



# H3257 LED Light Source

## User Manual

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## About these operating instructions

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Periodically there will be updates to this manual. The latest version is available on our website or by calling the number on the back page of this publication.

This LED light source must not be installed or used in a machine or system that does not comply with the machinery directive 2006/42/EC.

This LED light source was designed and manufactured to be installed as partly completed machinery into a machine or partly completed machine.

The instructions must be read and used by all persons who have the responsibility of installing and maintaining this LED light source.

These instructions must be retained and incorporated in the technical documentation for the machine or partly completed machinery into which the LED light source is installed.

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### CE marking

This LED light source is marked with the CE sign according to the EMC directive 2004/108/EC.

## Conventions used in this manual

All dimensions and specifications are shown in the format **mm [inches]** unless specified otherwise.

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## Language

These are the original instructions, written in English.

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## Theory of operation

The H3275 LED Light Source is used as a backlight for an optical sensor or camera in a web or strip guiding system. The H3257 provides uniform LED light output through a diffusing lens, which is captured by a sensor or camera to provide information about the material position. The device can be configured to emit 7.5 kHz light (pulsed) or DC light.

Factory-calibrated LED intensity levels can be easily selected by actuating a pushbutton switch. An internal dry-contact relay indicates the status of the light source.

## Instructions for use

Problem-free and reliable operation of the H3257 requires that the system must be properly transported, stored, installed, and placed in operation. Proper operation and careful maintenance will ensure a long service life for your system.

Only persons who are acquainted with the installation, commissioning, operation, and maintenance of the system and who possess the necessary qualifications for their activities may work on the H3257. Note: The safety information may not be comprehensive.

Please note the following:

- The content of these operating instructions
- Any safety instructions on the device
- The machine manufacturer's specifications
- All national, state, and local requirements for installation, accident prevention, and environmental protection

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## Safety symbols

The safety instructions and symbols described in this section are used in these operating instructions. They are used to avoid possible dangers for users and to prevent material damage.



### SIGNAL WORD

Source of danger and its results  
Avoiding dangers

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The signal word **DANGER** refers to the danger of death or serious bodily injuries.

The signal word **WARNING** refers to the danger of moderate to severe bodily injuries.

The signal word **CAUTION** refers to the danger of slight to moderate bodily injuries or material damage.

## Symbols used

The following safety identification symbols are used in these operating instructions.



WARNING/CAUTION - General danger or important note  
Reference to general hazards that may result in bodily injuries or damage to device or material.



DANGER - Danger due to voltage, electric shock  
Reference to danger of injury caused by electric shock due to voltage.



WARNING - Danger due to cutting  
Reference to danger of injury caused by sharp edges



Reference to important information

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## Basic safety information

### Proper use

The H3257 is intended to be installed indoors in proximity to a moving web or strip for the purpose of guiding the web material.

### Improper use

Operation outside the technical specifications

Operation in an Ex-area or intrinsically safe area

Outdoor operation

Any other use than the proper use shall be deemed inappropriate.

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## Hazards



### Installation and commissioning

WARNING - Death or injury can result from electrical shock.

Turn off and disconnect the power supply before connecting or disconnecting any cable connectors. Damage to the equipment caused by failure to do so may void the product warranty.

Tighten all cable connectors sufficiently to provide the required connection for the cable shielding.

Any component which is damaged must not be installed or put into operation.

The H3257 must be securely mounted before being placed in operation.

Only replacement parts obtained from Fife may be used.

No modifications may be made to the H3257.

Do not place cables under mechanical strain.

*continued*

*Hazards - continued*

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**Operation**

WARNING - Death or injury can result from static electric shocks.

Moving webs of material can produce large static voltage potentials. To protect against electric shocks, the system must be properly grounded. *See Figure 1, page 3-2.*



WARNING - Injury can result from cutting  
Keep hands away from moving web material.

**Maintenance and repair**

WARNING - Death or injury can result from electrical shock.

Turn off and disconnect the power supply before connecting or disconnecting any cable connectors. Damage to the equipment caused by failure to do so may void the product warranty.

