN trigger signal, not both. Without the correct input current the light output is not consistent.

Sample applications



Dot-peen marked metal parts for OCR



OCR on pharmaceutical boxes, labels



Metal, plastic and other material positioning, quality check



DataMatrix reading on laser-marked metal



Label quality check, OCR, OCV



Laser-marked metal, paper, plastic OCR



Label code reading, OCR, label positioning on box

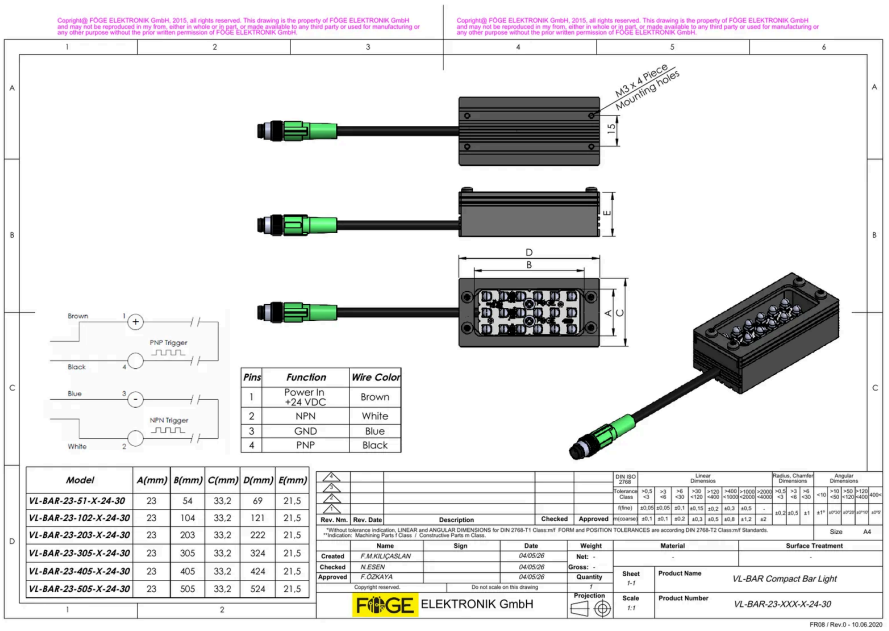


OCR on laser-marked plastic parts, part check

Accessories

Ordering code	Description	Suitable for
FG-AC-0052	Frosted diffuser	VL-BAR-23-51 (R / W / B / G)
FG-AC-0053	Frosted diffuser	VL-BAR-23-102 (R / W / B / G)
FG-AC-0054	Frosted diffuser	VL-BAR-23-203 (R / W / B / G)
FG-AC-0055	Frosted diffuser	VL-BAR-23-305 (R / W / B / G)
FG-AC-0056	Frosted diffuser	VL-BAR-23-405 (R / W / B / G)
FG-AC-0057	Frosted diffuser	VL-BAR-23-505 (R / W / B / G)
TKPM-Z-2.5/4	M8 female connector, straight, PVC cable 4 × 0.25 mm², black, UL/CSA, 2.5 m	All VL-BAR models
TKPM-Z-5/4	M8 female connector, straight, PVC cable 4 × 0.25 mm², black, UL/CSA, 5 m	All VL-BAR models
TKPM-W-2.5/4	M8 female connector, 90°, PVC cable 4 × 0.25 mm², black, UL/CSA, 2.5 m	All VL-BAR models
TKPM-W-5/4	M8 female connector, 90°, PVC cable 4 × 0.25 mm², black, UL/CSA, 5 m	All VL-BAR models

Dimensional drawing



VL-BAR dimensional drawing with dimensions A to E for all lengths, 4 × M3 mounting holes and M8 pin assignment

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