Ambient Light Sensor

Datasheet

Stock#	Description
ALS1-SENS-TP-AS	Ambient Light Sensor

Description

Ambient Light Sensor (ALS) is part of a versatile EIP (Environmental Interface Peripherals) family, and it accurately measures the room's lighting level by automatically adjusting its brightness. Through NuLEDs™ PoE Integration, ALS offers efficient daylight harvesting that helps save on energy and cost. This sustainable option enhances occupant's comfort by seamlessly integrating with NuLEDs™ intelligent lighting management systems.

Through NuLEDs™ PoE lighting integration, artificial lights will automatically adjust their brightness level or switch off when ample natural light is available. This intelligent approach reduces unnecessary lighting and maximizes energy savings while providing nuanced control over lighting levels based on the amount of natural light present. The result is a consistently comfortable and well-lit environment, with minimal reliance on artificial lighting during daylight hours. This saves you money on energy bills and supports green building initiatives and certifications.

This incredible sensor seamlessly connects to SPICEbox™ via its IP address, allowing users to easily manage NuSPICE™ loads with customized light-level events, scenes, and fade times. Additionally, ALS can be personalized through user-friendly NuPAC and APPIO programming capabilities, taking the PoE lighting game to the next level.

Overall, ALS offers a cost-effective and sustainable lighting solution with fast and easy installation through CAT5 cable. It can positively impact occupant's mood, productivity, and overall well-being.

Features

- **Optimized Energy Efficiency:** Detects natural light levels and maximize energy savings by reducing artificial light usage during daylight hours.
- **Sustainability and Green Building Compliance:** Environment friendly product and adheres to green building standards by leveraging natural light by utilizing ALS for daylight harvesting
- **Easy to Install and Manage:** Powering the system through Cat5 cables is effortless, ensuring you can set up the system quickly and efficiently.
- **Customizable and Scalable:** Customizable lighting system that can be managed to meet maximum system performance requirements.

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Ambient Light Sensor

Datasheet

Specifications

Equipment Kit	
Ambient Light Sensor, Installation Guide	
Hardware	
Standby Power	0.5 Watts
Power Supply	SPICEbox™ PoE
Input Power	NULINK™ Bus
Input Voltage	5VDC
RJ45 Ports	2 X RJ45 ports connecting to SPICEbox™ (Only need to plug-in one)
Protocols	NuSPICE™, CoAP
Control Interface	NuLEDs™ NuPAC NuLEDs™ APPIO
Wiring	CAT5e or CAT6 Ethernet Cable (328 ft. (100 m.)
Maximum Wiring Length	50 ft. low baud rate and no terminations
Mechanical	
Dimensions (L X W X D)	1.00 in. (25.40 mm) x 2.00 in. (50.80 mm) x 2.500 in. (63.50 mm)
Weight	27 gm.
Mounting	Wall or surface mounted. Cut-in 2.25” Hole with torsion springs.
Dimming	Programmable with NuSPICE™
Environmental	
Operating Temperature	32° to 104°F (0° to 40°C) ambient
Humidity	10-80% Non-Condensing
Agency Listings and Compliance	
UL Listed UL60950-1 (As SPICebox™ accessory)	
FCC Class A Compliant	
CE Compliant	
RoHS	

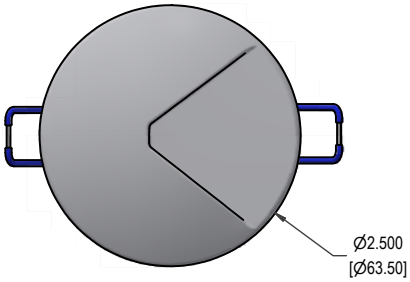
Warning

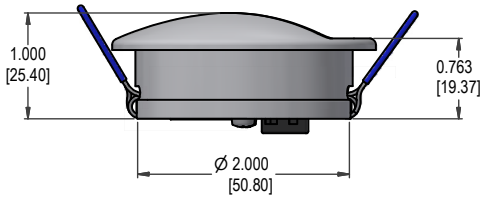
- **Caution** - Observe precautions for handling electrostatic sensitive devices.
- Case to the SPICEbox™ should not be earth grounded.
- Do not use outdoors.
- **Warning** - Risk of Electric Shock. Do not handle energized module with wet hands or when standing on wet or damp surfaces.
- Use only with Class 2 Power Unit - 60VDC maximum.
- Conforms to CE, FCC standards
- **Warranty** - Voided if device has been modified from its original configuration.