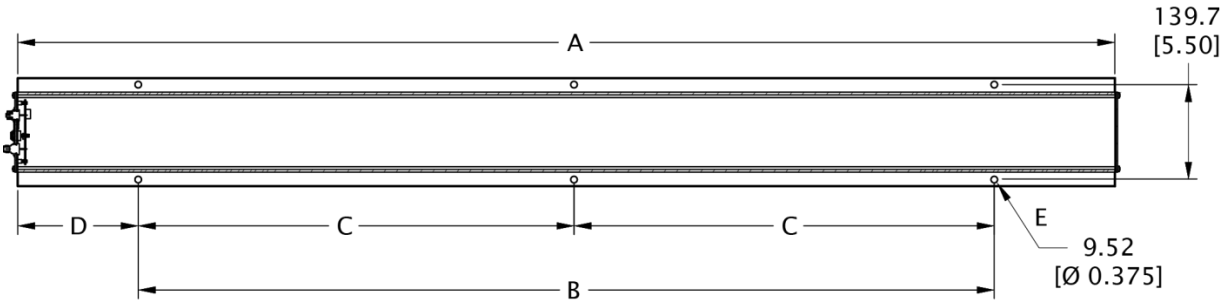
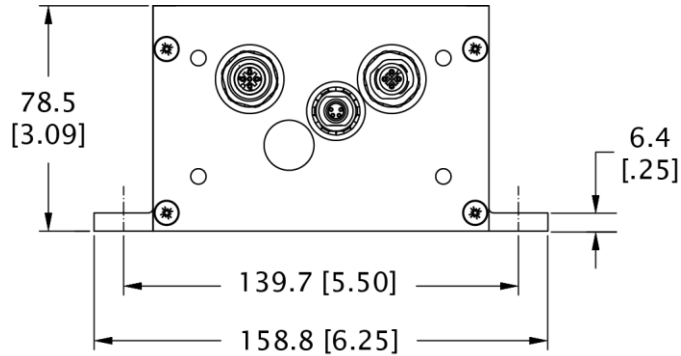
**Decommissioning**

The H3257 must be disposed of in accordance with all the applicable national, state and local regulations.



Product dimensions

Drawings not to scale



Part No.	Description	A	B	C	D	E*
290001165	Diffused LED Light Source 24.5"	619.8 [24.40]	457.2 [18.00]	X	81.3 [3.20]	4
290001198	Diffused LED Light Source 47"	1192.8 [46.96]	X	50.8 [20.00]	88.4 [3.48]	6
290001197	Diffused LED Light Source 92"	2336.8 [92.00]	X	990.6 [39.00]	177.8 [7.00]	6

Table 1. H3257 Part numbers and dimensions

\* E indicates number of mounting holes

Power supply

Fife part no. 29LH6610-PWR-80W (recommended)

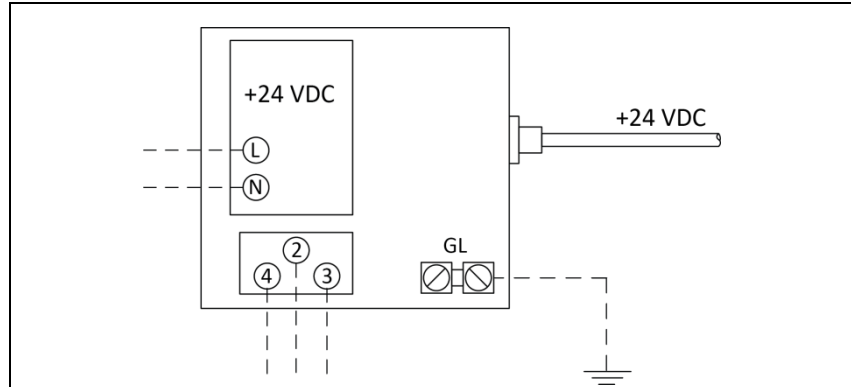


Figure 1. +24 VDC Power supply.

L	Line	
N	Neutral	
2	NC (normally closed)	Power supply relay; driven by the status signal
3	NO (normally open)	
4	C (common)	
GL	Ground lug	



Ground to building ground bonding system per N.E.C. or local codes.

