INSTALLATION INSTRUCTIONS

Light Curtain–DUO

MLC-K36-DUO, MLC-K72-DUO

WARNING

Read and understand all instructions before beginning installation. Disconnect power to motor and test upon completion. Photo optics should be installed by qualified personnel to ensure the requirements herein have been met. Keep these instructions with the installation. Always abide by local and national electrical code specifications when wiring accessories to motor controls.

The **Light Curtain–DUO** provides expanded vertical external entrapment protection for the interior of motorized commercial overhead doors by replacing a single-beam photo eye with a vertically stacked array of infrared photo-optic elements. MLC-DUO is approved for use as a monitored primary external entrapment protection device when installed with a monitored commercial door operator (CDO) manufactured in 2010 or later. The device supports **dual universal outputs:** 2-wire pulsed, normally closed, and normally open output configurations to allow compatibility with a wide range of CDO inputs. When configured as the primary monitored device and installed in accordance with these instructions, MLC-DUO meets UL 325 requirements. Refer to the commercial door operator manufacturer's documentation for specific wiring, connection, and configuration requirements. **MLC-DUO is intended for dry environments.**

CONTENTS

- **MLC-K36-DUO:**
  - (1) 36" Emitter
  - (1) 36" Receiver
  - (4) Mounting brackets
  - (4) Extension mounts
  - (1) Bracket assembly hardware
- **MLC-K72-DUO:**
  - (1) 72" Emitter
  - (1) 72" Receiver
  - (4) Mounting brackets
  - (4) Extension mounts
  - (1) Mounting hardware

REQUIRED

- Hand tools for installing brackets
- Hardware appropriate for mounting to a wall, track, or other nearby surface
- Commercial door operator manual