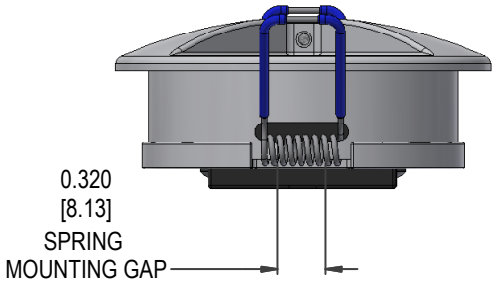
Mounting and Dimensions

1. Cut-in 2.25” Hole with torsion springs.
2. Mount it on a wall or flat-surface.

Caution: Please be aware that when mounting SPICEbox™ to metal surfaces or pockets, the gateway must be isolated from possible earth or building electrical grounding and other gateways.







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Ambient Light Sensor
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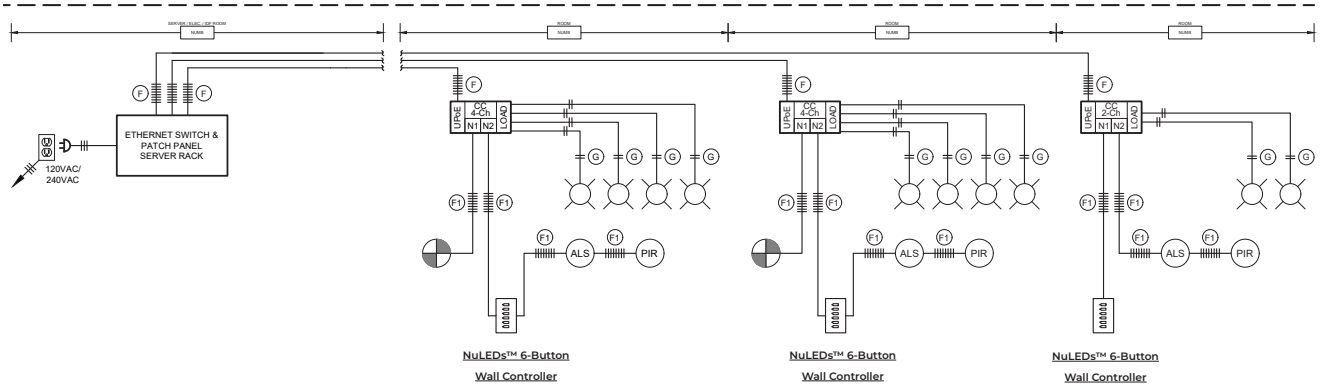
NuLINK™ Network Wiring Diagram - Constant Current



ETHERNET SWITCH & PATCH PANEL SERVER RACK — ETHERNET NETWORK SWITCH (FURNISHED & INSTALLED BY OTHERS)

UPoE | CV #-Ch | N1 | N2 | LOAD — NuLEDs™ SPICEbox™ CONSTANT VOLTAGE
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: SBLC-CV4C-TP-AS

UPoE | CC #-Ch | N1 | N2 | LOAD — NuLEDs™ SPICEbox™ CONSTANT CURRENT
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: SBLC-CC2C-TP-AS (2-CHANNEL)
P/N: SBLC-CC4C-TP-AS (4-CHANNEL)

(BACK OF CTRL) (FRONT OF CTRL) — NuLEDs™ 6-BUTTON WALL CONTROLLER (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: 6BUT-CONT-TP-AS

PIR — NuLEDs™ PASSIVE INFRARED MOTION LIGHT SENSOR (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: PIRS-MOSN-TP-AS

ALS — NuLEDs™ AMBIENT LIGHT SENSOR (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: ALS1-SENS-TP-AS

NuLEDs™ EXIT LIGHT (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: EXIT-GREN-1S-TP (ONE SIDED, GREEN TOP)
P/N: EXIT-GREN-2S-TP (TWO SIDED, GREEN TOP)
P/N: EXIT-RED1-1S-TP (ONE SIDED, RED TOP)
P/N: EXIT-RED1-2S-TP (TWO SIDED, RED TOP)