Alternate power supply

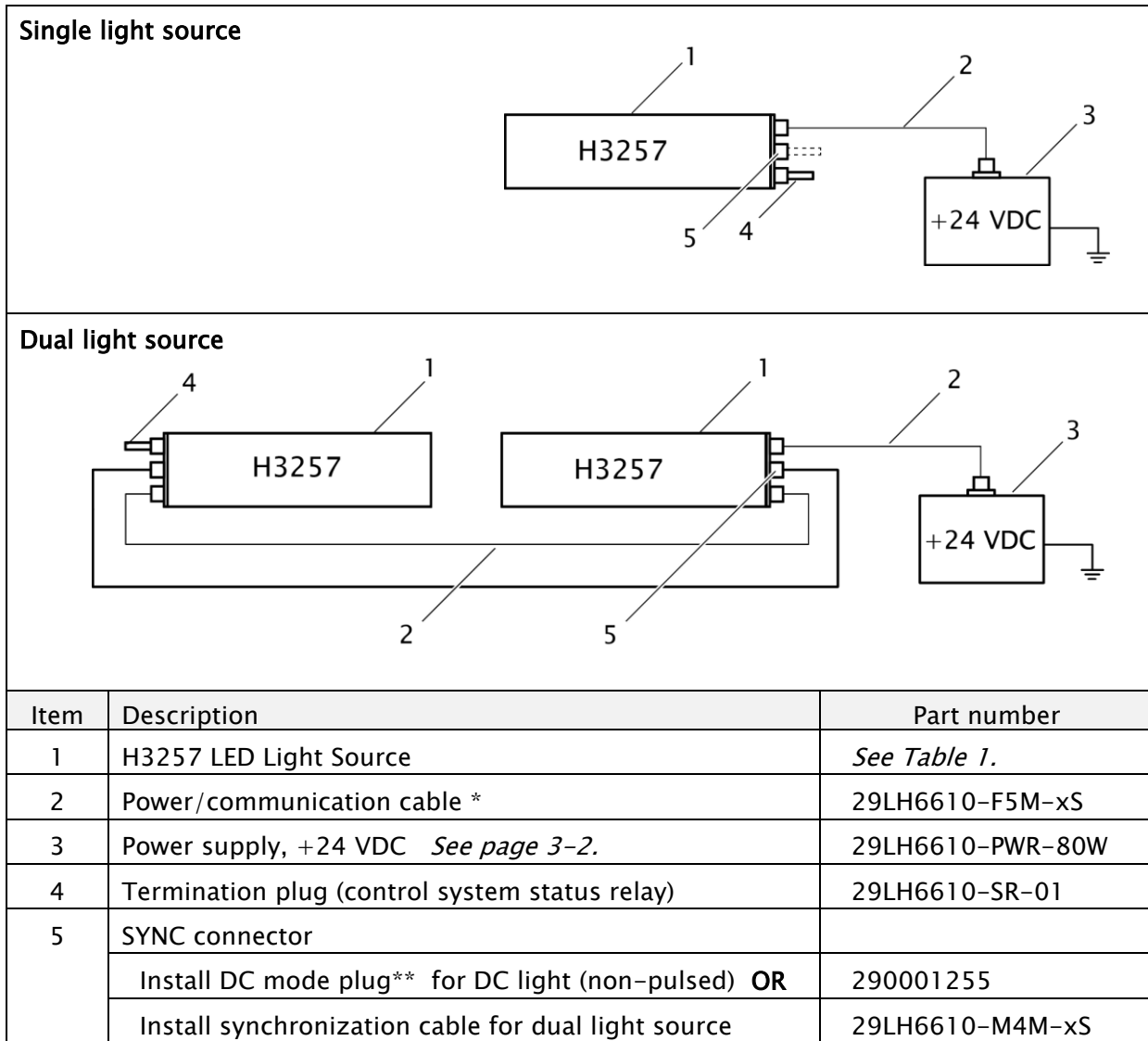
If using a different power supply, connect the H3257 using a 5-pin M12 female-to-flying-lead cable. See Table 2.

You will need to determine how devices in your system will respond to the status signal.

Pin	Wire Color	Function
1	Brown	+10 to 30 VDC
2	White	No connection
3	Blue	Common
4	Black	No connection
5	Gray	Status

Table 2. Wiring information for 29LH6610-F5L-xS cable.

## Components and cable connections



\* Use for connecting to power supply or another H3257.

\*\* One DC mode plug is required for each H3257 LED Light Source

Cable part numbers: x= length in meters

Figure 2. Components and cable connections.

## Using the H3109 Discriminating Detector

There are special considerations when the H3257 is used as a light source for the H3109 sensor.

1. Always set the H3257 to intensity 8 (default).
2. Always set the H3257 to operate in pulsed mode (default).
3. A  $4.7\text{k}\Omega$  (1/4 W) load resistor must be placed across the H3109 output and COM.

