

LD46

DATALOGIC

LUMINESCENCE SENSOR LINE IN STANDARD METAL HOUSING

- UV high power LED emission
- High sensitivity on fluorescent marks
- 10 - 50 mm detection distance
- 2 kHz switching frequency
- NPN/PNP and 0-5 V analog outputs

APPLICATIONS

- Packaging and labeling machinery
- Food, Cosmetic and Pharmaceutical
- Ceramic tiles selection and sorting



(*) ATEX II 3DG

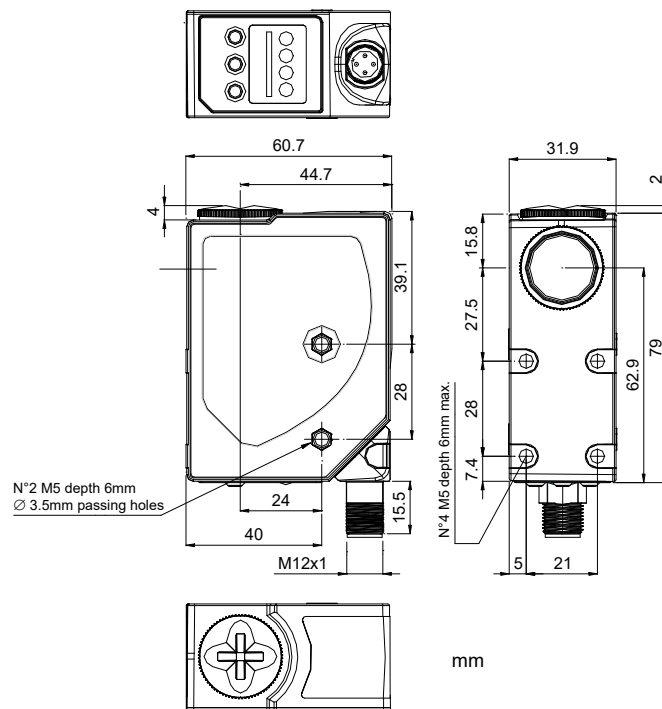
LD46

Luminescence sensor		10...20 mm (LD46-UL-715)
		20...40 mm (LD46-UL-755)
		30...50 mm (LD46-UL-735)
Spot dimension		2x8 mm at 10 mm
		3x11 mm at 24 mm
		4x15 mm at 50 mm
Switching frequency		2 kHz
Response Time		250 µs
Light emission		UV-HP LED
Setting		push buttons
Power supply	Vdc	15...30 V
	Vac	
	Vac/dc	
Output	PNP	
	NPN	
	NPN/PNP	•
	relay	
	other	0...5 V Analog output
Connection	cable	
	connector	•
	pig-tail	
Approximate dimensions (mm)		31x81x58
Housing material		aluminium
Mechanical protection		IP67

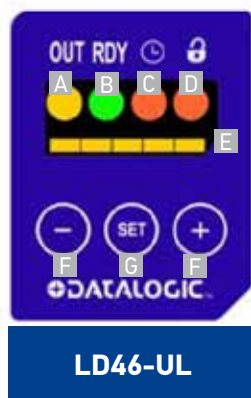
TECHNICAL DATA

Power supply	15 ... 30 Vdc (limit values)
Ripple	2 Vpp max.
Consumption (output current excluded)	50 mA max. at 24 Vdc
Light emission	UV LED 375 nm
Setting	SET push-buttons
Indicators	yellow OUTPUT LED green READY LED orange DELAY LED and KEYLOCK LED 5-segment bargraph
Output	PNP/NPN; analog output
Output current	100 mA max.
Saturation voltage	2 V max.
Response time	250 µs
Switching frequency	2 kHz
Connection	M12 5-pole connector
Dielectric strength	500 Vac, 1 min between electronics and housing
Insulating resistance	>20 MΩ, 500 Vdc between electronics and housing
Electrical protection	class 2, double insulation
Mechanical protection	IP67
Ambient light rejection	according to EN 60947-5-2
Vibrations	0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)
Shock resistance	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Minimum spot dimension	2 x 8 mm at 10 mm (mod. LD46-UL-715) 3x11 mm at 24 mm (mod. LD46-UL-755) 4x15 mm at 50 mm (mod. LD46-UL-735)
Housing material	aluminium
Lens material	glass
Operating temperature	-10 ... 55 °C
Storage temperature	-20 ... 70 °C
Weight	180 g max.