LUMINAIRE (LOAD) FIXTURE
(FURNISHED & INSTALLED BY OTHERS)
SEE ARCHITECTURAL/LIGHTING PLAN & SCHEDULES FOR SPECIFICS

NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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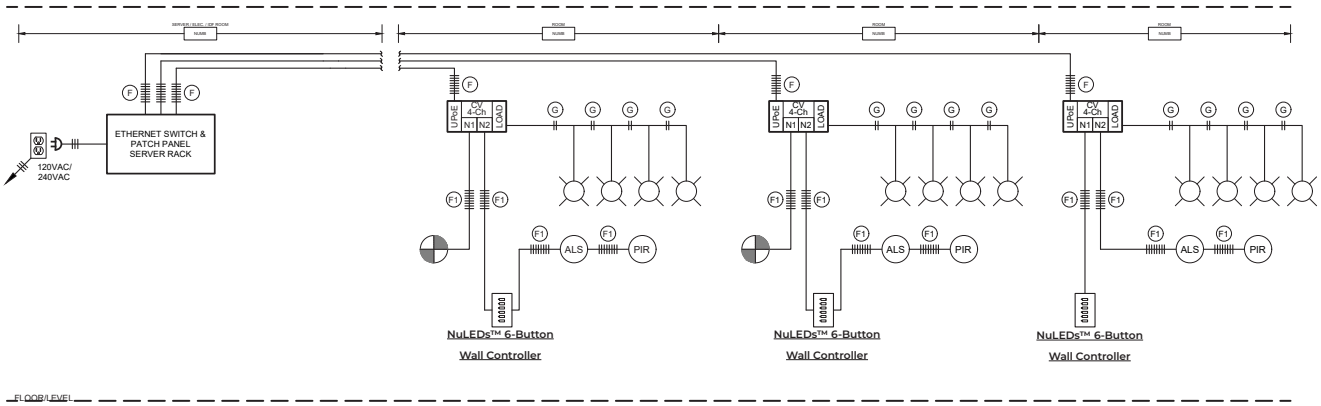
Ambient Light Sensor
Datasheet

NuLINK™ Network Wiring Diagram - Constant Voltage



EQUIPMENT KEY FOR NuLEDs/NuLINK SYSTEM

ETHERNET SWITCH & PATCH PANEL SERVER RACK — ETHERNET NETWORK SWITCH (FURNISHED & INSTALLED BY OTHERS)

UPoE | CV #-Ch | N1 | N2 | LOAD — NuLEDs™ SPICEbox™ CONSTANT VOLTAGE
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: SBLC-CV4C-TP-AS

UPoE | CC #-Ch | N1 | N2 | LOAD — NuLEDs™ SPICEbox™ CONSTANT CURRENT
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: SBLC-CC2C-TP-AS (2-CHANNEL)
P/N: SBLC-CC4C-TP-AS (4-CHANNEL)

(BACK OF CTRL) (FRONT OF CTRL) — NuLEDs™ 6-BUTTON WALL CONTROLLER (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: 6BUT-CONT-TP-AS

PIR — NuLEDs™ PASSIVE INFRARED MOTION LIGHT SENSOR (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: PIRS-MOSN-TP-AS

ALS — NuLEDs™ AMBIENT LIGHT SENSOR (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: ALS1-SENS-TP-AS

NuLEDs™ EXIT LIGHT (EIP)
QTY. REQ. = QUANTITY
(FURNISHED BY MECHO® & INSTALLED BY OTHERS)
P/N: EXIT-GREN-1S-TP (ONE SIDED, GREEN TOP)
P/N: EXIT-GREN-2S-TP (TWO SIDED, GREEN TOP)
P/N: EXIT-RED1-1S-TP (ONE SIDED, RED TOP)
P/N: EXIT-RED1-2S-TP (TWO SIDED, RED TOP)

