

2 Appendix B – Particular Specifications

3) Fire Alarm System

SD355(A) Series

Addressable Photoelectric Smoke Detectors



Addressable Devices

General

The SD355(A), SD355T(A), and SD355R(A) addressable, low-profile plug-in photoelectric detectors use a state-of-the-art photoelectric sensing chamber with communications to provide open area protection and are used exclusively with Fire•Lite's Addressable Fire Alarm Control Panels (FACPs). The SD355T(A) adds thermal sensors that will alarm at a fixed temperature of 135°F (57°C). Since these detectors are addressable, they will help emergency personnel quickly locate a fire during its early stages, potentially saving precious rescue time while also reducing property damage. Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available as an optional accessory, PN RA100Z(A). The SD355R(A) is a remote test capable detector for use with D355PL(A) or DNR(A)/DNRW duct smoke detector housings.



SD355(A) in B210LP(A) Base

Features

SLC loop

- Two-wire loop connection.
- · Unit uses base for wiring.

Addressing

- Addressable by device.
- Rotary, decimal addressing: 01 99 with MS-9200 series, and 01 – 159 with MS-9600 series.

Architecture

- Unique single-source, dual-chamber design to respond quickly and dependably to a broad range of fires.
- · Sleek, low-profile design.
- · Integral communications and built-in type identification.
- Built-in tamper-resistant feature.
- Removable cover and insect-resistant screen for simple field cleaning.

Operation

- Withstands air velocities up to 4,000 feet-per-minute (20 m/ sec.) without triggering a false alarm.
- Factory preset at 1.5% nominal sensitivity for panel alarm threshold level.
- Visible LED "blinks" when the unit is addressed (communicating with the fire panel) and latches on in alarm.

Mechanicals

- Sealed against back pressure.
- Direct surface mounting or electrical box mounting.
- Mounts to: single-gang box, 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box, or 4.0" (10.16 cm) square electrical box (using a plaster ring included).

Other system features

- Fully coated circuit boards and superior RF/transient protection.
- 94-V0 plastic flammability rating.
- Low standby current.

Options

Remote LED output connection, PN RA100Z(A).

Applications

Use photoelectric detectors in life-safety applications to provide a broad range of fire-sensing capability, especially where smoldering fires are anticipated. Ionization detectors are often better than photoelectric detectors at sensing fast, flaming fires.

Construction

These detectors are constructed of off-white fire resistant plastic. SD355(A) series plug-in, low-profile smoke detectors are designed to commercial standards and offer an attractive appearance.

Installation

SD355(A) series plug-in detectors use a detachable mounting base to simplify installation, service and maintenance.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

NOTE: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class B) wiring. SD355R(A) mounts in a D355PL(A) or DNR(A)/DNRW duct detector housing.

Operation

Each SD355(A) series detector uses one of 99 possible addresses on the MS-9200 series and up to 318 (159 on each loop) on the MS-9600 series Signaling Line Circuit (SLC). It responds to regular polls from the system and reports its type and status.

The addressable photoelectric sensor in the SD355(A) series has a unique unipolar chamberthat responds quickly and uniformly to a broad range of smoke conditions. It can withstand wind gusts up to 4,000 feet-per-minute (20 m/sec.) without sending an alarm level signal. Because of its unipolar chamber, the SD355(A) series is approximately two times more responsive than most photoelectric sensors. This makes it a more stable detector.

Detector Sensitivity Test

Each detector can have its sensitivity tested (required per NFPA 72, Chapter 14 on *Inspection, Testing and Maintenance*) when installed/connected to a MS-9200 series or MS-9600 series addressable fire alarm control panel. The results of the sensitivity test can be printed off the MS-9200 series or MS-9600 series for record keeping.

Specification

Voltage range: 15 – 32 VDC (peak). Standby current: 300 µA @ 24 VDC.

LED current: 6.5 mA @ 24 VDC (latched "ON"). **Air velocity:** 4,000 ft./min. (20 m/sec.) maximum. **Size:** 2.1" (5.33 cm) high; base determines diameter.

B210LP(A): 6.1" (15.5 cm) diameter.
B501(A): 4.1" (10.4 cm) diameter.
B200SR(A): 6.875" (17.46 cm) diameter.
B224RB(A): 6.2" (15.748 cm) diameter.

Weight: 3.6 oz. (102 g).

Operating temperature range: for SD355(A): 0°C to 49°C (32°F to 120°F); for SD355T(A): 0°C to 38°C (32°F to 100°F). SD355R(A): installed in a DNR(A)/DNRW -20°C to 70°C (-4°F to 158°F).

Temperature: 0°C – 49°C (32°F – 120°F).

Relative humidity: 10% – 93%, non-condensing.

Listings

Listings and approvals below apply to the SD355(A), SD355T(A), and SD355RT(A) detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

UL Listed: S1059.
ULC Listed: S1059.
CSFM: 7272-0075:0194.

MEA: 243-02-E.FM approved.

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

SD355: Adressable photoelectric detector; B210LP base included.

SD355A: Sames as SD355 with ULC Listing; B210LPA base included.

SD355T: Same as SD355 but with *thermal* element; B210LP base included.

SD355TA: Same as SD355T with ULC Listing; B210LPA base included.

SD355R: Remote test capable addressable photoelectric detector for use with a D355PL(A) or DNRA/DNRW duct detector housing; B210LP base included.

SD355RA: Same as SD355R with ULC Listing for use with a D355PLA or DNRA duct detector housing; B210LPA base included.

INTELLIGENT BASES

NOTE: "A" suffix indicates ULC Listed model.

NOTE: The detector's plug-in base can be changed off for special applications. For details about intelligent bases and their mounting, see DF-60059.

B210LP(A): Plug-in detector base (included); standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10. **B501(A):** Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Plug-in System Sensor **relay** base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases (see DF-52389).

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B350LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15. **F210:** Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B210LP(A) bases only.

SMB600: Surface mounting kit M02-04-00:Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of detector heads from bases in high ceiling applications.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

T55-127-010: Detector removal tool without pole.

BCK-200B: Black detector covers for use with SD355(A) only; box of 10

WCK-200B: White detector covers for use with SD355(A) only; box of 10.

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We try to keep our product information up-to-date and accurate.

We cannot cover all specific applications or anticipate all requirements.

All specifications are subject to change without notice.



For more information, contact Fire•Lite Alarms. Phone: (800) 627-3473, FAX: (877) 699-4105. www.firelite.com

SpectrAlert® Advance

Indoor Selectable Output Speaker Strobes and Dual Voltage Evacuation Speakers



Audio/Visual Devices

General

The SpectrAlert Advance Series of speakers and speaker strobes is designed to reduce ground faults. The plug-in design allows the installer to pre-wire mounting plates and dress the wires before plugging in the speakers. The plastic cover prevents nicked wires by covering exposed speaker components.

This design also allows faster installations with instant feedback to ensure that wiring is properly connected; rotary switches to select voltage and power settings; and 11 field selectable candela settings for wall and ceiling speaker strobes.

The low total harmonic distortion of the SP speaker offers high fidelity sound output while the SPV speaker offers high volume sound output for use in high ambient noise applications.

SpectrAlert Advance makes installation easy

- Attach a universal mounting plate to a 4" x 4" x 2-1/8" back box. Flush mount applications are achievable without the need for an extension ring.
- Connect the notification appliance circuit or speaker wiring to the PEMS terminals on the mounting plate.
- Attach the speaker or speaker strobe to the mounting plate by inserting the product tabs into the mounting plate grooves. Rotate the device into position to lock the product pins into the mounting plate terminals. The device will temporarily hold in place with a catch until it is secured with a captured mounting screw.

Features

- Plug-in design
- Protective cover isolates speaker components, reduces ground faults
- Electrical compatibility with existing SpectrAlert products
- Field selectable candela settings on wall and ceiling units:
 - Standard: 15, 15/75, 30, 75, 95, 110, 115
 - High: 135, 150, 177, 185
- Shorting spring on mounting plate tests continuity before installation
- Rotary switch simplifies field selection of speaker voltage and power settings
- · Universal mounting plate for wall- and ceiling-mount units
- · Compatible with System Sensor synchronization protocol
- SP speakers offer high fidelity sound output
- · SPV speakers offer high volume sound output
- Automatic selection of 12 or 24 volt operation at 15 and 15/75 candela
- · No extension ring required
- Ceiling and wall mount application
- · Optional tamper resistant Torx head screw included

Specifications

PHYSICAL SPECIFICATIONS

Operating Temperature: 32°F to 120°F (0°C to 49°C)

Humidity Range: 10 to 93% non-condensing

Dimensions, Wall-Mount: -

 SPS Speaker Strobe: 6.0"L x 5.0"W x 4.7"D (includes lens and speaker)



 SPSV Speaker Strobe: 6.0"L x 5.0"W x 4.9"D (includes lens and speaker)

SP Speaker: 6.0"L x 5.0"W x 2.8"DSPSV Speaker: 6.0"L x 5.0"W x 2.9"D

Dimensions, Ceiling-Mount:

- SPS Speaker Strobe: 6.8"Dia x 4.7"D (includes lens and speaker)
- SPSV Speaker Strobe: 6.8"Dia x 4.8"D (includes lens and speaker)
- SP Speaker: 6.8"Dia x 2.8"DSPSV Speaker: 6.8"Dia x 2.9"D

ELECTRICAL/OPERATING SPECIFICATIONS

Nominal Voltage (speakers): 25 Volts or 70.7 Volts (nominal)
Maximum Supervisory Voltage (speakers): 50VDC

Strobe Flash Rate: 1 flash per second

Nominal Voltage (strobes): Regulated 12VDC/FWR or regulated 24DC/FWR

Operating Voltage Range (includes fire alarm panels with built-in sync): 8 to 17.5V (12V nominal) or 16 to 33V (24V nominal)

Operating Voltage with MDL Sync Module: 9 to 17.5V (12V nominal) or 17 to 33V (24V nominal)

Frequency Range: 400 to 4000 Hz

Power: 1/4, 1/2, 1, 2 watts

Agency Listings and Approvals

In some cases, certain modules may not be listed by certain approval agencies, or listing may be in progress. *Consult factory for latest listing status*.