DIMENSIONS



INDICATORS AND SETTINGS

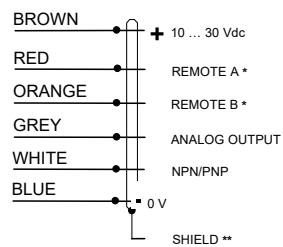


- A** yellow OUTPUT LED
- B** green READY LED
- C** orange DELAY LED
- D** orange KEYLOCK LED
- E** Bargraph
- F** +/- push-buttons
- G** SET push-button

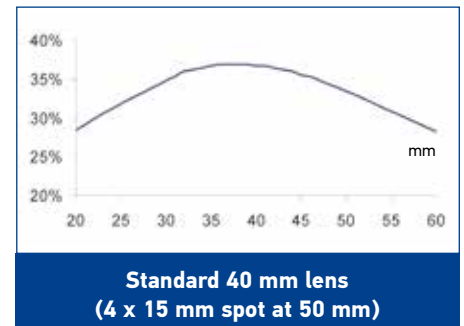
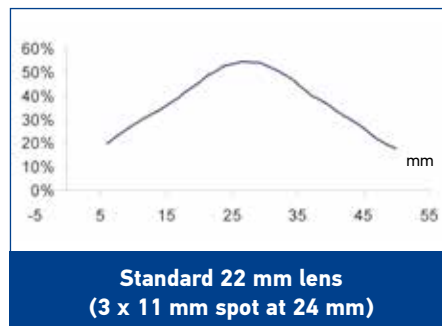
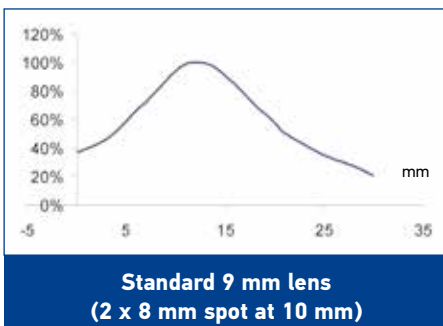
LD46-UL

CONNECTIONS

M12 CONNECTOR



DETECTION DIAGRAMS

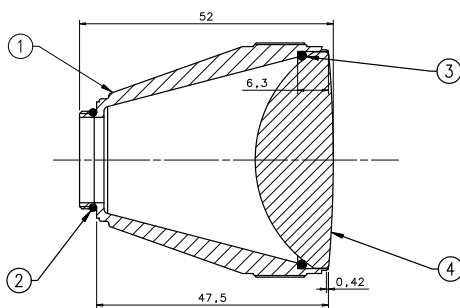


MODEL SELECTION AND ORDER INFORMATION

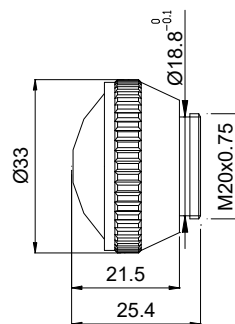
OPTIC FUNCTION	EMISSION	CONNECTION	OUTPUT	MODEL	ORDER No.
Luminescence sensor	10-20 mm Vertical spot	M12 Connector	NPN/PNP	LD46-UL-715	955201000
	20-40 mm Vertical spot			LD46-UL-755	955201010
	30-50 mm Vertical spot			LD46-UL-735	955201020

ACCESSORIES

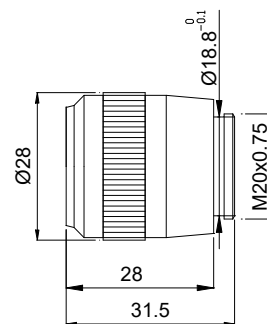
50 mm LENS



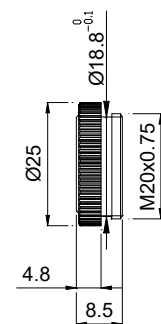
40 mm LENS
(LD46-UL-735)