LUMINAIRE (LOAD) FIXTURE
(FURNISHED & INSTALLED BY OTHERS)
SEE ARCHITECTURAL/LIGHTING PLAN & SCHEDULES FOR SPECIFICS

NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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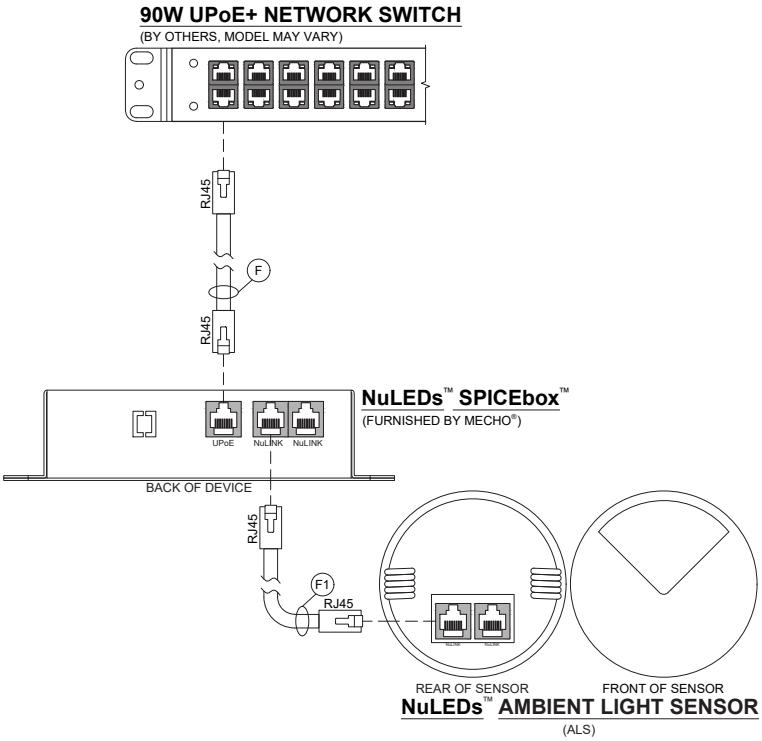
Point-to-Point Diagram - ALS PoE Integration & NuLINK™ Network



NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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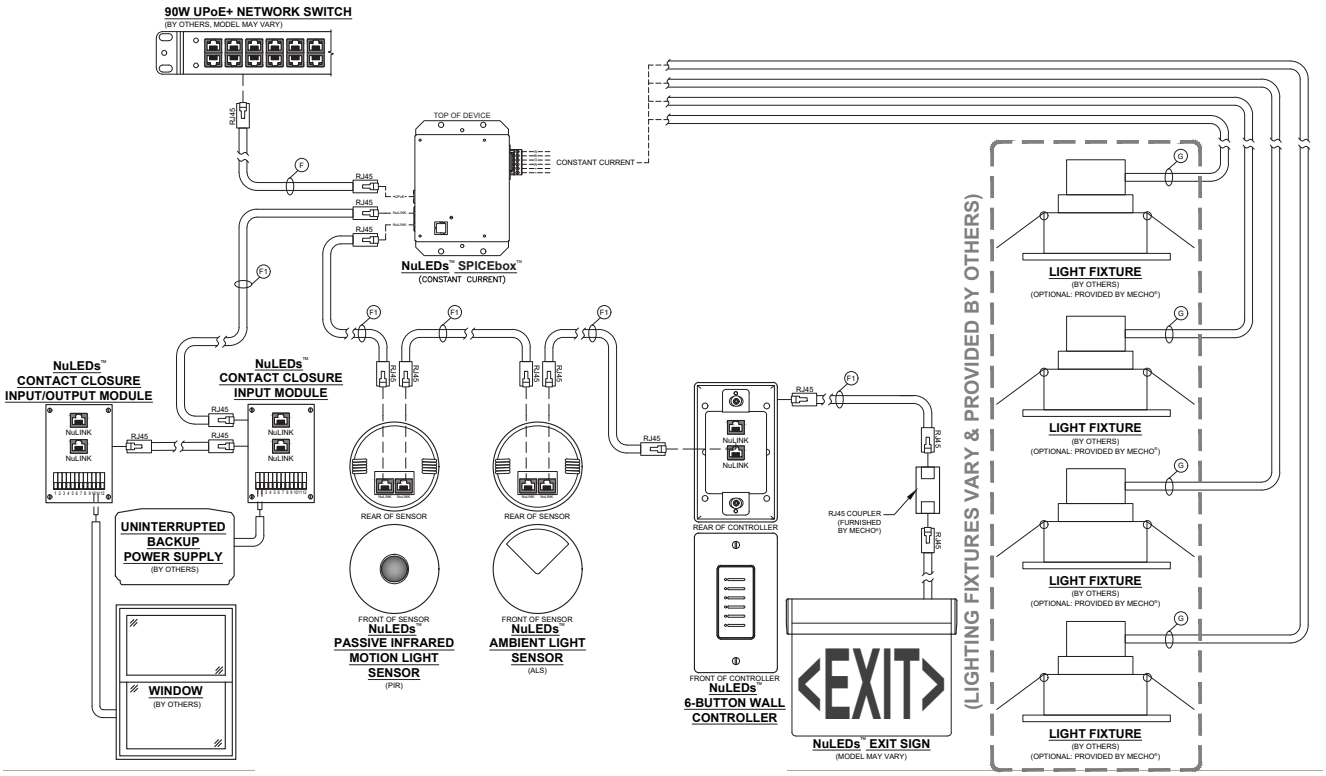
Ambient Light Sensor
Datasheet