UL/ULC Listed: S4048

MEA: 10-08-E

• CSFM: 7320-1653:201

FM Approved

UL Maximum Strobe Current Draw (mA RMS)									
	Candela	8 to 17	.5 Volts	16 to 33 Volts					
	Candela	DC	FWR	DC	FWR				
	15	123	128	66	71				
	15/75	142	148	77	81				
Standard	30	NA	NA	94	96				
Candela	75	NA	NA	158	153				
Range	95	NA	NA	181	176				
	110	NA	NA	202	195				
	115	NA	NA	210	205				
Himb	135	NA	NA	228	207				
High Candela	150	NA	NA	246	220				
Range	177	NA	NA	281	251				
rvarige	185	NA	NA	286	258				

Sound Output				
UL Reverberant (dBA @ 10ft)	2W	1W	1∕₂W	1/4W
Wall Mount SP Series	86	83	80	77
Wall Mount SPV Series	90	87	84	81
Ceiling Mount SPC Series	86	83	80	77
Ceiling Mount SPCV Series	90	87	84	81
Wall Mount SPS Series	85	82	79	76
Wall Mount SPSV Series	89	86	83	80
Ceiling Mount SPSC Series	85	82	79	76
Ceiling Mount SPSCV Series	89	86	83	80

Architectural/Engineering **Specifications**

GENERAL

GENERAL
SpectrAlert Advance speaker and speaker strobes shall mount to a 4" x 4" x 2-1/8" backbox. A universal mounting plate shall be used for mounting ceiling and wall products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance speaker strobes, when used with the Sync Circuit. Module accessory, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24volts. When used with the Sync.Circuit Module, 12 volt rated notification appliance circuit outputs shall operate between nine and 17.5 volts; 24 volt rated notification appliance circuit outputs shall operate between 17 and 33 volts. Indoor SpectrAlert Advance products shall operate between 32°F and 120°F from a regulated DC, or full-wave rectified, unfiltered power supply. Speaker strobes shall have field-selectable candela settings including 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177, 185.

SPEAKER

The speaker shall be a System Sensor SpectrAlert Advance model dual-voltage transformer speaker capable of operating at 25.0 or 70.7 nominal Vrms. It should be listed to UL/ULC 1480 and shall be approved for fire protective service. The speaker shall have a frequency range of 400 to 4000Hz and shall have an operating temperature between 32°F and 120°F. Speaker shall have power taps and voltage that are selected by rotary switches.

SPEAKER STROBE COMBINATION

SPEAKER STROBE COMBINATION

The speaker strobe shall be a System Sensor SpectrAlert Advance model listed to UL1480 and UL/ULC 1971 and be approved for fire protective signaling systems. Speaker shall be capable of operating at 25.0 or 70.7 nominal Vrms selected via rotary switch, and shall have a frequency range of 400 to 4000Hz. Speaker shall have power taps which are selected by rotary switch. The strobe shall comply with the NFPA 72 requirements for visible signaling appliances, flashing at 1Hz over the strobe's entire operating voltage range. The strobe light shall consist of a xenon flash tube and associated lens/reflector system.

SYNCHRONIZATION MODULE

The module shall be a System Sensor Sync Circuit model MDL listed to UL/ULC 464 and shall be approved for fire protective service. The module shall synchronize SpectrAlert strobes at 1Hz. The module shall mount to a 4-11/16" x 4-11/16" x 2-1/8" backbox. The module shall also control two Style Y (class B) circuits or one Style Z (class A) circuit. The module shall synchronize multiple zones. Daisy chaining two or more synchronization modules together will synchronize all the zones they control. The module shall not operate on a coded power supply.

Ordering Information NOTE: (W) indicates white coloring; (R), red. NOTE: "A" suffix indicates ULC-Listed model.

WALL MOUNT

SP(W)(R)(A): Speaker only.

SP(W)(R)V(A): Speaker only, high dB; white.

SPS(W)(R)(A)*: Speaker strobe, selectable candela (15, 15/75, 30, 75, 95, 110, 115).

SPS(W)(R)H(A)*: Speaker strobe, selectable candela, high cd (135, 150, 177, 185).

SPS(W)(R)V(A)*: Speaker strobe, selectable candela, high dB.

CEILING MOUNT

SPC(W)(R)(A): Speaker only.

SPC(W)(R)V(A): Speaker only, high dB.

SPSC(W*)(R)(A): Speaker strobe, selectable candela (15, 15/ 75, 30, 50, 75, 95, 110, 115)

 $\mbox{SPSC(W^*)(R)H(A):}$ Speaker strobe, selectable candela, high cd (135, 150, 177, 185)

SPSC(W*)(R)V(A): Speaker strobe, selectable candela, high dB (15, 15/75, 30, 50, 75, 95, 110, 115).

SPSC(W*)(R)VH(A): Speaker strobe, selectable candela, high dB, high cd (135, 150, 177, 185).

ACCESSORIES

RFP(A): Retrofit plate (5 pack), red. RFPW(A): Retrofit plate (5 pack), white.

SPBBSC(A): Ceiling mount backbox skirt, red. SPBBSCW(A): Ceiling mount backbox skirt, white.

SPBBS(A): Wall mount backbox skirt, red. SPBBSW(A): Wall mount backbox skirt, white. TR(A): Wall mount trim ring, red, package of 5. TRW(A): Wall mount trim ring, white, package of 5. TRC(A): Ceiling mount trim ring, red, package of 5.

TRCW(A): Ceiling mount trim ring, white, package of 5. MWBB(A): Wall mount, metal weatherproof backbox

MWBBW(A): Wall mount, metal weatherproof backbox, white MWBBC(A): Ceiling mount, metal weatherproof backbox

MWBBCW(A): Ceiling mount, metal weatherproof backbox,

*NOTE: Add -P to model number for plain housing (no 'FIRE' marking on the cover), e.g. SPSW-P

MPA-3: Strobe & Siren

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BG-12LX

Addressable Manual Pull Station



Addressable Devices

General

The Fire-Lite BG-12LX is a state-of-the-art, dual-action (i.e., requires two motions to activate the station) pull station that includes an addressable interface (mounted inside) for Fire-Lite's addressable fire alarm control panels (FACPs) Because the BG-12LX is addressable, the control panel can display the exact location of the activated manual station. This leads fire personnel quickly to the location of the alarm.

Features

- Maintenance personnel can open station for inspection and address setting without causing an alarm condition.
- Built-in bicolor LED, which is visible through the handle of the station, flashes in normal operation and latches steady red when in alarm.
- Handle latches in down position and the word "ACTIVATED" appears to clearly indicate the station has been operated.
- Captive screw terminals wire-ready for easy connection to SLC loop (accepts up to 12 AWG/3.25 mm² wire).
- Can be surface mounted (with SB-10 or SB-I/O) or semiflush mounted. Semi-flush mount to a standard singlegang, double-gang, or 4" (10.16 cm) square electrical box.
- · Smooth dual-action design.
- Meets ADAAG controls and operating mechanisms guidelines (Section 4.1.3[13]); meets ADA requirement for 5 lb. maximum activation force.
- Highly visible.
- · Attractive shape and textured finish.
- · Key reset.
- Includes Braille text on station handle.
- · Optional trim ring (BG12TR).
- Meets UL 38, Standard for Manually Actuated Signaling Boxes

Construction

Shell, door, and handle are molded of durable polycarbonate material with a textured finish.

Specifications

Shipping Weight: 9.6 oz. (272.15 g)
 Normal operating voltage: 24 VDC.
 Maximum SLC loop voltage: 28.0 VDC.
 Maximum SLC standby current: 375 µA.
 Maximum SLC alarm current: 5 mA.

Temperature Range: 32°F to 120°F (0°C to 49°C)
 Relative Humidity: 10% to 93% (noncondensing)

· For use indoors in a dry location

Installation

The BG-12LX will mount semi-flush into a single-gang, double-gang, or standard 4" (10.16 cm) square electrical outlet box, or will surface mount to the model SB-10 or SB-I/O surface backbox. If the BG-12LX is being semi-flush mounted, then the optional trim ring (BG12TR) may be used. The BG12TR is



-LPullStatic

usually needed for semi-flush mounting with 4" (10.16 cm) or double-gang boxes (not with single-gang boxes).