22 mm LENS
(LD46-UL-755)



9 mm LENS
(LD46-UL-715)



MODEL	DESCRIPTION	ORDER No.
Lens No.9	glass lens with 9 mm focus	95ACC2670
Lens No.22	glass lens with 22 mm focus	95ACC1100
Lens No.40	glass lens with 40 mm focus	95ACC2740
Lens No.50	glass lens with 50 mm focus	S73030511

CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M12 Connector	5-pole, grey, P.V.C.	3 m	CS-A1-03-G-03	95ACC2110
		5 m	CS-A1-03-G-05	95ACC2120
		10 m	CS-A1-03-G-10	95ACC2140
	5-pole, U.L., black, P.V.C	3 m	CS-A1-03-U-03	95ASE1170
		5 m	CS-A1-03-U-05	95ASE1180
		10 m	CS-A1-03-U-10	95ASE1190
		15 m	CS-A1-03-U-15	95ASE1200
		25 m	CS-A1-03-U-25	95ASE1210
	50 m	CS-A1-03-U-50	95A252700	

Rev. 03, 04/2019



LD46-UL
Luminescence sensor

INSTRUCTION MANUAL

CONTROLS

OUT LED (yellow)

The yellow LED indicates the output status.

READY LED (green)

During functioning, the green LED permanently ON indicates a normal operating condition and blinking indicates an output overload condition.

DELAY LED (orange)

The orange DELAY LED ON indicates the timing function activation on the digital output.

KEYLOCK LED (orange)

The orange KEYLOCK LED ON indicates the active keyboard status.

BARGRAPH

The reading sensitivity level is signalled on the bargraph.

SET PUSH-BUTTON (white)

The pressing of the SET push-button unlocks the keyboard, memorises the sensitivity and activates the digital output timing.

+ (red) and - (green) push-buttons

The sensitivity adjustment procedure is activated by pressing the + and - push-buttons.

See the "SETTING" paragraph for setup procedure indications.



INSTALLATION

The sensor can be positioned by means the two Ø3.5mm housing's holes using or threaded M5 holes with 6 mm max. depth.

Warning: the use of excessively long screws can damage the product.

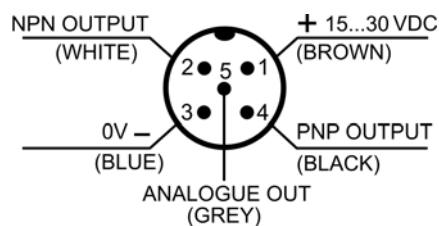
The connector can be oriented at five different positions by rotating the block. The position chosen is guaranteed by a mechanical blocking system.

The rotation can be carried-out even after sensor installation as the connector block is completely self-contained inside the housing.