Point-to-Point Diagram



NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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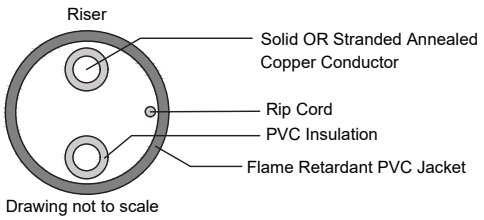
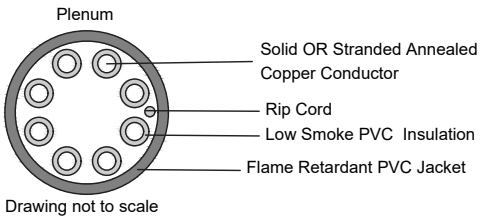
Cable Reference Drawing

CABLE G REFERENCE DRAWING





SPECIFICATIONS:

CONDUCTOR COUNT:	2 THRU 12 CONDUCTORS
CONDUCTOR:	FULLY ANNEALED, SOLID OR STRANGED BARE COPPER
AWG (mm):	18 (1.16)
INSULATION:	LOW SMOKE PVC
INSULATION COLORS:	CONDUCTOR 1: BLACK CONDUCTOR 2: RED CONDUCTOR 3: WHITE CONDUCTOR 4: GREEN CONDUCTOR 5: BROWN CONDUCTOR 6: BLUE CONDUCTOR 7: ORANGE CONDUCTOR 8: YELLOW CONDUCTOR 9: VIOLET CONDUCTOR 10: GRAY CONDUCTOR 11: PINK CONDUCTOR 12: TAN
JACKET:	RISER: GRAY, FLAME RETARDANT (FR) PVC PLENUM: WHITE, LOW SMOKE PVC
PACKAGE:	BLACK, RIBBED, PLASTIC RECYCLABLE SPOOL, REEL-IN-A-BOX OR WOOD REEL

PERFORMANCE COMPLIANCE:	NEC ARTICLE 725 NEC ARTICLE 800 NEC ARTICLE 760 UL®13 CL3R/CL3P UL 444 CMR/CMP* UL 1424 FPLR/FPLP UL 1666 NFPA 262 CALIFORNIA STATE FIRE MARSHALL RoHS-COMPLIANT/RoHS 2-COMPLIANT
NRTL PROGRAMS:	UL LISTED CL3R, CMR, FPLR UL LISTEN CL3P, CMP, FPLP

Part Numbers and Physical Characteristics:

Listing	Part Number[1]	Conductor Count	AWG (mm)	Conductor Type	Jacket Color[2]	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)
CL3R/CMR/FPLR	2F-C1x-31	2	18 (1.16)	7 x 26 AWG	GRAY	0.16 (4.1)	17 (25)
CL3R/CMR/FPLR	2F-C2x-31	3	18 (1.16)	7 x 26 AWG	GRAY	0.17 (4.3)	22 (9)
CL3R/CMR/FPLR	2F-C3x-31	4	18 (1.16)	7 x 26 AWG	GRAY	0.19 (4.8)	30 (45)
CL3R/CMR/FPLR	2F-C4x-31	6	18 (1.16)	7 x 26 AWG	GRAY	0.23 (5.8)	43 (64)
CL3R/CMR/FPLR	2F-C5x-31	8	18 (1.16)	7 x 26 AWG	GRAY	0.25 (6.4)	56 (83)
CL3R/CMR/FPLR	2F-C7x-31	12	18 (1.16)	7 x 26 AWG	GRAY	0.30 (7.6)	83 (124)
CL3P/CMP/FPLP	2F-C1x-43	2	18 (1.16)	7 x 26 AWG	WHITE	0.16 (4.1)	17 (25)
CL3P/CMP/FPLP	2F-C2x-43	3	18 (1.16)	7 x 26 AWG	WHITE	0.17 (4.3)	22 (9)
CL3P/CMP/FPLP	2F-C3x-43	4	18 (1.16)	7 x 26 AWG	WHITE	0.19 (4.8)	30 (45)
CL3P/CMP/FPLP	2F-C4x-43	6	18 (1.16)	7 x 26 AWG	WHITE	0.23 (5.8)	44 (65)
CL3P/CMP/FPLP	2F-C5x-43	8	18 (1.16)	7 x 26 AWG	WHITE	0.25 (6.4)	57 (85)
CL3P/CMP/FPLP	2F-C7x-43	12	18 (1.16)	7 x 26 AWG	WHITE	0.30 (7.6)	85 (126)