Operation

Pushing in, then pulling down on the handle causes it to latch in the down/activated position. Once latched, the word "ACTIVATED" (in bright yellow) appears at the top of the handle, while a portion of the handle protrudes from the bottom of the station. To reset the station, simply unlock the station with the key and pull the door open. This action resets the handle; closing the door automatically resets the switch.

Each manual station, on command from the control panel, sends data to the panel representing the state of the manual switch. Two rotary decimal switches allow address settings (1 – 159 with Breakaway Tab removed for MS-9600 Series, 1 – 99 and MS-9200UDLS, 1 – 50 for MS-9050UD).

Architectural/Engineering Specifications

Manual Fire Alarm Stations shall be non-coded, with a keyoperated reset lock in order that they may be tested, and so designed that after actual Emergency Operation, they cannot be restored to normal except by use of a key. An operated station shall automatically condition itself so as to be visually detected as activated. Manual stations shall be constructed of red-colored polycarbonate material with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in white letters, 1.00 inches (2.54 cm) or larger. Stations shall be suitable for surface mounting on matching backbox SB-10 or SB-I/O; or semi-flush mounting on a standard single-gang, double-gang, or 4" (10.16 cm) square electrical box, and shall be installed

within the limits defined by the Americans with Disabilities Act (ADA) or per national/local requirements. Manual Stations shall be Underwriters Laboratories listed.

Manual stations shall connect with two wires to one of the control panel SLC loops. The manual station shall, on command from the control panel, send data to the panel representing the state of the manual switch. Manual stations shall provide address setting by use of rotary decimal switches.

Product Line Information

BG-12LX: Dual-action addressable pull station. Includes key locking feature. (Listed for Canadian and non-Canadian applications.)

MPA-3 - Pull Station

SB-10: Surface backbox; metal. **SB-I/O:** Surface backbox; plastic.

BG12TR: Optional trim ring.

MPA3- Pull Station

17003: Keys, set of two.

Agency Listings and Approvals

In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

UL/ULC Listed: S711 (listed for Canadian and non-Canadian applications).

• MEA: 67-02-E.

• CSFM: 7150-0075:0184.

· FM Approved.

Patented: U.S. Patent No. D428,351; 6,380,846; 6,314,772;

6,632,108.

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H355(A) Series

Intelligent Addressable Thermal Detectors



Addressable Devices

General

The **Fire*Lite Alarms H355(A) Series** thermal detectors are addressable sensors that use a state-of-the-art thermistor sensing circuit for fast response. These sensors provide openarea protection and are intended for use with **Fire*Lite's** addressable Fire Alarm Control Panels (FACPs).

The H355(A) and H355R(A) sensors provide fixed temperature alarm detection at 135°F (57°C). The H355R(A) sensor also responds to rate-of-rise conditions of greater than 15°F (8.3°C) per minute. The H355HT(A) is a fixed high-temperature detector that activates at 190°F (88°C). These thermal detectors provide addressable property protection in a variety of applications.

Two LEDs on each sensor light to provide a local, visible sensor indication. Remote LED annunciator capability is available using an optional accessory, the RA100Z.

Features

SLC loop:

- · Two-wire SLC loop connection.
- · Unit uses base for wiring.

Addressing:

- Addressable by device.
- Rotary, decimal addressing: 01 159 with MS-9600 series, 01 – 99 with MS-9200 series.

Architecture:

- · Sleek, low-profile, stylish design.
- State-of-the-art thermistor technology for fast response.
- Integral communications and built-in device-type identification
- · Built-in tamper resistant feature.
- · Built-in functional test switch activated by external magnet.

Operation:

- Factory preset at 135°F (57°C) for the H355(A) and H355R(A); 190°F (88°C) for the H355HT(A).
- Rate-of-rise triggers at 15°F (8.3°C) per minute for the H355R(A).
- 360°-field viewing angle of the visual alarm indicators (two bicolor LEDs). LEDs blink red in Normal condition and turn on steady red in Alarm.
- · Visible LEDs "blink" every time the unit is addressed.

Mechanicals:

- Sealed against back pressure.
- SEMS screws for wiring of the separate base.
- · Designed for direct-surface or electrical-box mounting.
- Plugs into separate base for ease of installation and maintenance.
- Separate base allows interchange of photoelectric, ionization and thermal sensors.

Other system features:

- · Remote test feature from the panel.
- Walk test with address display.
- Low standby current.



94-5V plastic flammability rating.

Options:

- Remote LED output connection to optional RA100Z remote LED annunciator.
- · Flanged surface mounting kit.

Installation

H355(A) Series plug-in intelligent thermal detectors use a detachable base to simplify installation, service and maintenance. Installation instructions are shipped with each detector.

Mount base (all base types) on an electrical backbox which is at least 1.5" (3.81 cm) deep. For a chart of compatible junction boxes, see *DF-60059*.

NOTE: Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring only.

Applications

Use thermal detectors for protection of property.

Construction

These detectors are constructed of off-white fire-resistant plastic. The H355(A) Series plug-in intelligent thermal detectors are designed to commercial standards and offer an attractive appearance.

Operation

Each H355(A) Series detector uses one of 159 (MS-9600 series) or 99 (MS-9200 series) possible addresses on a control panel SLC loop. It responds to regular polls from the control panel and reports its type and the status. If it receives a test command from the panel (or a local magnet test), it stimulates its electronics and reports an alarm. It blinks its LEDs when polled and turns the LEDs on when commanded by the panel. The H355(A) Series offers features and performance that represent the latest in thermal detector technology.

Spefications

Size: 2.1" (5.3 cm) high; base determines diameter.

B210LP(A): 6.1" (15.5 cm) diameter.B501(A): 4.1" (10.4 cm) diameter.

- B200SR(A): 6.875" (17.46 cm) diameter.

- **B224RB(A):** 6.2" (15.748 cm) diameter.

Shipping weight: 4.8 oz. (137 g).

Installation temperature:

- H355(A), H355R(A): -4°F to 100°F (-20°C to 38°C).

- H355HT(A): -4°F to 150°F (-20°C to 66°C).

Humidity range: 10% to 93% relative humidity (noncondensing).

Voltage range: 15 to 32 VDC peak.

Standby current: 300 μA @ 24 VDC (one communication

every five seconds with LED blink enabled).

LED current: 6.5 mA @ 24 VDC.

Mounting: B210LP(A) flanged base, included. See "Product Line Information: Intelligent Bases" if using a different base.

Fixed-temperature setpoint: 135°F (57°C) for the H355(A) and H355R(A); 190°F (88°C) for the H355HT(A).

Rate-of-rise detection: responds to greater than 15°F (8.3°C) per minute.

Listings and Approvals

Listings and approvals below apply to the H355(A) Series detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

UL Listed: S2517.

ULC Listed (models H355A, H355RA, H355HTA).

CSFM approved: 7270-0075:0195.

· FM approved.

Product Line Information

NOTE: "A" suffix indicates ULC Listed model.

H355: Intelligent thermal sensor; 135° F (57° C); B210LP base included.

H355A: Same as H355 but with ULC Listing; B210LPA base included.

H355R: Same as H355 with *rate-of-rise* feature; B210LP base included.

H355RA: Same as H355R but with ULC Listing; B210LPA base included.

H355HT: Intelligent fixed high-temperature thermal detector; 190° F (88° C); B210LP base included.

H355HTA: Same as H355HT but with ULC Listing; B210LPA base included.

MPA-3: Heat Detector

INTELLIGENT BASES

NOTE: "A" suffix indicates ULC Listed model.

NOTE: The detector's plug-in base can be changed off for special applications. For details about intelligent bases and their mounting, see DF-60059.

B210LP(A): Plug-in detector base (included); standard U.S. flanged low-profile mounting base.

B210LPBP: Bulk pack of B210LP; package contains 10. **B501(A):** Standard European flangeless mounting base.

B501BP: Bulk pack of B501; package contains 10.

B200SR(A): Intelligent sounder base capable of producing sound output with ANSI Temporal 3 or continuous tone. Replaces B501BH series bases in retrofit applications.

B224RB(A): Plug-in System Sensor **relay** base. Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive.

B224BI(A): Plug-in System Sensor *isolator* detector base. Maximum 25 devices between isolator bases (see DF-52389).

ACCESSORIES

F110: Retrofit flange to convert B210LP(A) to match the B350LP(A) profile, or to convert older high-profile bases to low-profile.

F110BP: Bulk pack of F110; package contains 15.

F210: Replacement flange for B210LP(A) base.

RA100Z(A): Remote LED annunciator. 3 – 32 VDC. Mounts to a U.S. single-gang electrical box. For use with B501(A) and B210LP(A) bases only.

SMB600: Surface mounting kit

M02-04-00: Test magnet.

M02-09-00: Test magnet with telescoping handle.

XR2B: Detector removal tool. Allows installation and/or removal of detector heads from bases in high ceiling applications.

XP-4: Extension pole for XR2B. Comes in three 5-foot (1.524 m) sections.

T55-127-010: Detector removal tool without pole.

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This document is not intended to be used for installation purposes.

We try to keep our product information up-to-date and accurate.

We cannot cover all specific applications or anticipate all requirements.

All specifications are subject to change without notice.



