# CSI SPECIFICATION SECTION 8.

**SECTION (08460] SENSORS FOR AUTOMATIC DOORS**

PART 1 - **GENERAL**

* 1. SUMMARY
		1. This Section includes the following types of automatic entrance/ exit door sensors:
			1. Exterior and interior, swing, slide and fold door applications.
			2. Entrance and exit applications.
		2. Related Sections:
1. Division 16 Sections for electrical connections including conduit and wiring for automatic entrance door operators.
2. Division 08.71.13 and 08.71.16 for door hardware connections for automatic doors.
	* 1. REFERENCES
3. Underwriters Laboratories (UL) UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems
4. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA)
5. ANSI/BHMA A156.10: American Standard for Power Operated Pedestrian Doors
6. American Association of Automatic Door Manufacturers (AAADM)
	1. DEFINITIONS
		1. Safety Device: A presence sensor device that upon detection, sends a signal to the automatic door system to prevent a door from opening or closing, as appropriate.
		2. Activation Device: A presence sensing device that, when actuated, sends a signal to the automatic door system to open the door, re-open or hold a door open, as appropriate.
	2. PERFORMANCE REQUIREMENTS
		1. Provide a safety beam system utilizing point to point active near infrared technology that provides detection in or near the moving path of a slide or fold door, or, on the swing side of a swing door in conjunction with an Overhead Presence Sensor.
		2. **For Slide and Fold Door applications**: upon detection, system will provide a signal to the door control to hold the door in the full-open position, or, reactive the door to the open position on the closing cycle.
		3. **For Swing Door applications:** when used in conjunction with an Overhead Presence sensor on the swing side of the door, upon detection on the closing cycle, system will provide a signal to the door control to inhibit reactivation of the door until the door reaches the full closed position.
		4. Presence Detection: Point to point Active Infrared.
		5. Each System contains one OS-12 CT controller with one or two emitter/receiver beam head sets and cable assemblies with quick disconnects.
7. Response Time: approximately 0.1 Sec from the point of beam cutoff.
8. OS-12 CT System shall be capable of meeting monitoring requirements set forth in **ANSI/BHMA A156.10 (2017) section 8.1.4** when utilized with a compatible monitor capable Door Controller.
	1. QUALITY ASSURANCE
		1. Installer Qualifications: Manufacturer's authorized representative who is an AAADM certified inspector and employed by a company who regularly engages in the installation and service of pedestrian automatic doors as its primary business and holds a certification from the manufacturer.
		2. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility that specializes in automatic door sensor devices.

1 Product must be compliant to applicable ANSIBHMA Standard A156.10 when inspected by an AAADM certified inspector.

* 1. COORDINATION
		1. Electrical System: Coordinate layout and installation of sensors systems to automatic entrance door assemblies with connections to power supplies and other electrical component systems as supplied by others.
	2. WARRANTY
		1. Automatic Entrance Door Sensors shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.
		2. During the warranty period the Owner shall engage a factory-trained automatic door installer/ service personnel who hold a valid AAADM certificate: technician to perform necessary adjustments, service and affect repairs during warranty period.

PART 2 - **PRODUCTS**

* 1. AUTOMATIC ENTRANCE DOOR SENSOR
		1. Acceptable Manufacturer: OPTEX Inc., 10741 Walker Street, Suite 300, Cypress, CA 90630, 800-877-6656. www.optexamerica.com. (Basis of Design)
	2. PRODUCT
		1. Product Shall be OPTEX OS-12 CT SAFETY BEAM SYSTEM; Comprised of one OS-12 CT controller and one or two SM-7 HC (23’ cable) or SM-10 HC (32’-10” cable) emitter/receiver beam head set with quick disconnect harness and mounting hardware.
		2. Requirements:
	3. Maximum installation distance: < 32’-10” measured from face of Emitter to Face of Receiver.
	4. Detection method: Point to Point near Infrared light beam.
	5. Power supply: 12-24 VAC, 12-30 VDC, 160 mA max.
	6. Test input: Opto Coupler voltage 5-30 VDC, 6mA max (30 VDC).
	7. Safety Output: 50 V 0.3A (resistive load), N.O./N.C switchable.
	8. Response time: approximately 0.1 sec from the moment of beam cutoff.
	9. Relay hold time: Approximately 0.5 Sec.
	10. Operating temperature: -4 degrees F to +131 degrees F.
1. **OS-12 CT SAFETY BEAM SYSTEM** shall be capable of meeting safety beam requirements described in **ANSI/BHMA A156.10** section **8.2** for swing doors, **8.3** for slide doors and **8.4** for fold doors.
2. OS-12 CT System shall be capable of meeting monitoring requirements set forth in **ANSI/BHMA A156.10 (2017) section 8.1.4** when utilized with a compatible monitor capable Door Controller.
3. Optional Accessories: PP-S mounting plates (Silver), OS-BH (2 pcs.) sensor head holder, PO-C (2 pcs.) One push outer plate.

PART 3 - **EXECUTION**

* + 1. INSPECTION
			1. Examine conditions for compliance with requirements for installation tolerances.
	1. INSTALLATION

A. Do not install damaged components.

* + 1. FACTORY INSTALLED AND ON-SITE INSTALLED UNITS
			1. Install in jamb or adjacent surface in a location as indicated in ANSI/BHMA A156.10 Section 8 for specific application. Conceal fasteners to the greatest extent possible.
			2. Shall be installed and inspected by a certified AAADM inspector for compliance with ANSI/BHMA A156.10. Ensure to place appropriate AAADM Label and sticker in the appropriate location for the type of door system selected.
			3. Door Operators: Connect door operators to electrical power distribution system as specified in Division 16 Sections.
		2. FIELD QUALITY CONTROL
			1. An AAADM certified inspector shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards. AAADM recommends an annual inspection of each automatic door thereafter.
		3. ADJUSTING
			1. Adjust door operators, controls, and hardware for smooth and safe operation, for weather-tight closure, and complying with requirements in ANSI/BHMA A156.10 and other applicable ANSI/BHMA standards.
	1. WARRANTY
		+ 1. One year warranty shall be issued from time of installation followed by an AAADM certified inspection for compliance with ANSI 156.10. Ensure to place appropriate AAADM labels and completed inspection stickers in the appropriate place for the type of door system selected.