Packaging Options:

	Plastic Spool		Reel-in-a-Box		Wood Reel	Shrink Wrap	
	1,000'	500'	1,000'	500'	1,000'	250'	500'
[1]Replace "x" with:	2	3	4	5	6	7	8

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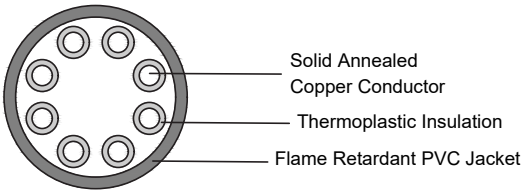
Cable Reference Drawing

CABLE F REFERENCE DRAWING



Drawing not to scale

SUPERIOR ESSEX (www.superioressex.com)

PART No. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM)

SPECIFICATIONS (SOLID): CATEGORY 5E+

PAIR COUNT:	4
CONDUCTOR:	SOLID ANNEALED COPPER
AWG (mm):	22 (0.51)
INSULATION:	CMR: POLYOLEFIN CMP: FEP
INSULATION COLORS:	PAIR 1: COLORTIP LIGHT BLUE, BLUE PAIR 2: COLORTIP LIGHT ORANGE, ORANGE PAIR 3: COLORTIP LIGHT GREEN, GREEN PAIR 4: COLORTIP LIGHT BROWN, BROWN
JACKET:	CMR: FLAME RETARDANT (FR) PVC CMP: FR, LOW SMOKE PVC

CHARACTERISTIC IMPEDANCE Ohms:	100 ± 15
NOMINAL VELOCITY OF PROPAGATION %:	CMR: 71 CMP: 74
PERFORMANCE COMPLIANCE:	UL 444 CSA C22.2 No. 214-08 UL 1666 NFPA 262 ANSI/TIA-568-C.2 ANSI/ICEA S-90-661-2012 Article 800, NEC (NFPA 70) HDBaseT Class A and B

NRTL PROGRAMS:	UL Verified CAT 5e UL, c(UL) Listed CMR UL, c(UL) Listed CMP HDBaseT Certified
SUSTAINABILITY:	UL Certified EPD HPD USGBC® Member RoHS-compliant/RoHS 2-compliant REACH-compliant
	Temperature cable rating: 75°C for CMR and 90°C for CMP

PART NUMBERS AND PHYSICAL CHARACTERISTICS

Listing	Part Number[1]	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	Package	Packages per Pallet
CMR	PW52-H46-x5	0.23 (4.6)	28 (25)	1,000 ft BrakeBox®	12
CMR	PW52-H72-x5	0.23 (4.6)	28 (25)	1,000 ft Plywood Reel	16
CMP	PW52-H46-x8	0.23 (4.8)	37 (28)	1,000 ft BrakeBox	12
CMP	PW52-H72-x8	0.23 (4.8)	37 (28)	1,000 ft Plywood Reel	16

JACKET COLORS

[1]Replace “x” with:	Blue = 2	Gray = 3	White = 4	Green = 5
Yellow = 6	Purple = 7	Red = 9	Black = E	

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Low Voltage Cable Legend and Crimping Instructions

LOW VOLTAGE CABLE LEGEND - EIA568B

NOTES:
1. PARALLEL WIRING TO NEXT DEVICE PER BRANCH CIRCUIT CAPACITY. ALL CONNECTION MUST MEET NATIONAL AND LOCAL CODES AND REGULATIONS.
2. ADDRESS SCHEDULES REQUIRED.
3. MAXIMUM VOLTAGE FOR ALL UNMARKED CABLE IS 43.5 VDC.
4. LOW VOLTAGE CABLES SHOULD NOT BE ROUTED NEAR POWER LINES OR ELECTRICAL DEVICES SUCH AS LIGHTING BALLASTS, DIMMERS AND LED DRIVERS THAT MAY EXPOSE THE SYSTEM TO EXCESSIVE ELECTRICAL NOISE.