MS-9050UD(E)

Fire Alarm Control Panel with DACT



Addressable

General

The Fire*Lite MS-9050UD(E) is a Fire Alarm Control Panel (FACP) and Digital Alarm Communicator/Transmitter (DACT) combined into one circuit board. This compact, intelligent addressable control panel supports up to 50 addressable devices of any type of detectors and modules. With an extensive list of powerful features, the MS-9050UD programs just like Fire*Lite's larger products, yet fits into applications previously served only by conventional panels.

The MS-9050UD's integral DACT transmits system status (alarms, troubles, AC loss, etc.) to a Central Station via the public switched telephone network. It also allows remote and local programming of the control panel using the PK-CD Upload/Download utility. In addition, the control panel may be programmed or interrogated off-site via the public switched telephone network. Any personal computer with Windows™ 95 or greater, and compatible modem with a speed of 14.4 kbps or grater and Fire•Lite Upload/Download software kit PK-CD, may serve as a Service Terminal. This allows download of the entire program or upload of the entire program, history file, walk-test data, current status and system voltages.

The power supply and all electronics are contained on a single circuit board supported on a new quick install chassis and housed in a metal cabinet. Available accessories include local and remote upload/download software, remote annunciators, and reverse polarity/city box transmitter. (4XTMF)

New options include a UL listed printer, PRN-6F and the new IPDACT Internet Monitoring module. The FireWatch Series internet monitoring modules IPDACT-2 and IPDACT-2UD permit monitoring of alarm signals over the Internet, saving the monthly cost of two telephone lines. Although not required, the secondary telephone line may be retained providing backup communication over the public switched telephone line.

NOTE: Unless otherwise specified, the term MS-9050UD is used in this data sheet to refer to both the MS-9050UD and the MS-9050UDE FACPs. For MS-9050UDC, refer to DF-60445.

Features

- · Listed to UL Standard 864, 9th edition.
- Auto-program (learn mode) reduces installation time.
 Reports two devices set to the same address.
- On-board DACT.
- Two independently programmable Style Z (Class A) or Style Y (Class B) NAC circuits.
- Selectable strobe synchronization for System Sensor, Wheelock, and Gentex devices.
- Remote Acknowledge, Silence, Reset and Drill via addressable monitor modules.
- Two programmable relays and one fixed trouble relay.
- Built-in Programmer.
- Telephone Line Active LEDs.
- EIA-232 PC interface.
- Integral 80-character LCD display with backlighting.
- Real-time clock/calendar with automatic daylight savings control.
- History file with 500 event capacity.
- Automatic detector sensitivity testing (NFPA 72 compliant).
- Automatic device type-code verification.



- Point trouble identification.
- · Waterflow selection per module point.
- · Alarm verification selection per detector point.
- Maintenance alert warns when smoke detector dust accumulation is excessive.
- One-person audible or silent walk test with walk-test log and printout.
- System alarm verification selection per detector point.
- PAS (Positive Alarm Sequence) and Pre-signal per point (NFPA 72 compliant).
- · Up to eight ANN-BUS annunciators
- Remote Acknowledge, Alarm Silence, Reset and Drill via addressable modules or remote annunciator.
- Upload/Download (local or remote) of program and data via integral DACT.

SLC COMMUNICATION LOOP

- Single addressable SLC loop which meets NFPA Style 4, 6 and 7 requirements.
- 50 addressable device capacity (any combination of addressable detectors and modules).
- Compatible with Fire•Lite's addressable devices (refer to SLC Wiring Manual).

NOTIFICATION APPLIANCE CIRCUITS (NACS)

- Two independently programmable output circuits. Circuits can be configured for the following outputs:
 - Style Y (Class B)
 - Style Z (Class A)
 - Door Holder Service (cannot be used for notification appliances)
 - Aux Power Source (cannot be used for notification appliances)
- · Silence Inhibit and Autosilence timer options.
- Continuous, March Time, Temporal or California code for main circuit board NACs with two-stage capability.
- Selectable strobe synchronization per NAC.
- 2.5 A total power for NACs.

NOTE: Maximum or total 24VDC system power shared between all NAC circuits and the ANN-BUS is 2.7 A.



2 Appendix B – Particular Specifications

4) Suspended Ceilings

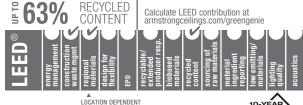
MPA-3: CEILINGS

SUPRAFINE® XL® and ML & SUPRAFINE XL High Recycled Content (HRC)

9/16" Exposed Tee System

Declare⁶

SUSTAIN High Performance Sustainable Ceiling Systems







KEY SELECTION ATTRIBUTES

- Suprafine XL is part of the Sustain[™] portfolio and meets the most stringent sustainability compliance standards today
- Seismic Rx® Suspension System saves time and money; Armstrong offers an ICC-ES approach to installations (FSR-1308)
- PeakForm® profile increases strength and stability for improved performance during installation
- SuperLock™ main beam clip is engineered for a strong, secure connection and fast, accurate alignment confirmed with an audible click; easy to remove/relocate
- · Hot dipped galvanized coating inhibits red rusting better than electrogalvanized or painted systems



Available with TrioGuard™ coating that resists dirt, bacteria, mold, mildew, and color fading

- · Some items available in metric sizes
- 1-11/16" web height keeps components vertical and stable at light fixture interface
- 10-Year Limited System Warranty; 30-Year Limited Ceiling Systems Warranty when used with HumiGuard® Plus products

FastSize™ main beams and cross tees can be ordered with special sizing and route spacing for your project needs in one carton minimums with two week lead times

 Fire Guard[™] options offer UL design fire-rated performance

TYPICAL APPLICATIONS

- Offices
- Education
- · Hospitality Retail
- · Healthcare

Blizzard White powder-coated finish coordinates with Calla®, Optima®, Ultima® and Lyra® ceiling panels for a clean, seamless, monolithic installed visual.

Linear lighting integration is easy with made-to-order main beam-to-cross tee adapters, route spacing, miter spacing, and short cross tees (3" to 6" lengths).

Available in coordinating Colorations[™] colors.

Item No.*	Face Profile	Description	Route Spacing	Dimensions (Inches)	Hanger Spacing Lbs./Lin		PERFOR Fire Guard™	Seismic Category	Pcs./	Lin. Ft.
Suprafine XL and	Suprafine	XL High Recycled Co	ntent (Red Num	bers are Fire Guard Items)	4 Ft.	5 Ft.		epresent high of performance.		
□ 7501 __ +*	9/16"	12' HD Main Beam	6" O.C.	144 x 9/16 x 1-11/16"	16.86	10.62	_	•	20	240
☐ 7501HRC ☐ 8501 ☐ 7536			4" O.C.				- • -	•	20 20 20	240 240 240
□ 7500* □ 8500	9/16"	12' ID Main Beam	6" O.C.	144 x 9/16 x 1-11/16"	12.75	5.74	-	- -	20 20	240 240
□ 7502 _ _*	9/16"	10' ID Main Beam	6" O.C.	120 x 9/16 x 1-11/16"	12.75	5.74	_	_	20	200
☐ XL7580*	9/16"	8' Cross Tee	12" O.C.	96 x 9/16 x 1-11/16"	12.73**	_	_	•	20	160
□ XL7590*	9/16"	6' Cross Tee	12" O.C.	72 x 9/16 x 1-11/16"	12.73**	_	_	•	20	120
□ XL7558*	9/16"	5' Cross Tee	6", 20", 30"	60 x 9/16 x 1-11/16"	-	5.80	_	•	60	300
☐ XL7541HRC	9/16"	4' Cross Tee	12" O.C.	48 x 9/16 x 1-11/16"	12.73	_	_	•	60	240
□ XL7540** □ XL8540	9/16"	4' Cross Tee	12" O.C.	48 x 9/16 x 1-11/16"	10.34	_	-	•	60 60	240 240
□ XL7549*	9/16"	4' Cross Tee	12" O.C.	48 x 9/16 x 1-11/16"	16.42	_	_	•	60	240
□ XL7530*	9/16"	3' Cross Tee	_	36 x 9/16 x 1-11/16"	-	_	_	•	60	180
□ XL7570*	9/16"	30" Cross Tee	_	30 x 9/16 x 1-11/16"	28.67	_	_	•	60	150
□ XL7520 • • • □ XL7520 HRC □ XL8520	9/16"	2' Cross Tee	-	24 x 9/16 x 1-11/16"	51.83	-	- - •	•	60 60 60	120 120 120
☐ XL7510*	9/16"	1' Cross Tee	_	12 x 9/16 x 1-11/16"	51.83	_	_	•	120	120
☐ FastSize™	9/16"	Main beams L: 36" - 14	4" / Cross tees L: 3"	- 144" / Route spacing 2" from en	ds, 4" there	after			Varies	Varies
Suprafine XL ite	ms for Ted	chZone™ Ceiling Sys	tems							
☐ 7504*	9/16"	120" HD Main Beam	15", 42", 48", 75", 102", 108"	120 x 9/16 x 1-11/16"	12.75	10.62	_	•	20	200
□ 7505*	9/16"	100" HD Main Beam	2", 26", 50", 74", and 98"	100 x 9/16 x 1-11/16"	-	_	_	•	20	166
□ 7507 *	9/16"	144" HD Main Beam	15", 36", 42", 63", 84", 90", 11",132", 138"	144 x 9/16 x 1-11/16"	_	_	_	•	20	240
* Simple Span ** Wire at 4' • Items available in S	tandard, Premi	um, and Blizzard White powde	r-coated finish						ASTM Class HD - Heavy ID - Interme LD - Light-0	-duty ediate-duty

