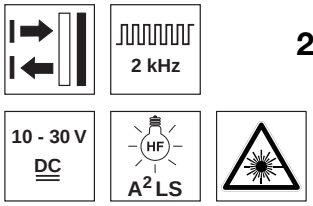
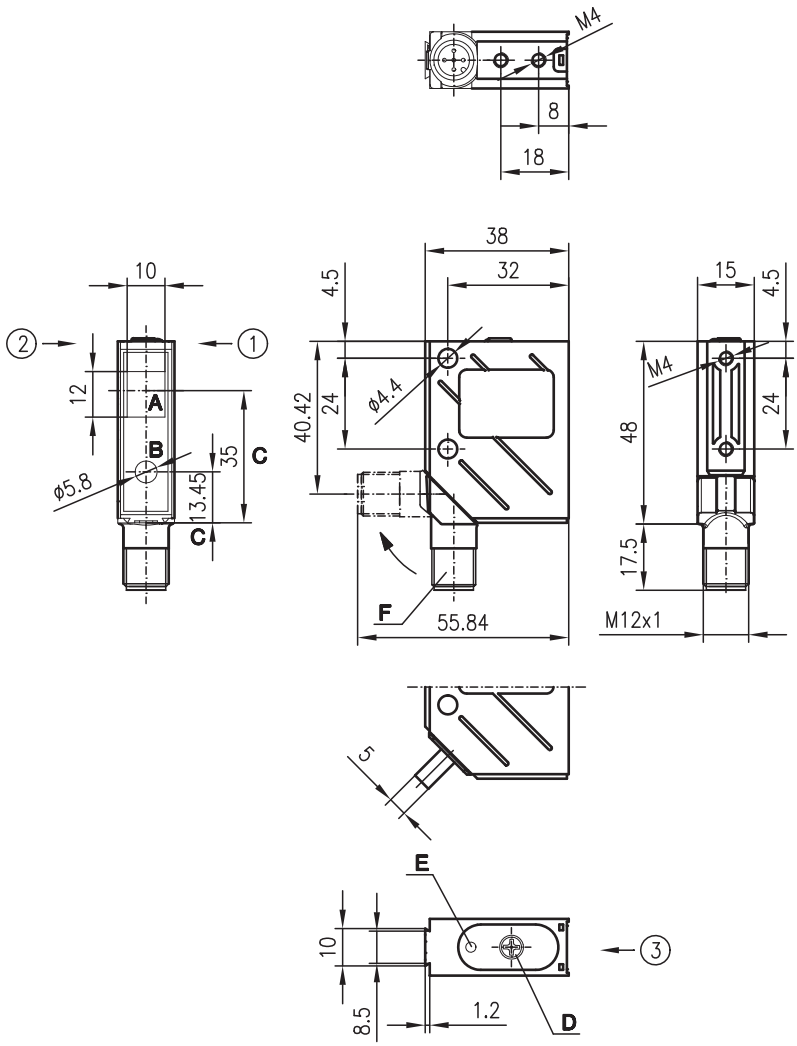
HRTL 8 Laser diffuse reflection light scanner with background suppression

en 01-2017/09 50137596



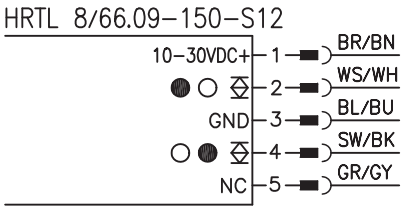
- Laser, red light, laser class 1
- Adjustable background suppression
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- M12 turning connector

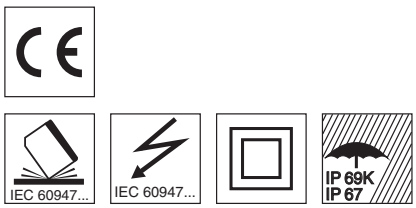
Dimensioned drawing



A Receiver
B Transmitter
C Optical axis
D Operational control
E Yellow LED
F Turning connector, 90°
Preferred entry direction for objects ① + ② + ③