OPTIONAL

- Alternate mounting method, if desired

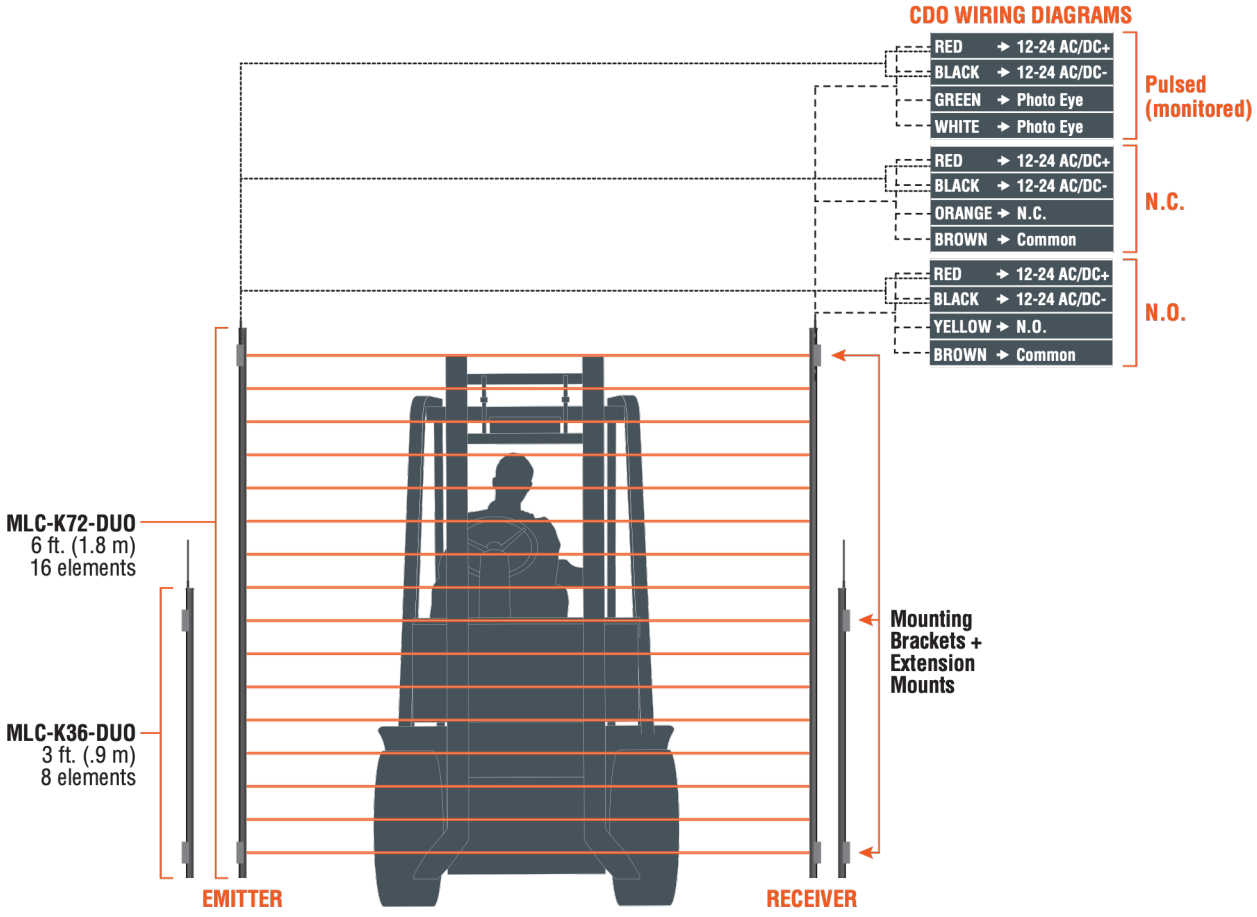


IMAGE 1: Emitter and Receiver units installed showing mounting locations and wiring diagram options

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I. INSTRUCTIONS

1. Turn **OFF** power to the CDO before beginning installation.

2. **Select Mounting Location**
   Determine mounting locations for the light curtain units outside the door opening—typically on the interior wall surface or door tracks/guides. Ensure no portion of the moving door obstructs the infrared beams throughout the full range of door travel.
   - **Tip:** The included mounting brackets and extension mounts allow for flexible installation configurations to accommodate varying mounting surfaces and site conditions. Position brackets and mounts as required for the selected installation location.

3. **Assemble Mounting Hardware**
   Assemble the extension mounts and mounting brackets using the provided hardware, as required. IMAGE 2

4. **Install Mounting Assemblies**
   - Secure the assemblies to the mounting surface using appropriate fasteners (not provided). Install two assemblies per unit, positioned approximately 6–12 inches from the top and bottom of the unit. IMAGE 1
     - **Tip:** To position the lowest photo-optic element at 6 inches above the floor in accordance with **UL 325 requirements**, mount the assemblies so the bottom of the light curtain housing is no more than 2 inches above the finished floor. IMAGE 4
   - Ensure all brackets are vertically aligned.

5. **Install Emitter & Receiver Units**
   - **Identify** the **emitter** (2 wire cable) and the **receiver** (7 wire cable).
     - **Tip:** Before installing the emitter and receiver, gently squeeze the edges of the mounting brackets. This increases the tension on the units and ensures they remain suspended in the desired locations IMAGE 2C
   - Snap the units into the mounting brackets—wired end up. The flat surfaces, which contain the optical elements must face each other across the door opening. IMAGE 3
   - Verify that final placement maintains the required maximum height above the floor—for **monitored primary entrapment protection devices**.

6. **Wire the System to the CDO**
   Wire the emitter and receiver to the CDO using the wiring diagram and tables provided. IMAGE 1 / TABLE 1
   - **Note:** Wiring configurations vary by operator manufacturer. Always follow the CDO manual's requirements.

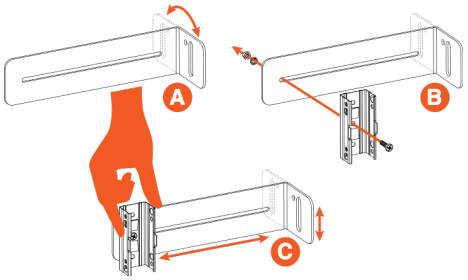


IMAGE 2: Connect the mounting bracket to the extension mount—height and depth adjustments shown

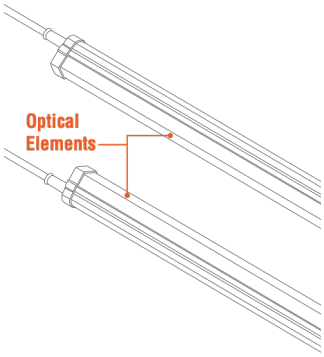


IMAGE 3: Orient the flat surfaces containing the optical elements toward each other across the door opening

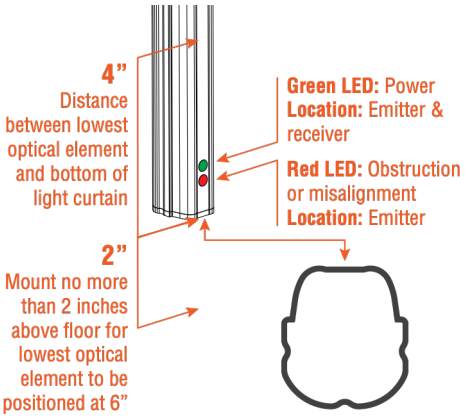


IMAGE 4: Detail of bottom of light curtain

TABLE 1: Emitter/Receiver Connections by Configuration

2-WIRE PULSED

UNIT	WIRE COLOR		OPERATOR INPUT
Emitter/ Receiver	Red	→	12-24 VAC/DC+
	Black	→	12-24 VAC/DC-
Receiver	Green	→	Pulsed photo eye
	White	→	Pulsed photo eye

