

INSTRUCTIONS

Cone of Vision Tester for X-Series Flame Detectors Q1201C Laser Holder and Laser

APPLICATION

The Q1201C is used with Det-Tronics X-Series Flame Detectors (X3301, X3302, X2200, X5200, X9800) for identifying the detector's cone of vision (COV). The Q1201C easily attaches to the front of the detector for use during system startup, checkout and re-alignment.

DESCRIPTION

Q1201C LASER HOLDER

The Q1201C is designed to hold the Laser, which projects a red beam of laser light to show the exact center of the cone of vision of the detector. Two additional holding positions are available for locating the outside edges of the cone of vision for either 30 degrees off-center or 45 degrees off-center. While the laser is being used to locate the perimeter of the cone of vision, it can be rotated 360 degrees to identify the



entire area of coverage of the flame detector. Figure 1 shows the Q1201C Laser Holder with the Laser positions indicated.

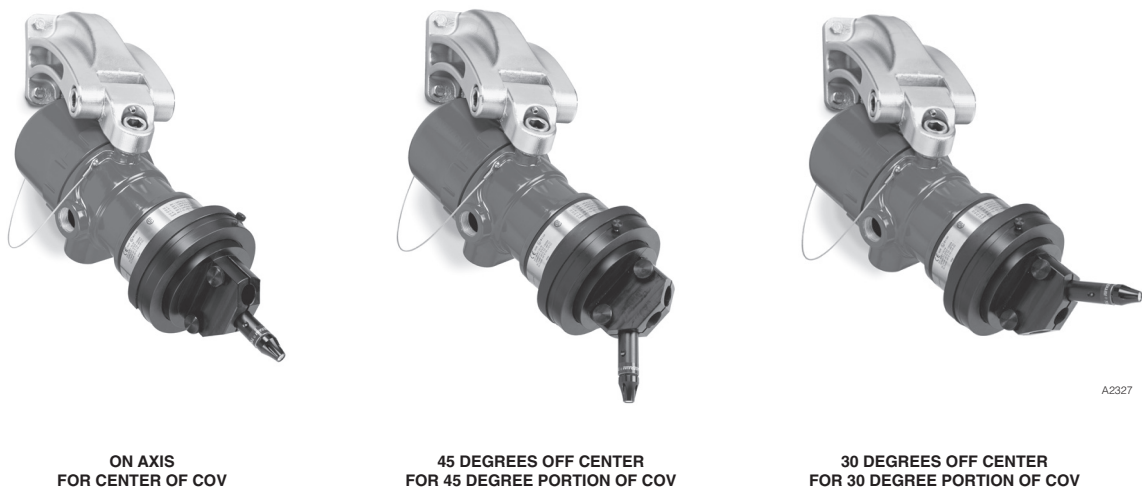


Figure 1—Laser Positions in Q1201C Laser Holder

LASER

The battery powered Laser projects a red beam of light and has a switch for turning the device on and off. A battery is included with the unit.

WARNING

Do not allow Laser to shine directly in eyes.

WARNING

The Laser is not an explosion-proof or intrinsically safe device. Do not use in areas that require these ratings. Do not use in combustible atmospheres.

SPECIFICATIONS

Q1201C LASER HOLDER

DIMENSIONS—

See Figure 2.

SHIPPING WEIGHT—

2.0 pounds (0.95 kilogram).

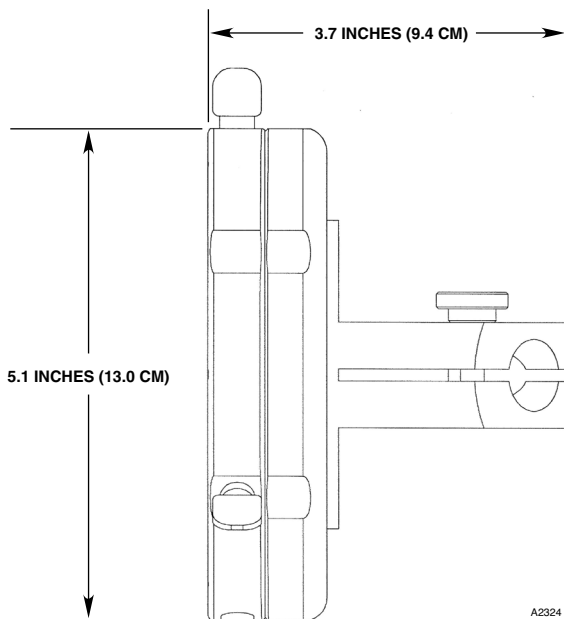


Figure 2—Q1201C Dimensions

LASER

OPERATING VOLTAGE—

3 volts dc.