Electrical connection





Accessories:

(available separately)

- M12 connectors (KD …)
- Ready-made cables (KD …)
- Mounting systems
- Control guard

Specifications

Optical data

Typ. scanning range limit (white 90 %) [1]		25 … 200 mm
Scanning range [2]		see tables
Mechanical adjustment range		50 … 200 mm
Light beam characteristic		focussed
Beam spread		≥ 0.5 mrad
Light source		laser
Laser class		1 acc. to IEC 60825-1:2007
Wavelength		670 nm (visible red light)
Max. output power (peak)		0.5 mW
Pulse duration		6 µs

Timing

Switching frequency		2000 Hz
Response time		0.25 ms
Delay before start-up		≤ 100 ms

Electrical data

Operating voltage U_B		10 … 30 VDC
Residual ripple		≤ 15 % of U_B
Open-circuit current		≤ 35 mA
Switching output/function	…/66…	2 push-pull switching outputs [3] pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching
Signal voltage high/low		≥ (U_B-2V)/≤ 2V
Output current		max. 100 mA
Scanning range adjustment		mechanical via multiturn potentiometer

Indicators

Yellow LED	object detected

Mechanical data

Housing	metal
Optics cover	glass
Weight	70 g
Connection type	M12 connector, 5-pin

Environmental data

Ambient temp. (operation/storage)	-10°C … +40°C/-40°C … +70°C
Protective circuit [4]	2, 3
VDE safety class [5]	II, all-insulated
Protection class [6]	IP 67, IP 69K [7]
Standards applied	IEC 60947-5-2

1) Typ. scanning range limit: max. attainable range without performance reserve
2) Scanning range: recommended range with performance reserve
3) The push-pull switching outputs must not be connected in parallel
4) 2=polarity reversal protection, 3=short-circuit protection for all outputs
5) Rating voltage 250 VAC
6) In stop position of the turning connector (turning connector locked)
7) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

Order guide

	Designation	Part No.
Laser class 1		
With M12 connector	HRTL 8/66.09-150-S12	50115688

Tables

Laser class 1:

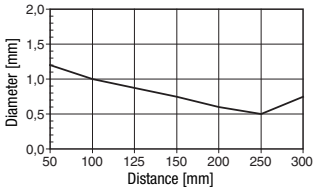
1	25	150	200
2	45	140	185
3	50	130	170

1	white 90 %
2	gray 18 %
3	black 6 %

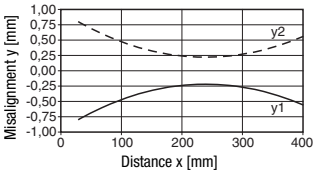
Scanning range [mm]
Typ. scanning range limit [mm]

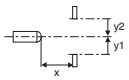
Diagrams

Typ. light spot



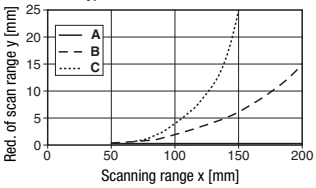
Typ. response behaviour (white 90 %)



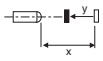


Laser class 1:

Typ. black/white behaviour



A white 90 %
B gray 18 %
C black 6 %



Remarks

Operate in accordance with intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with the intended use.

- Install sensor inclined at angle of approx. 10° if used to detect objects with shiny surfaces.

HRTL 8 Laser diffuse reflection light scanner with background suppression

Laser safety notices

ATTENTION, LASER RADIATION – LASER CLASS 1

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product in **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

- Adhere to the applicable legal and local regulations regarding protection from laser beams.
- The device must not be tampered with and must not be changed in any way.
  There are no user-serviceable parts inside the device.
  Repairs must only be performed by Leuze electronic GmbH + Co. KG.