NORMALLY CLOSED

UNIT	WIRE COLOR		OPERATOR INPUT
Emitter/ Receiver	Red	→	12-24 VAC/DC+
	Black	→	12-24 VAC/DC-
Receiver	Orange	→	N.C. reverse
	Brown	→	Common

NORMALLY OPEN

UNIT	WIRE COLOR		OPERATOR INPUT
Emitter/ Receiver	Red	→	12-24 VAC/DC+
	Black	→	12-24 VAC/DC-
Receiver	Yellow	→	N.O. reverse
	Brown	→	Common

7. **Testing & Indicators** TABLE 2
   a. Restore power to the CDO.
   b. Confirm that the green LED indicators at the bottom of both the emitter and receiver units turn on, indicating power.
   c. The light curtain has a wide acceptance angle and typically aligns upon power-up. When the emitter and receiver are aligned, the red receiver LED indicator will be off. If the red receiver LED indicator remains on, ensure the optical elements are facing each other and remove any obstructions from the sensing field.
   d. Verify normal operation by activating the CDO in the close direction. Wave a hand through the door opening while the door is closing. When an obstruction is detected, the red receiver LED indicator will illuminate, and the door will reverse.
   e. When normal function is confirmed, the system is operational.

TABLE 2: Normal Function of the LED Indicators

Emitter	● **Green:** Power
Receiver	● **Green:** Power ● **Red:** Obstruction or misalignment

II. TECH SUPPORT

For additional assistance, contact Miller Edge Tech Support: 800-220-3343

III. GENERAL SPECIFICATIONS

PERFORMANCE	
Operating Range	8-32 ft. (2-10 m)
Maximum Ambient Light	>100,000 lux
Aperture Angle	EM: ±8° RX: ±15°
Operating Temperature	-40°F to +140°F (-40°C to +60°C)
Agency Approvals	UL 325 Recognized Component, FCC

ELECTRICAL	
Power Source	Current limited 12-24 volts AC/DC
Current Consumption	<100 mA @ 24 volts DC
Output	2-wire pulsed, normally open, normally closed
Frequency	325 Hz.

	MLC-K36-DUO		**MLC-K72-DUO**	
PHYSICAL				
Vertical Coverage	36 in. (~1 m)		72 in. (~2 m)	
Number of Elements	8 elements		16 elements	
Dimensions	1 W x 38 H x 1.1 D in. (25 mm x ~1 m x 28 mm)		1 W x 74 H x 1.1 D in. (25 mm x ~2 m x 28 mm)	
Weight	EM: 32 oz.	RX: 32 oz.	EM: 64 oz.	RX: 64 oz.
Housing Material	PVC over aluminum		PVC over aluminum	
LED Indicators	EM: Power	RX: Power, obstruction	EM: Power	RX: Power, obstruction
Cable Length	EM: 50 ft. (15.24 m)	50 ft. (15.24 m)	EM: 50 ft. (15.24 m)	50 ft. (15.24 m)
Mounting	(4) Universal mounting brackets (4) Extension mounts		(4) Universal mounting brackets (4) Extension mounts	
Degree of Protection	Not intended for outdoor use		Not intended for outdoor use	

IV. FCC COMPLIANCE

Interference Statement (Class B Digital Device)

This equipment has been tested and found to comply with the limits for a **Class B digital device**, pursuant to **Part 15 of the FCC Rules**. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Modification Warning
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

V. MAINTENANCE

Inspect the photo-optic components at least once per month for damage to housings, mountings, cables, and connection points. Refer to the operator manufacturer's manual for additional maintenance instructions.

VI. REPLACEMENT

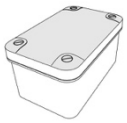
To replace a Miller Edge photo-optic component, contact your Miller Edge sales representative. Do not attempt repairs; unauthorized repairs will void the manufacturer's warranty.

VII. WARRANTY

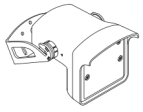
The **Light Curtain–DUO** (**MLC-K36-DUO**, **MLC-K72-DUO**) carries a **2-year warranty** from the date of shipment from Miller Edge. The warranty covers defects in materials or workmanship under normal use, as determined by an authorized Miller Edge representative. Installation or labor costs are not covered. Improper installation or misuse voids this warranty. All installation and testing instructions must be followed for proper operation and warranty coverage.

VIII. ACCESSORIES

Contact your Miller Edge sales representative for photo optics accessories:



JUNCTION BOXES



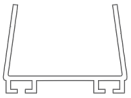
MOTION SENSORS



MODULES



WEATHER SEALS



MOUNTING CHANNELS



WARNING LABELS