NOTE: Additional Suprafine XL items for TechZone Integrated Ceiling Systems are listed in the TechZone Technical Guide (BPCS-4486). Available online at armstrongceilings.com/techzone



Items available in Standard, Premium, and Blizzard White powder-coated finish

tems available in Blizzard White powder-coated finish only

When specifying or ordering Colorations, Standard, Premium, and Blizzard White, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

$\text{SUPRAFINE}^{\circledR}$ XL $^{\circledR}$ and ML & SUPRAFINE XL High Recycled Content (HRC)

9/16" Exposed Tee System

ΓΙΟΝ						PERFOR	MANCE	PACKAG	ING
Face Profile	Description	Route Spacing	Dimensions (Inches)			Fire Guard™	Seismic Category	Pcs./ Ctn.	Lin. Ft./ Ctn.
ms for T	echZone™ Ceiling	Systems		4 Ft.	5 Ft.	Dots repri	esent high level rformance.		
9/16"	132" HD Main Beam	10", 30", 50", 56", 76", 96", 116", 122"	132 x 9/16 x 1-11/16"	=	-	_	•	20	220
9/16"	56" Cross Tee	_	56 x 9/16 x 1-11/16"	-	-	_	•	60	280
9/16"	54" Cross Tee	6", 27", 48"	54 x 9/16 x 1-11/16"	_	_	_	•	60	270
9/16"	42" Cross Tee	_	42 x 9/16 x 1-11/16"	12.34	_	_	•	60	210
9/16"	28" Cross Tee	_	28 x 9/16 x 1-11/16"	_	_	_	•	60	140
9/16"	21" Cross Tee	_	21 x 9/16 x 1-11/16"	-	-	_	•	60	105
9/16"	6" Cross Tee	_	6 x 9/16 x 1-11/16"	_	_	_	•	60	30
9/16"	4" Cross Tee	_	4 x 9/16 x 1-11/16"	_	_	_	•	60	20
9/16"	4' Cross Tee	_	48 x 9/16 x 1-11/16"	10.34	_	_	_	60	240
9/16"	2' Cross Tee		24 x 9/16 x 1-11/16"	51.80	_	_	_	60	120
	9/16" 9/16" 9/16" 9/16" 9/16" 9/16" 9/16" 9/16" 9/16"	Face Profile Description Profile Description Profile Description Profile Description Profile Celling 9/16" 132" HD Main Beam 9/16" 56" Cross Tee 9/16" 42" Cross Tee 9/16" 28" Cross Tee 9/16" 21" Cross Tee 9/16" 6" Cross Tee 9/16" 4" Cross Tee 9/16" 4" Cross Tee 9/16" 4" Cross Tee	Face Profile Description Spacing ems for TechZone™ Ceiling Systems 9/16" 132" HD Main Beam 10", 30", 50", 56", 76", 96", 116", 122" 9/16" 56" Cross Tee - 9/16" 42" Cross Tee - 9/16" 28" Cross Tee - 9/16" 21" Cross Tee - 9/16" 21" Cross Tee - 9/16" 4" Cross Tee -	Face Profile Description Spacing (Inches) Profile Description Systems 9/16" 132" HD Main Beam 10", 30", 50", 56", 76", 96", 116", 122" 9/16" 56" Cross Tee − 56 x 9/16 x 1-11/16" 9/16" 54" Cross Tee 6", 27", 48" 54 x 9/16 x 1-11/16" 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" 9/16" 28" Cross Tee − 28 x 9/16 x 1-11/16" 9/16" 21" Cross Tee − 21 x 9/16 x 1-11/16" 9/16" 6" Cross Tee − 21 x 9/16 x 1-11/16" 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16"	Face Profile Description Spacing (Inches) Profile Description Spacing (Inches) 4 Ft. 9/16" 132" HD Main Beam 10", 30", 50", 56", 76", 96", 116", 122" 9/16" 56" Cross Tee − 56 x 9/16 x 1-11/16" − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" − 9/16" 28" Cross Tee − 28 x 9/16 x 1-11/16" − 9/16" 28" Cross Tee − 21 x 9/16 x 1-11/16" − 9/16" 21" Cross Tee − 21 x 9/16 x 1-11/16" − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" −	Face Profile Description Route Spacing (Inches) Dimensions (Inches) Hanger Spacing* Lbs./Lin. Ft. ems for TechZone™ Ceiling Systems 4 Ft. 5 Ft. 9/16" 132" HD Main Beam 10", 30", 50", 56", 76", 96", 116", 122" 132 x 9/16 x 1-11/16" − − 9/16" 56" Cross Tee − 56 x 9/16 x 1-11/16" − − 9/16" 54" Cross Tee 6", 27", 48" 54 x 9/16 x 1-11/16" − − 9/16" 42" Cross Tee − 42 x 9/16 x 1-11/16" 12.34 − 9/16" 28" Cross Tee − 28 x 9/16 x 1-11/16" − − 9/16" 21" Cross Tee − 21 x 9/16 x 1-11/16" − − 9/16" 6" Cross Tee − 6 x 9/16 x 1-11/16" − − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" − − 9/16" 4" Cross Tee − 4 x 9/16 x 1-11/16" − −	Face Profile Description Route Spacing (Inches) Dimensions (Inches) Hanger Spacing* Lbs./Lin. Ft. ems for TechZone™ Ceiling Systems 4 Ft. 5 Ft. 5 Ft. 9/16" 132" HD Main Beam 10", 30", 50", 56", 76", 96", 116", 122" 132 x 9/16 x 1-11/16" - 9/16" 56" Cross Tee - 56 x 9/16 x 1-11/16" - 9/16" 54" Cross Tee 6", 27", 48" 54 x 9/16 x 1-11/16" - 9/16" 42" Cross Tee - 42 x 9/16 x 1-11/16" - 9/16" 28" Cross Tee - 28 x 9/16 x 1-11/16" - 9/16" 28" Cross Tee - 21 x 9/16 x 1-11/16" - 9/16" 21" Cross Tee - 21 x 9/16 x 1-11/16" - 9/16" 6" Cross Tee - 6 x 9/16 x 1-11/16" - 9/16" 4" Cross Tee - 4 x 9/16 x 1-11/16" - 9/16" 4" Cross Tee - 4 x 9/16 x 1-11/16" -	Face Profile Description Spacing Dimensions (Inches) Lbs./Lin. Ft.	Face Profile Description Poscription Dimensions (Inches) Hanger Spacing* Lbs./Lin. Ft. Dots represent high level of performance.

ASTM Class HD - Heavy-duty ID - Intermediate-duty LD - Light-duty

Item No.	Description	Length	(A) Flange	(B) Height	(C) Reveal	(D) Reveal	Pcs./ Ctn.	Lin. Ft./ Ctn.
Suggested Wa	all Moldings and Shadow I	Moldings (Addition	al molding optio	ons available. S	ee catalog pgs	. 269-270)		
□7808*	10' Hemmed Angle Molding	120"	2"	2"	-	-	10	100
□7804* □7804HRC	12' Hemmed Angle Molding	144"	9/16"	7/8"	_	-	30	360
□7800* □7800HRC	12' Hemmed Angle Molding	144"	7/8"	7/8"	-	-	30	360
□ 7835	10' Channel Molding	120"	7/8"	1-3/4"	3/8"	-	20	200
□7873*	10' Shadow Molding	120"	9/16"	15/16"	3/8"	_	30	300
□7874*	10' Shadow Molding	120"	9/16"	15/16"	1/4"	_	30	300
□7878 __ _****	10' Seismic Shadow Molding	120"	15/16"	15/16"	3/8"	-	30	300
□ 7889	10' Shadow Molding	120"	9/16"	15/16"	3/8"	1/4"	30	300
□7850*	12' Hemmed Angle Molding	120"	1-1/8"	7/8"	-	-	30	300
□7851 <u></u> *	12' Hemmed Angle Molding	144"	1-1/8"	7/8"	-	_	30	360

^{***} Suitable for IBC Category D,E,F installations using Armstrong Seismic Rx® and BERC2 Clip

Configu	ıration	Item	Fixt	ure	Planning	Module	Hanger	Spacing	Maximur	n Weight
Α	В	No.	Α	В	Α	В	Α	В	Α	В
lain Beam t	o Main Bea	m – Drawing Key: Main beam	1 Cross tee (-) Hanger wire (+)					
		8500/7500/7502 7501	24" x 48" 24" x 48"	24" x 48" 24" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	73.36 lbs. 100 lbs.	57.07 lbs 70.8 lbs.
		7500/7502 7501	12" x 48" 12" x 48"	12" x 48" 12" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	68 lbs. 85 lbs.	44 lbs. 61 lbs.
500 tested at 13.3	lbs./lin. ft. to 1/36	ested at 12.7 lbs./lin. ft. to 1/360 of 4' 60 of 4' span. 48" cross tee tested at 1 — Drawing Key: Main beam (1)	0.34 lbs./lin. ft. to 1/	360 of 4' span.	1/360 of 4' span;					
MI		XL7540 XL7541 ML7540	24" x 48" 24" x 48" 24" x 48"	24" x 24" 24" x 24" 24" x 24"	48" x 48" 48" x 48" 48" x 48"	48" x 48" 48" x 48" 48" x 48"	48" 48"	48" 48"	55 lbs. 73 lbs. 65.71 lbs.	67 lbs. 84 lbs. 76 lbs.
† M †		ML7540 XL7541	24" x 48" 24" x 48"	12" x 48" 12" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	46 lbs. 52 lbs.	