(F)

CAT5E+ - CABLE FOR UPOE NETWORK WIRING CONNECTIONS:
SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR)
TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS
RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM)
PART NO. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE

DISTANCE LIMITATION: 328'. MAX. NODES: 1
SEE "CABLE F REFERENCE DRAWING" FOR DETAILED SPECIFICATION.
(FURNISHED & INSTALLED BY OTHERS)

(F1)

CAT5E+ - CABLE FOR NULINK NETWORK WIRING CONNECTIONS:
SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR)
TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS
RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM)
PART NO.PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE

DISTANCE LIMITATION: 50'. MAX. EIPS: 15
SEE CABLE "F" REFERENCE DRAWING FOR DETAILED SPECIFICATION.
(FURNISHED & INSTALLED BY OTHERS)

(G)

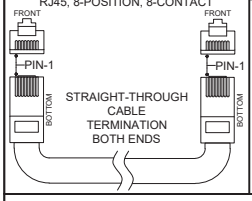
CABLE FOR SPICEBOX TO LIGHT (LOAD) FIXTURE WIRING CONNECTIONS:
SPECIFICATION: 2 TO 12-CONDUCTOR, (18AWG UNSHIELDED)
RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM 1-800-551-8948)
LISTING NO. CL3R/CMR/FPLR (NON-PLENUM), & CL3P/CMP/FPLP (PLENUM)

DISTANCE LIMITATION: VARIES PER LOAD. MAX. LOADS: VARIES BY WATTS
SEE CABLE "G" REFERENCE DRAWING FOR DETAILED SPECIFICATION.
(FURNISHED & INSTALLED BY OTHERS)

EIA 568B CRIMPING - 8 CONDUCTOR CABLE

UPoE CONNECTIONS ON UPoE NETWORK

MODULAR PLUG ASSEMBLY:
RJ45, 8-POSITION, 8-CONTACT



CABLE TYPE: CAT5/CAT5e/CAT6

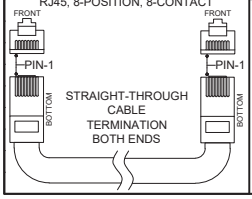
CAT X CRIMP

PIN#:	WIRE COLOR:	FUNCTION:
• 1	ORANGE/WHITE STRIPE	DATA A+/POWER-
2	ORANGE SOLID	DATA A-/POWER-
3	GREEN/WHITE STRIPE	DATA B+/POWER+
4	BLUE SOLID	DATA C+/POWER+
5	BLUE/WHITE STRIPE	DATA C-/POWER+
6	GREEN SOLID	DATA B-/POWER+
7	BROWN/WHITE STRIPE	DATA D+/POWER-
8	**BROWN SOLID**	**DATA D-/POWER-**

EIA 568B CRIMPING - 8 CONDUCTOR CABLE

NuLED CONNECTIONS ON NuLINK MECHONET+ (RS485) NETWORK

MODULAR PLUG ASSEMBLY:
RJ45, 8-POSITION, 8-CONTACT



CABLE TYPE: CAT5/CAT5e/CAT6

CAT X CRIMP

PIN#:	WIRE COLOR:	FUNCTION:
• 1	ORANGE/WHITE STRIPE	NuLINK RS485+
2	ORANGE SOLID	NuLINK RS485-
3	GREEN/WHITE STRIPE	MECHONET+ RS485-
4	BLUE SOLID	5V+
5	BLUE/WHITE STRIPE	5V+
6	GREEN SOLID	MECHONET RS485+
7	BROWN/WHITE STRIPE	5V GND
8	**BROWN SOLID**	**N/C**

Warranty

Mecho's warranty ensures its products against defects in materials and workmanship for up to 25 years. The warranty timeline shall vary for different products. For complete warranty information, please visit https://www.mechoshade.com/warranty or contact your Mecho® Representative.

Technical support

Mecho
T: +1 (800) 327-9798 (Follow prompts for Mecho® & Tech Support)
E: techsupport@mechoshade.com
W: www.mechoshade.com

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