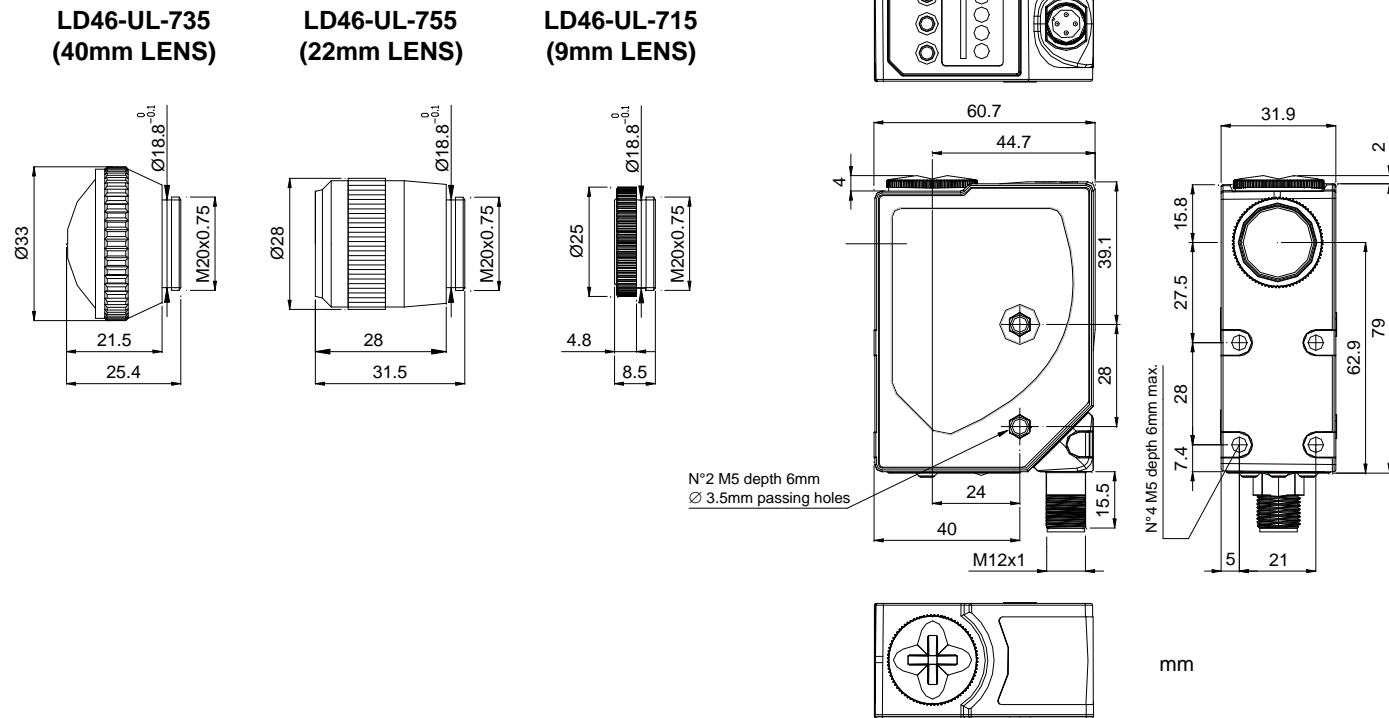


Operating distance is rated starting from the lens front face.

CONNECTIONS



DIMENSIONS



TECHNICAL DATA

Power supply:	15...30 Vdc limits value
Ripple:	2 Vpp max.
Consumption (output current excluded):	50mA max @ 24Vcc
Output:	1 PNP output 1 NPN output
Output current:	100 mA max.
Output saturation voltage:	≤ 2 V
Analogue output:	0.75 ... 5.5 V max.
Analogue output impedance:	2.2 kΩ (short-circuit protection)
Response time:	250 μs
Switching frequency:	2 kHz
Delay:	0 / 20 ms selectable (no-delay default configuration)
Indicators:	OUT LED (yellow) / READY LED (green) DELAY LED and KEYLOCK LED (orange) 5-segment bargraph
Push-buttons:	+, SET, -
Operating temperature:	-10 ... 55 °C
Storage temperature:	-20 ... 70 °C
Electric shock protection:	double insulation
Operating distance:	10 ... 20 mm (LD46-UL-715) 20 ... 40 mm (LD46-UL-755) 30 ... 50 mm (LD46-UL-735)
Minimum spot dimension:	2 x 8 mm @ 10mm (LD46-UL-715) 3x11 mm @ 24mm (LD46-UL-755) 4x15 mm @ 50mm (LD46-UL-735)
Emission type:	UV 375nm LEDs, Class 1
Ambiente light rejection:	according to EN 60947-5-2
Vibrations:	0.5 mm amplitude, 10 ... 55 Hz frequency, per each axis (EN60068-2-6)
Shock resistance:	11 ms (30 G) 6 shock per each axis (EN60068-2-27)
Housing material:	Aluminium
Lens material:	Glass
Mechanical protection:	IP67
Connections:	M12 5-pole connector
Weight:	180 g. max.
AtEx 2014/34/EU:	II 3G EX nA II T6 ; II 3D EX tD A22 IP67 T85°C

SETTING

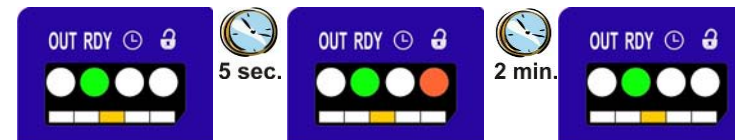
KEYLOCK function (patent-covered)

The KEYLOCK function deactivates the keyboard thus avoiding accidental changes in the sensor setting.