Cross tees tested as follows: 48" cross tee tested at 10.34 lbs./lin. ft. to 1/360 of 4' span.

Fixtures weighting more than 56 lbs. should be independently supported. Light fixture clips are required at all fixture locations.

Fixture weight is based on single fixture only. For end-to-end fixtures or other configurations not shown, consult your Armstrong representative.

NOTE: The above data is based on 48" langer wire spacing, board weight of 1 lb./sq. ft., maximum deflection of tees not to exceed 1/360 of the span, and suspension system installed in accordance with ASTM C636.

** To derive maximum lbs/sf, divide the on-center spacing of the component into the lbs/lf given in the load test data table.



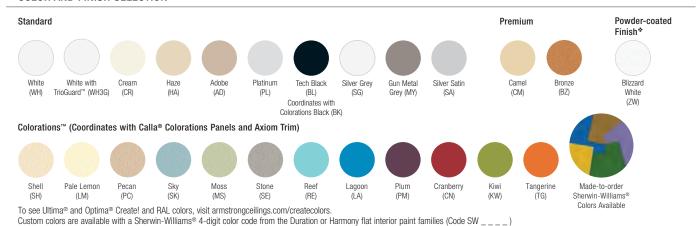
 [⋆] Simple Span
 ✦ Items available in Blizzard White powder-coated finish only

When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., $7301\underline{H}\underline{A}$ – Haze)

SUPRAFINE® XL® and ML & SUPRAFINE XL High Recycled Content (HRC)

9/16" Exposed Tee System

COLOR AND FINISH SELECTION



ACCESSORIES

BERC2 - 2" Beam End Retaining Clip – Allows you to create a code compliant Seismic D, E, F ceiling installation while eliminating the need to use 2" wall molding or spreader bars.





☐ ALBERC2 (Aluminum) - 200 pcs ☐ FZALBERC2 (Aluminum) — 50 pcs



☐ STAC - 120 pcs



☐ FZSTAC - 50 pcs



☐ **ES49** – 200 pcs ☐ FZES49 - 50 pcs



pop rivets or screws.

□ GCWA - 250 pcs ☐ FZGCWA - 50 pcs

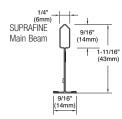
DETAILS

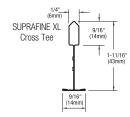


SUPRAFINE XL Cross Tee



SUPRAFINE ML Cross Tee









SEISMIC PERFORMANCE

Main Beams

7501, 7501HRC, 7504, 7505, 7507 Minimum Lbs. To Pull Out Compression/Tension

XL7558, XL7540, XL7549, XL7520, XL7510, XL8520, XL7570, XL7590, XL7580, XL8540, XL7541,753032, 752032, ML7540, ML7520

Minimum Lbs. To Pull Out Compression/Tension

ICC Reports

For areas under ICC jurisdiction, see ICC evaluation report number ESR-1308 for allowable values and/or conditions of use concerning the suspension system components listed on this page. The report is subject to reexamination, revisions, and possible cancellation.

PHYSICAL DATA

Material

Hot dipped galvanized steel

Surface Finish

Baked polyester paint or powder coated

Manufactured and tested in accordance with ASTM C635

Face Dimension

9/16" **Profile**

Exposed tee

Cross Tee/Main Beam Interface

XL – Override ML - Flush fit **End Detail**

Main Beam: Staked-on clip XL Cross Tee: Staked-on clip ML Cross Tee: Staked-on hook clip

Duty Classification Intermediate or Heavy-duty



$DUNE^{TM}$

Square Lay-in & Tegular fine texture







This durable, fine-textured panel offers a non-directional visual.

KEY SELECTION ATTRIBUTES

- Upgrade look at a modest price
- Ceiling-2-Ceiling™ Post-consumer Recycled Content options: Items 1773HRC, 1774HRC, 1775HRC, 1776HRC, 1777HRC
- (check armstrongceilings.com/greengenie)
- USDA-Certified Biobased Product 100%
- · Durable -Scratch-resistant
- · Non-directional visual reduces scrap and installation time
- 30-Year Limited System Warranty against visible sag (excludes items 1796 and 1798), mold and mildew

TYPICAL APPLICATIONS

- Offices
- Corridors
- · Retail
- Hospitality

COLOR



(WH)

DETAILS (Other Suspension Systems compatible. Refer to listing on page 250)











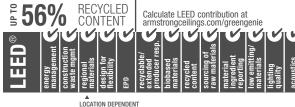
- 1. Dune™ Tegular
- 2. Dune™ Square Lay-in with Prelude 15/16" suspension system
- 3. Dune™ Tegular with Suprafine® 9/16" suspension system
- 4. Dune™ Tegular with Silhouette® XL® 9/16" suspension system with 1/4" reveal
- 5. Dune™ Tegular with Interlude® XL® HRC 9/16" suspension system

$DUNE^{\scriptscriptstyle\mathsf{TM}}$

VISUAL SELECTION

Square Lay-in & Tegular fine texture



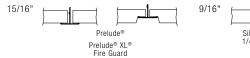


PERFORMANCE SELECTION Dots represent high level of performance.

\$\$\$\$

edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.	Item No.	Dimensions (Inches)		UL Clas Acou	sified stics	II Total Acoustics¹	Fire Performance	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Scratch	Recycled Content	Recycle Program	30-Yr Warranty
101110	com/catdwgs		(monos)		NRC -	CAC	= 58	め	(®	<i>\$</i>	38	_	28		30 Wa
OUNE™ S	Square Lay-in									Bio- Block	Humi- Guard+		Durability			
5/16" Square	1	1772	24 x 24 x 5/8"		0.50	30	_	Class A	0.83	•	•	•	•	Std	•	•
.ay-in ———(1	1850	24 x 24 x 5/8"		0.50	35	-	Fire Guard™	0.83	•	•	•	•	Std	•	•
	1	1773 1773HRC	24 x 48 x 5/8"		0.50	30	_	Class A	0.83	•	•	•	•	Std •	•	•
	1	1851	24 x 48 x 5/8"		0.50	35 •	-	Fire Guard	0.83	•	•	•	•	Std	•	•
	1	1796	20 x 60 x 3/4"		0.50	35	_	Class A	0.83	•	Std	•	•	•	•	1-Yr
	1	1798	30 x 30 x 3/4"		0.50	35	-	Class A	0.83	•	Std	•	•	•	•	1-Yr
	1	Other Size	W: 12" - 30" / L: 1 5/8" or 3/4" Thick	18" – 72"	N/A	N/A	-	Class A	0.83	•	Std	•	•	Std	•	1-Yr
UNE Te	gular															
5/16" ngled	12	1774 1774HRC	24 x 24 x 5/8" 24 x 24 x 5/8"		0.50	35	-	Class A	0.83	•	•	•	•	Std •	•	•
egular ————————————————————————————————————	12	1853	24 x 24 x 5/8"		0.50	35	_	Fire	0.83	٠	٠	٠	•	Std	٠	•
\\	12	1776 1776HRC	24 x 48 x 5/8" 24 x 48 x 5/8"		0.50	35	_	Guard Class A	0.83	•	•	•	•	Std	•	•
	12		• W: 12" – 30" / L: 1 5/8" Thick	18" – 72"	N/A	N/A	-	Class	0.83	•	Std	•	•	Std	•	1-Yr
/16" eveled	29, 44, 48, 52, 56	1775 1775HRC	24 x 24 x 5/8" 24 x 24 x 5/8"		0.50	35	-	Class A	0.83	•	•	•	•	Std	•	•
egular	29, 44, 48, 52, 56	1852	24 x 24 x 5/8"		0.50	35	-	Fire Guard	0.83	•	•	•	•	Std	•	•
<u> </u>	29, 44, 48, 52, 56	1777 1777HRC	24 x 48 x 5/8" 24 x 48 x 5/8"		0.50	35	-	Class A	0.83	•	•	•	•	Std •	•	•
	29, 44, 48, 52, 56	Other Size	W: 12" - 30" / L: 1	18" – 72"	N/A	N/A	_	Class A	0.83	•	Std	•	•	Std	•	1-Yr

SUSPENSION SYSTEMS











30-Year Performance Guarantee & Warranty When installed with Armstrong® Suspension System. Details at armstrongceilings.com (Excludes items 1796, 1798, and large other size panels)

PHYSICAL DATA

Material Wet-formed mineral fiber

Surface Finish

Factory-applied latex paint

Fire Performance

ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled) Fire Guard*: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

ASTM E1264 Classification

Type III, Form 2, Pattern C E Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended
rease subject to high humidity, up to, but not
including, standing water and outdoor applications.
Excludes items 1796, 1798, and large other size panels.