On most controllers, the resistor can be placed across the detector input (such as DET 1 or DET2) and the COM terminals at the controller. *See Figure 3.*

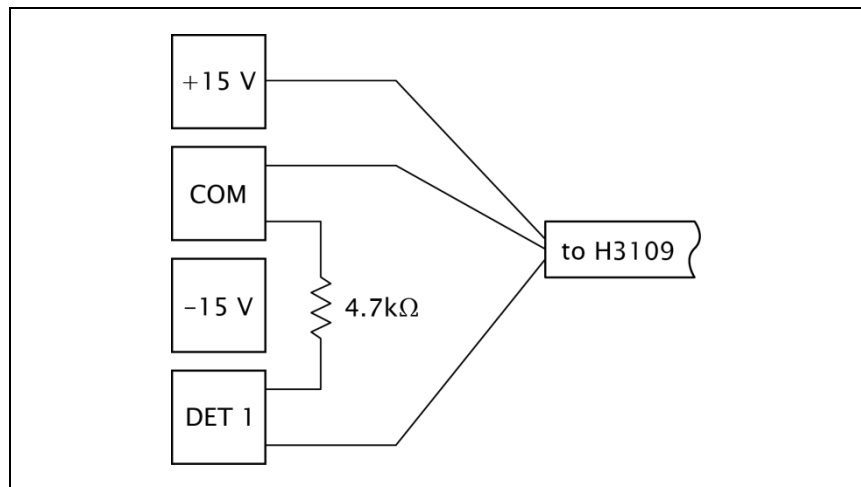


Figure 3. Example of  $4.7\text{k}\Omega$  resistor installed on controller terminals.

## Operation

### LED intensity settings

The H3257 functions as a stand-alone light source using factory calibrated light intensity/profile settings.

Factory calibration sets the drive level of each LED to the same value for each of eight profile settings. *See Table 3.*

Intensity setting	Relative LED drive level
1	30%
2	40%
3	50%
4	60%
5	70%
6	80%
7	90%
8	100% (default)

**Table 3. H3257 intensity settings**

### Intensity setting versus sensor gap

Gap (sensor to light source)	Intensity setting
2 feet [61 cm] or less	2*
Greater than 2 feet [61 cm]	8

\* Harsh or very dusty environments may require a higher intensity setting.

(Keep the lens clean. *See Maintenance; page 5-1.*)



When used with the H3109 Discriminating Detector, the intensity must be set to level 8. *See page 3-4.*

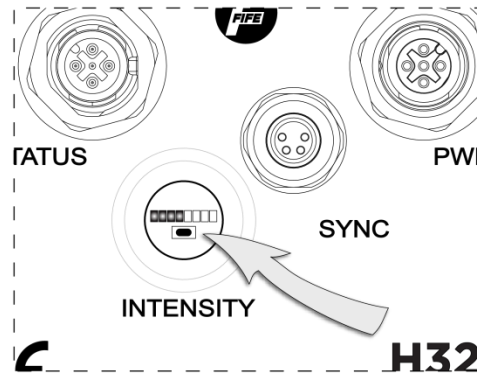
## Adjusting the light intensity



The H3257 must be powered on to change the intensity. The device will retain the selected intensity level between power cycles.

### Adjustment button

Adjust the intensity level with a small pushbutton located behind a hole plug on the front panel.



- Gently pry out the hole plug.
- Use a small, non-conductive tool to actuate the button.
- Each press of the button increases the intensity level by 10% of the maximum.
- Once the maximum intensity has been reached, the intensity will revert to Setting 1 on the next button press.

### LED bar graph



Next to the pushbutton is an 8-LED green bar graph.

Each lit LED in the bar graph represents one intensity level. This H3257 is set at intensity level 4.



### Dual light source only

This H3257 is operating as the slave.

In dual configuration, both light sources use the same intensity, which is controlled and displayed on the master light source.

## Enabling DC light mode

By default, the light emitted from the H3257 is pulsed at 7.5 kHz. When the H3257 is used as a light source for line scan or array cameras, use DC light mode.

To configure the H3257 for DC light mode, the DC Mode Plug must be installed on the 4-pin SYNC connector before turning on the power. *See page 3-3.*

One DC mode plug is required for each H3257 LED Light Source.

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## Enabling dual H3257 synchronization

The available lengths of the H3257 are sufficient to support most applications. If necessary, two light sources may be used to achieve the required length.

Dual light sources must be synchronized when used with a single sensor. This occurs automatically when a synchronization cable is installed between the 4-pin SYNC connector of each H3257 prior to turning on the power. *See page 3-3.*

Table 4 summarizes the behavior of the H3257 based on the configuration of the SYNC connector.