At sensor powering the keyboard is blocked (KEYLOCK LED OFF). To activate it, press SET for 5 seconds until the KEYLOCK LED (orange) turns ON.

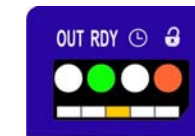
The keyboard is automatically blocked if not used for 2 minutes.

Unblock the keyboard to proceed with sensor adjustment.



NORMAL FUNCTIONING

During normal functioning a LED on the bargraph visualises the sensitivity level.



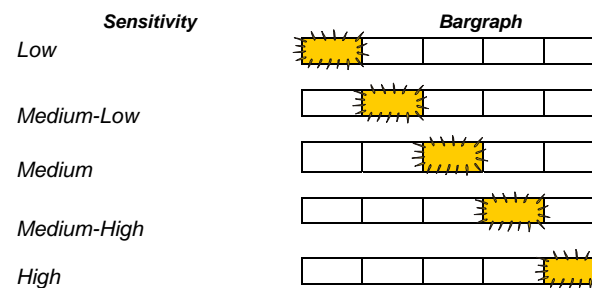
SENSITIVITY ADJUSTMENT

This mode regulates the sensor reading sensitivity, i.e. the capability of detecting objects with different luminescence degrees.

The sensitivity is increased or decreased by pressing the + or - push-buttons.

The adjustment speed is increased by keeping the + or - push-buttons pressed.

The sensitivity level which is being set blinks on the bargraph during this phase.

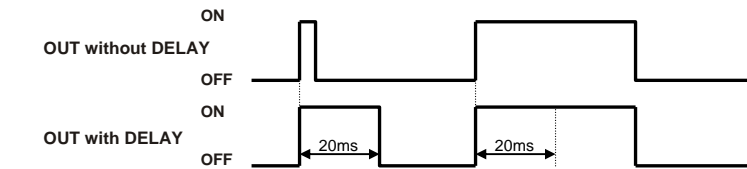


Press SET to memorise the new threshold value or wait 30sec for automatic save.

DELAY SETTING

The DELAY extends the minimum active output status duration to 20ms, allowing even slower interface systems to detect shorter pulses.

The delay is signalled by the corresponding orange LED ON.



Delay activation

- Press SET for 2 sec until DELAY LED turns ON.



Delay deactivation

- Press SET for 2 sec until DELAY LED turns OFF.



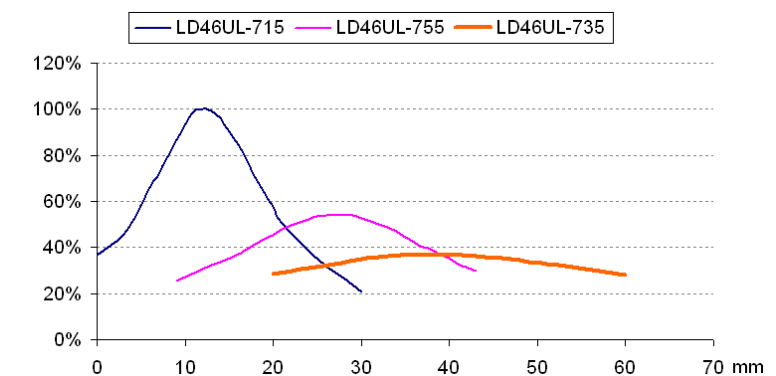
OUTPUT OVERLOAD

The digital output overload is signalled by the rapid blinking of the READY LED.

ANALOGUE OUTPUT

The analogue output supplies a voltage proportional to the signal received by the sensor. The voltage supplied is 0.75 ÷ 5.5V.

DETECTION DIAGRAM



The sensors are NOT safety devices, and so MUST NOT be used in the safety control of the machines where installed.

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