Mold/Mildew Protection

Ceiling panels with BioBlock® performance resist the growth of mold and mildew

Acoustical Performance CAC testing conducted using Silhouette® suspension system.

VOC Emissions

Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Primary (Embodied) Energy See all LCA information on our EPDs.

High Recycled Content

High Recycled content Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines. HRC items contain 15% or greater post-consumer recycled ceilings.

Interlude®

Insulation Value

R Factor – 1.6 (BTU units) R Factor – 0.28 (Watts units)

Weight; Square Feet/Carton 1772 – 0.94 lbs/SF; 64 SF/ctn 1773 – 0.88 lbs/SF; 64 SF/ctn 1796 – 1.33 lbs/SF; 64 SF/ctn 1798 – 1.14 lbs/SF; 50 SF/ctn 1850 – 1.19 lbs/SF; 64 SF/ctn 1851 – 1.22 lbs/SF; 64 SF/ctn 1774, 1775 – 0.75 lbs/SF; 64 SF/ctn 1776, 1777 – 0.75 lbs/SF; 64 SF/ctn 1852 1853 – 1.20 lbs/SF; 48 SF/ctn

1852, 1853 - 1.20 lbs/SF; 48 SF/ctn

Minimum Order Quantity 1 carton, excludes other size panels

Metric Items Available 1772M, 1850M, 1773M, 1851M, 1796M, 1798M, 1775M, 1777M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

rmstrong **CEILING & WALL SOLUTIONS**

TechLine / 1 877 276-7876 armstrongceilings.com/commercial (search: dune) BPCS-4351-517

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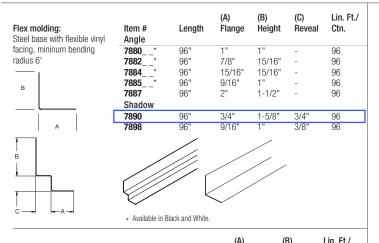
MOLDINGS AND ACCESSORIES

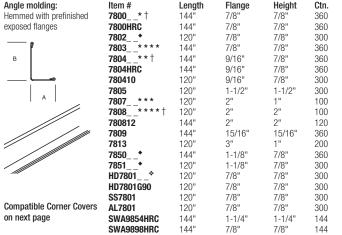
RECYCLED CONTENT Calculate LEED contribution at armstrongceilings.com/greengenie

LOCATION DEPENDENT Angle molding, shadow molding, channel molding, and other wall moldings are an important detail in the design and installation of

each ceiling system. Wall moldings offer a unique solution to each ceiling system by maintaining a consistent look and performance to each design.

Flange



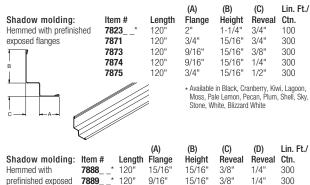


Item #

Angle molding:

TechLine 877 276 7876 armstrongceilings.com/axiom

	0	49898HRC	144	11	8	7/8"	144
Copper, Cream, I ** Available in Black Haze, Gun Metal,	k, Adobe, Bronze, Haze, Natural Alun k, Adobe, Camel, (, Silver Satin, Silve k, Gun Metal Grey,	ninum, Pewte Cranberry, Kiw er Grey, Platinu	r, Śilver, Whi i, Lagoon, M m, Blizzard \	te Aluminum, oss, Pale Lem	White, Blizza	rd White, Platin	ium
	k, Silver Satin, Haz		ilver Gray, B	izzard White,	White		
	ard White and Whi Metal Grey, Natura		ver Satin Sil	ver Grav White	Δluminum I	Hot Dinned Galv	anized G90
	vith TrioGuard™ co			voi didy, vviio	, , , , , , , , , , , , , , , , , , ,	iot Dippod daiv	unizou, doo
Slip-on molding:	Item #	Lengt	(A)		3) leight	Lin. Ft./ Ctn.	
For glue-up tile	7841	120"	1/2		/2"	400	
	7842 7843	120" 120"	1/2 1/2		/8" /4"	400 400	
В							
"F" molding: For 1/2" and	Item #	Length	(A) Width 1/2"	(B) Face 1-1/16"	(C) Flange 7/8"	Lin. Ft./ Ctn. 200	





flanges

Ctn.

 Available in Black, Cranberry, Kiwi, Lagoon, Moss, Pale Lemon, Pecan, Plum, Shell, Sky, Stone, White, Blizzard White

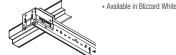
(C)

Lin. Ft./

lin Ft /

(B)

	Item #	Length	Flange	Height	Reveal	Ctn.	
Shadow molding:	7877*	120"	15/16"	15/16"	1/4"	300	
(Compatible with	7878*	120"	15/16"	15/16"	3/8"	300	
Seismic Rx® and BERC 2)	7897*	120"	15/16"	15/16"	1/2"	300	



Shadow molding:

Inside and outside corners



Item # 7874IC 78740C 7862 7877IC 78770C 7878IC 78780C

Decscription

Inside Corner for 7874 Molding Outside Corner for 7874 Molding Inside Corner for 7873 Molding Outside Corner for 7873 Molding Inside Corner for 7877 Molding Outside Corner for 7877 Molding Inside Corner for 7878 Molding Outside Corner for 7878 Molding

(R)



Note: Shadow molding can be rotated to be used with either flange (Corners will not work with rotated moldings)

(1)

			(A)	(D)	(0)	LIII. I L./
Channel molding:	Item #	Length	Flange	Height	Reveal	Ctn.
Hemmed with	7830	120"	15/16"	1-15/16"	15/16"	160
prefinished	7831	120"	15/16"	1-9/16"	15/16"	200
exposed flanges	7834	120"	15/16"	1-1/4"	1/2"	240
	7835*	120"	7/8"	1-3/4"	9/16"	200
С	7835SC**	11"	7/8"	1-3/4"	9/16"	150
В		/ s	Silver Grey	Gun Metal Gi oreader chan num		





2 Appendix B – Particular Specifications

5) Roof Drains

MPA-3: Roof Drains

ROOF DRAIN

>> 867 SERIES

SPECIFICATION

Sioux Chief 867 Series roof drain shall be used where necessary in drainage systems. Roof drain shall have a polypro or cast iron dome strainer. Dome strainer shall fasten to clamping collar. Clamping collar shall fasten to drain body with four screws that thread into brass inserts. Drain body shall have a Sch. 40 hub connection. Designed in accordance with ASME A112.6.4-2003.

STRAINER LOAD RATING

Dome strainer: Polypropylene, enamel-coated cast iron Clamping collar: ABS, enamel-coated cast iron Drain body: ABS, PVC

STRAINER FREE AREA

37.6 in²

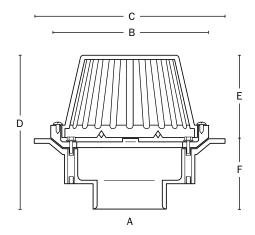
DIMENSIONS

A:	Connection	2", 3", 4" Sch. 40 hub
B:	Clamping collar diameter	8"
C:	Flange diameter	10"
D:	Overall height	81/8"
E:	Elevation	41/8"
F:	Drain body height	4"





867-P3



Create Item Number

867-ABC

e.g. 867-P3U: Roof drain with 3" PVC hub connection, polypro dome strainer, and underdeck clamp kit

CONNECTION A

 $\mathbf{A} = ABS$ drain body

P = PVC drain body

CONNECTION SIZE B

2 = 2" Sch. 40 hub

3 = 3" Sch. 40 hub

4 = 4" Sch. 40 hub

INSTALLED OPTIONS C

M = Cast iron dome strainer1

V = Vandal-resistant dome strainer screws

P = Stainless steel mesh cover screen for dome

C = Iron clamping collar²

STP2 = 2" standpipe for overflow

U = Underdeck clamp kit³

ACCESSORIES (ordered separately)

867-C = Underdeck clamp kit3

867-UM = Stainless steel mesh cover screen for dome

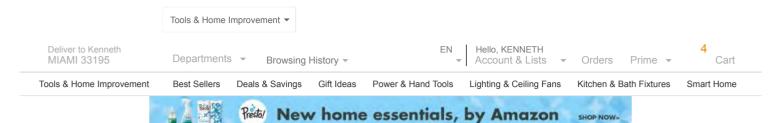
- 1 In place of standard polypro dome strainer
- 2 In place of standard ABS clamping collar
- 3 Includes two clamping bars, thread rod and hardware



2 Appendix B – Particular Specifications

6) Miscellaneous

MPA-3: DOOR CLOSER-MD



Tools & Home Improvement > Hardware > Door Hardware & Locks > Door Closers



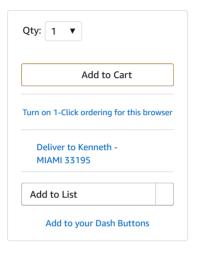
- arm won't interfere with opening while closing doors slowly enough to allow graceful entrance and exit
- GENTLE, HANDS-FREE CLOSING: Let the door do the work. Enjoy automatic closing and latching, maintaining quiet and security
- PRESET POWER: Spring is factory set as a #4 doorcloser, eliminating the need for on-site adjustments. And unlike the competition "back-check" is standard!, however - Closing and Latching speeds are easily adjustable by adjusting the valves.
- CERTIFIABLY RELIABLE: ANSI 156.4 Grade 2 is the high standard achieved on this model #534 Door Closers. Look around and the market comparables are only rated as a Grade 3. This one has actually surpassed a test to 1 million + cycles.
- FITS WHERE YOU NEED IT: The surface mount design and tri pack options, allow you to install this over any high-traffic area while providing complete control
- > See more product details

Compare with similar items

New (1) from \$89.88

Report incorrect product information.