Quantity of H3257s	SYNC Connection (first H3257)	SYNC Connection (second H3257)	Resulting Mode
1	No connection	n/a	Pulsed light
1	DC mode plug	n/a	DC light (single)
2	DC mode plug	DC mode plug	DC light (dual)
2	29LH6610-M4M-xS (x= length in meters)		Synchronized pulsed light

Table 4. Summary of H3257 light modes based on SYNC connector



Synchronization is not required if each H3257 is to operate in DC light mode.

A power cycle must occur for synchronization or a light mode change to occur.

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Problem	Status contact	Possible cause	Solution
Cannot calibrate detector	Closed	Light intensity may not be sufficient.	Increase the intensity level.
		DC light mode may be enabled.	Remove the DC mode plug from the SYNC connector, if present.
No light output	Open	n/a	Contact Maxcess for assistance.
Dim section of light	Open	n/a	
Damaged or broken lens	n/a	n/a	

## H3257 faults and status contact

The H3257 provides a contact closure in series with the 5-pin power connectors to indicate an internal fault to other devices in the system.

The contact is closed during normal error-free operation. The contact will be open under any of the following conditions:

- Loss of power
- Internal microcontroller error
- Internal power supplies out of tolerance
- LED fault (entire 11" section of LEDs are open/short circuit)



## Maintenance

In some environments, dust and dirt will build up on the lens of the H3257, reducing its effective light output.

### Daily

Wipe the lens of the H3257 with a clean, damp, soft cloth. Use ordinary soap and warm water.



**Do not use abrasive materials or chemicals on the lens.**

Damage may occur.

**Do not soak or spray the detector with fluids.**

Electrical damage may occur.

## Spare parts

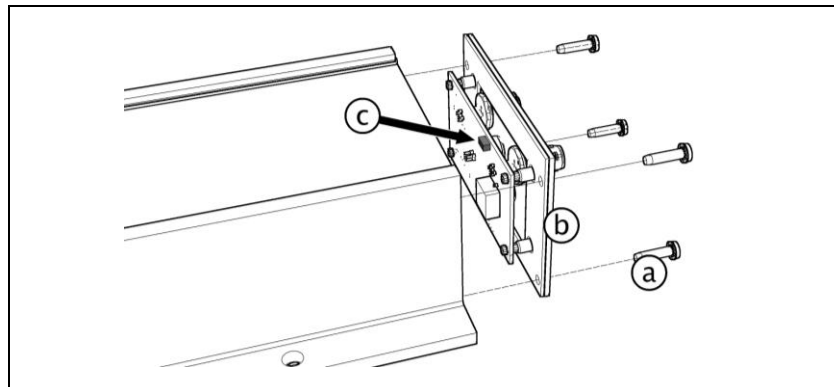
These parts are available from vendor.

Description		Part No.
4A slow-blow fuse	Littelfuse Inc.	0454004.MR
Circular hole plug	McMaster-Carr	9688K251

## Replacing a fuse



**WARNING** - Death or injury can result from electrical shock. Turn off and disconnect the power supply before performing repairs.



1. Remove four screws (a).
2. Pull end plate connector assembly (b) away from the unit.
3. Pull the fuse (c) out of the holder and install new fuse.
4. Reinstall the end plate assembly.

## Specifications

Compatible Sensors	H3218, H3218E, H3118, H3183, H3109, and DAC-005
Available Light Modes	Pulsed 7.5 kHz (single) This is the default. DC Light (single or dual) Synchronized (dual)
Voltage input	10 VDC to 30 VDC
Power requirements	5 W per 12 inches of product length
Protection class	IP65
Operating temperature	-20 to 50 °C (-4 to 122 °F)
Lens material	Polycarbonate
Status output	Contact closure indicates normal operation
Connectors	Two (2) for power One (1) for synchronizing two light sources
Fuse	4A slow-blow (Littelfuse Inc / 0454004.MR)

## Return shipment instructions

If it is necessary to return the product for service, package the unit carefully to prevent damage during shipment. If possible, use the original shipping containers.

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## Service requests and replacement parts

When ordering replacement parts, please indicate, where possible, part number, drawing number and model description.

To request service or to get replacement parts, contact one of the addresses listed below.

Maxcess  
222 West Memorial Rd.  
Oklahoma City, OK, 73114, USA  
Phone: +1.405.755.1600  
Fax: +1.405.755.8425  
Web: [www.maxcessintl.com](http://www.maxcessintl.com)

Fife-Tidland GmbH  
Max-Planck-Strasse 8  
65779 Kelkheim  
Deutschland  
Telefon: +49.6195.7002.0  
Fax: +49.6195.7002.933  
Web: [www.maxcess.eu](http://www.maxcess.eu)



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