LASER TYPE—

Visible laser diode.

OUTPUT POWER—

Less than 5 milliwatts.

WAVELENGTH—

660 to 680 nanometers.

BEAM COLOR—

Deep red.

EFFECTIVE RANGE—

100 yards (91.5 meters) in dusk to dawn light conditions.

BATTERY LIFE—

(TR 175 battery) Over one hour of continuous duty.

OPERATING TEMPERATURE RANGE—

+10°F to +125°F (−12°C to +51°C).

DIMENSIONS—

See Figure 3.

SHIPPING WEIGHT—

1.0 pound (0.453 kg).

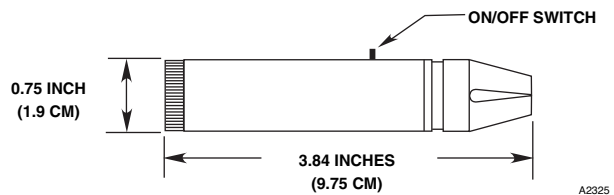


Figure 3—Laser Dimensions

DETERMINING CONE OF VISION

MOUNTING THE Q1201C LASER HOLDER

1. Mount the detector in accordance with the applicable detector instruction manual to survey the area requiring coverage.
2. Mount the Q1201C Laser Holder over the face of the detector. Tighten the thumb screw to hold the Q1201C securely in place.

DETERMINING THE CENTER OF THE DETECTOR'S CONE OF VISION

To determine the exact center of the cone of vision:

1. Slide the Laser into the center mounting hole on the Q1201C. Refer to Figure 1.
2. Turn the Laser on. **DO NOT allow the Laser to shine directly in eyes.** The laser beam "dot" indicates the center of the cone of vision. Adjust the flame detector swivel position accordingly, and tighten the swivel lock nut when the proper angle is achieved.

NOTE

It may be necessary to dim lights or perform this procedure at night in order to clearly see the laser beam. This is especially true where bright lights are present, in daylight, or where the cone of vision is being tested at extended distances.

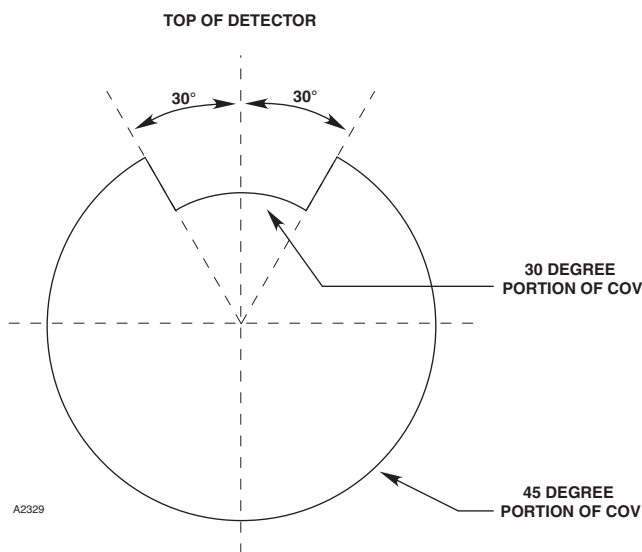


Figure 4—30 Degree and 45 Degree Portions of the Detector's Cone of Vision

DETERMINING THE CONE OF VISION PERIMETER

To determine the perimeter or outer limits of the cone of vision:

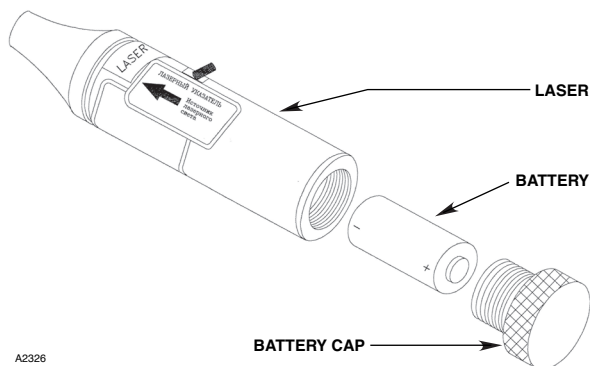
1. To test the 30 degree portion of the detector's cone of vision, slide the Laser into the 30 degree hole. To test the 45 degree portion of the detector's cone of vision, slide the Laser into the 45 degree hole. Tighten the appropriate thumb screw to hold the Laser securely in place. Refer to Figure 1.
2. Turn the Laser on. **DO NOT allow the Laser to shine directly in eyes.** The laser beam "dot" indicates a point on the perimeter of the cone of vision. Rotate the holder and observe the laser beam to determine the perimeter of the cone of vision.
3. Refer to Figure 4 for an illustration of the 30 degree and 45 degree portions of the COV.
4. Adjust the flame detector swivel position accordingly, and tighten the swivel lock nut when the proper angle is achieved.

NOTE

The cone of vision perimeter indicated by the Laser does not guarantee flame detection within the perimeter in all cases, nor does it necessarily exclude detection of flames outside the perimeter. Flame detection within the field of view is a function of fire size, fire type, and distance. The instruction manuals for the X-Series flame detectors show how detection range for a given fire size decreases near the perimeter of the field of view. Refer to the FM Appendix section in the applicable manual for details.

Contact Detector Electronics for additional information.

5. Turn the Laser off and remove it from the holder when testing is complete. Failure to turn off will deplete the batteries. Remove the Q1201C Laser Holder from the detector.



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Figure 5—Laser Battery

BATTERY INSTALLATION

1. These batteries can be used in the Laser:
Duracell TR175 (1)
Duracell PX28L (1)
Duracell DL1/3N (2)
Eveready 357 (4).
2. Unscrew the battery cap and remove the old battery (batteries).
3. Insert the new battery (batteries) with the polarity as indicated in Figure 5.
4. Replace battery cap.

TROUBLESHOOTING

Refer to the items below to correct problems in the field. If the problem cannot be corrected, return the unit to Det-Tronics for repair.

1. **Will not turn on.** Check battery position. If correct, replace battery.
2. **Will not turn off.** Return the Laser to Det-Tronics for replacement of switch.

MAINTENANCE

If the Laser becomes dirty, wipe dirt off the outside surfaces with a damp cloth. If the laser aperture is dirty, use a spray bottle with water. Blow off any water remaining on the lens. DO NOT clean or wipe the lens with a cloth, tissue, cotton swab, etc.

DEVICE REPAIR AND RETURN

Prior to returning devices, a Return Materials Authorization (RMA) number must be obtained. The process for obtaining this number can be found on the Det-Tronics website. You may also contact your authorized local sales representative or Det-Tronics Technical Support for assistance:

1.800.765.3473, ext.3 (M-F, 8 AM - 5 PM, Central Prevailing Time)
RMA@Carrier.com

NOTE

Shipments received without an RMA number clearly marked on the outside of the shipment will be refused.

Pack the unit properly. Det-Tronics reserves the right to apply a service charge for repairing returned product damaged as a result of improper packaging.

Return all equipment transportation prepaid to the factory in Minneapolis.

ORDERING INFORMATION

When ordering, specify:

Part Number	Description
007255-001	Q1201C Laser Holder for X-Series Flame Detectors
006097-001	Laser



Environmental Protection

Waste electrical products should not be disposed of with industrial and commercial waste. Please recycle where facilities exist. Check with your Local Authority or the local Detector Electronics office for recycling advice.

Specifications subject to change without notice.

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Det-Tronics manufacturing system is certified to ISO 9001—the world's most recognized quality management standard.



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