Share



Have one to sell? Sell on Amazon



Ad feedback

	Add to Cart	Add to Cart	Add to Cart	Add to Cart
Customer Rating	(1)	(50)	(36)	(22)
Price	\$8988	\$ 30 ⁹⁹	\$ 41 ⁹⁵	\$ 31 ⁹⁹
Shipping				
Sold By	Homebuilders Hardware	Fortress Hardware Company	Home Hardware Central	Direct_BUY
Color	Aluminum (AL)	Quality Aluminium Construction	Value not found	_
Item Dimensions	_	_	3.6 x 13 x 4.4 in	2 x 11 x 5 in

Product description

Color Name: Aluminum (AL)

Your solution to high foot traffic entrances and exits.

Whether at a office, condo suite entry, hotel room, garage-to-house door, storage rooms, restrooms, and countless other applications, people are streaming in and out all day. You need a reliable, durable method of controlling security and maintaining the doorway especially where there is a security concern. Condo managers and locksmiths are using these door closers to replace worn-out closers installed in millions of buildings throughout North America.

Worry free security, with automatic closing and latching

Allow complete freedom of movement in/out of your space while knowing security and quiet will be automatically restored as the door closes on its own.

In box:

- (1) Door Closer, Grade 2, Medium Duty, Cast Aluminum ANSI/BHMA A156.4 Tested and Certified, Spring Pre-Set as #4
- Brackets and Soffit Plate to allow Regular/Top Jamb/Parallel Arm Installations
- Machine and Wood Screws

Warranty: 10 years

Use on doors weighing up to 125lbs and 36 inches wide, Manufactured from Cast Aluminum, Steel arm, Heat Treated Piston and Pinions, Powder Coated Finished Body to enhance corrosion resistance, Plastic cover (standard), Tri-Pack (Regular, Top Jamb, and Parallel Arm Mounts) standard, Non Handed, 2 Adjustable Valves to control Sweep and Latch,

Certifications: BHMA/ANSI 156.4 Grade 2, UL/cUL Listed

Compare to: Falcon SC94A, Norton 9300

Product information

Color Name: Aluminum (AL)

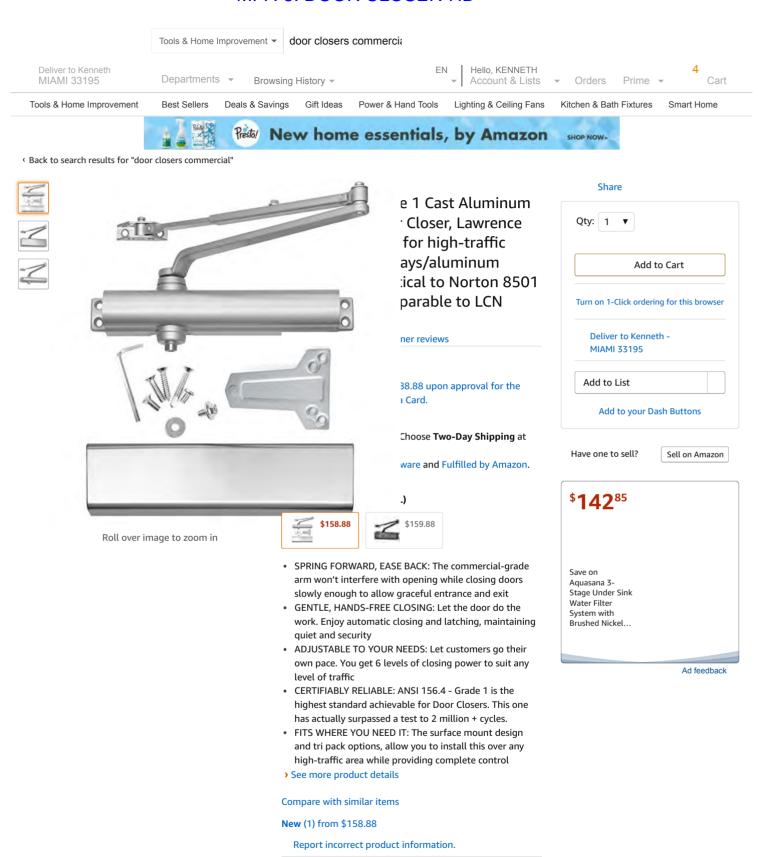
Technical Details

Item Weight	5.03 pounds
Package Dimensions	11.7 x 3.9 x 3.4 inches
Color	Aluminum (AL)
Batteries Included?	No
Batteries Required?	No
batteries required.	

Additional Information

ASIN	B078HLL9YL
Customer Reviews	1 customer review 5.0 out of 5 stars
Best Sellers Rank	#172,853 in Tools & Home Improvement (See top 100) #183 in Tools & Home

MPA-3: DOOR CLOSER-HD



MPA-3: CARD READER DOOR LOCK

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Learn more .

Electronics > Security & Surveillance > Accessories > Access-Control Keypads











Roll over image to zoom in

MFTechs

METechs - Keyless Electronic RFID Card Reader Door Lock MID300 Left Hand

5 customer reviews

| 11 answered questions

Price: \$118.00 + \$18 shipping

Get \$70 off instantly: Pay \$48.00 upon approval for the Amazon Prime Rewards Visa Card.

Note: Not eligible for Amazon Prime.

In Stock.

Get it as soon as Monday, April 23 when you choose Two-Day Shipping at checkout.

Ships from and sold by METechs Global Inc.

- Suitable for door thickness: 35~50mm² and standard 2 3/8" backset (2 3/4" backset is available at time of purchase upon REQUEST).
- 500 RFID can be programmed to the lock; Programming RFID is done by lock, no extra equipment is required.
- Service life of battery: approx. 20,000 times (up to two years), Low battery alert.
- Solid structure design for security and durability, Tamper-proof error function, vandal-resistant lever design.
- Easy installation, only need a Philips screw driver to install on predrilled door. One year METech warranty and lifetime tech support

Compare with similar items

New (1) from \$118.00 + \$18.00 shipping

Report incorrect product information.

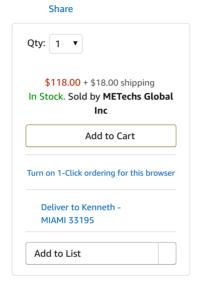
EZVIZ SMART HOME
Incredible 360° Picture

> Shop now

HD...

Mini 360 Plus 1080p HD Pan/Tilt/Z...

Ad feedback



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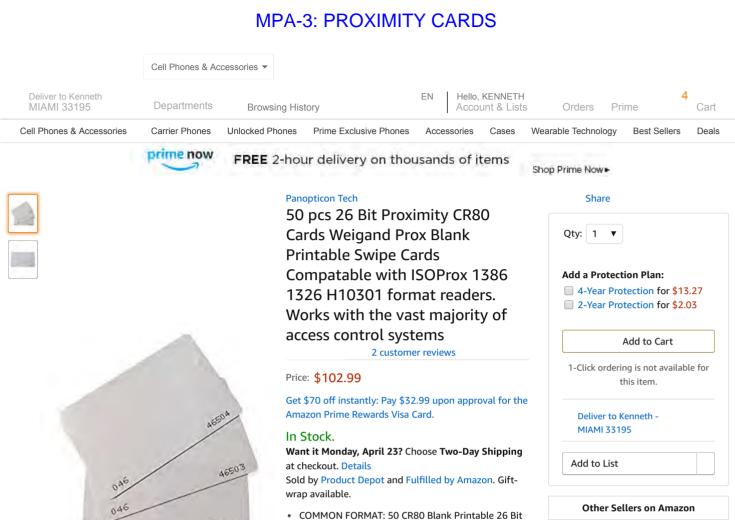
Ad feedback

Frequently bought together

Total price: \$254.00

Add all three to Cart

Add all three to List



key cards work with. Compatible 125khz card readers include: Proxpoint Plus, Thinline II, MiniProx, RP40, RP10, RPK40, RP15, Prox80, ProxPro, EntryProx 4045, Bosch ARD-AYJ12, Viking PRX-2,

access control cards formatted with the 26-bit

H10301 standard format used on most access

• COMPATIBLE: These isoprox compatible contactless cards work with the same 26 bit weigand readers that both the 1386 ISOProx® and 1326 ISOProx®

control security systems.

APPEARANCE: 2.125mm" x 3.370mm" x 0.030mm" blank white printable CR80 keyless entry cards

- SITE CODE: These RFID access control cards come in the site code 46
- DOES NOT WORK WITH INKJET PRINTERS

New (4) from \$98.75

and many more.

Report incorrect product information.

New (4) from \$98.75 Have one to sell? Sell on Amazon

Ad feedback

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