

PIR Motion Sensor

Datasheet

Stock#	Description
1-PIRS-MOLS-NUL	PIR Motion Sensor

Description

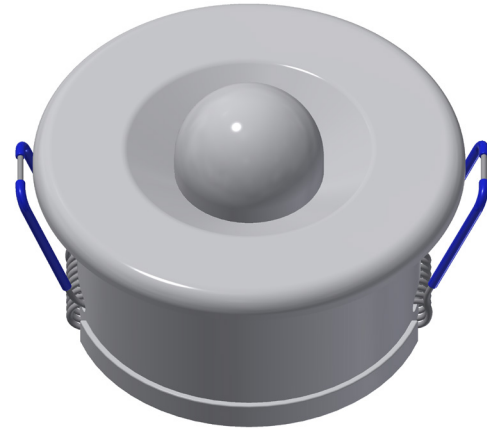
The Passive Infrared (PIR) sensor is a cutting-edge device that detects motion by sensing changes in the infrared levels emitted by surrounding objects. One of the most impressive features of PIR sensors is their integration with lighting systems, which allows them to trigger lights to turn on or off based on occupancy, leading to significant energy savings.

The PIR sensor is an EIP associated with the IP Address of its host SPICEbox™. With occupancy and vacancy events programmed into the Management Software, any NuSPICE load (fixture) can be controlled with scenes and fade times. These EIPs are programmed through NuPAC (NuLEDs Provisioning and Configuration Software).

By incorporating PIR sensors into lighting systems, businesses, and homeowners can save on electricity bills by reducing unnecessary energy consumption. PIR sensors minimize the runtime of lights in unoccupied areas, leading to energy savings. With NuLEDs PoE systems, more customized control over lighting is possible when combined with PIR sensors. Specific adjustments can be made based on usage patterns and occupancy levels.

PIR sensors also have the added benefit of being integrated with security systems. They can trigger alerts or activate specific security measures when detecting unexpected motion in designated areas. Spaces automatically light up when people enter and switch off when they leave, providing convenience and comfort.

Reducing energy consumption is crucial for cost savings and a smaller carbon footprint, and PIR sensors make it easy to optimize energy usage. By incorporating PIR sensors into NuLEDs PoE lighting systems, sustainability goals can be achieved while also enjoying the benefits of cutting-edge technology. NuLEDs PoE lighting systems are also compatible with various sensors, including PIR sensors, and they use CAT cable for fast plug-and-play installation.



Features

- **Optimized Energy Efficiency:** Significant energy savings with automated lighting adjustments based on occupancy
- **Enhanced Security:** Integrated security systems to detect motion
- **Easy to Install and Manage:** Effortless powering the system through Cat5 cables
- **Customizable and Scalable:** Customized zoning to manage larger spaces.

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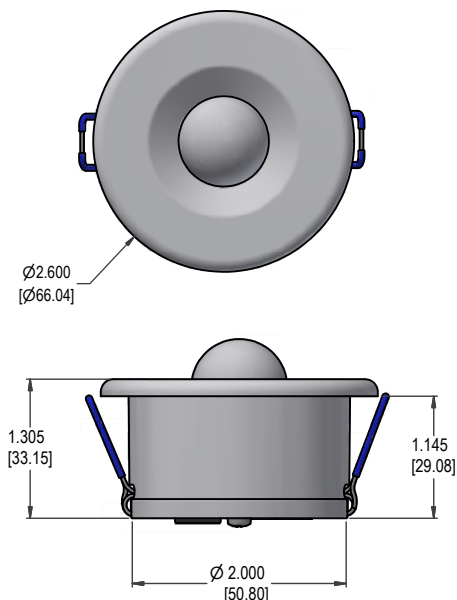
Datasheet Specifications

Equipment Kit	
Includes	PIR Motion 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)	1.305 in. (33.15 mm) x 2.000 in. (50.80 mm) x 2.600 in. (66.04 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	

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.



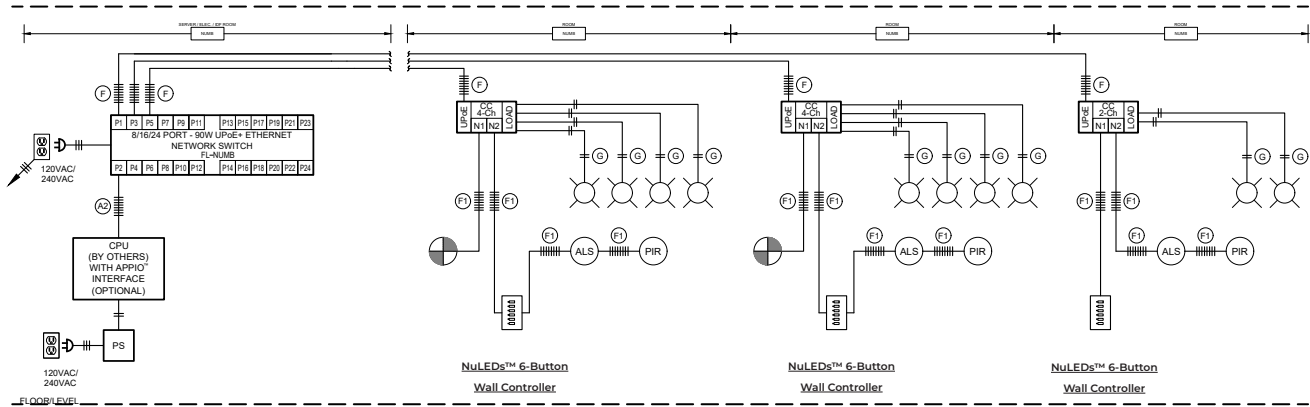
⚠ Warning

- **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.

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NuLINK™ Network Wiring Diagram - Constant Current



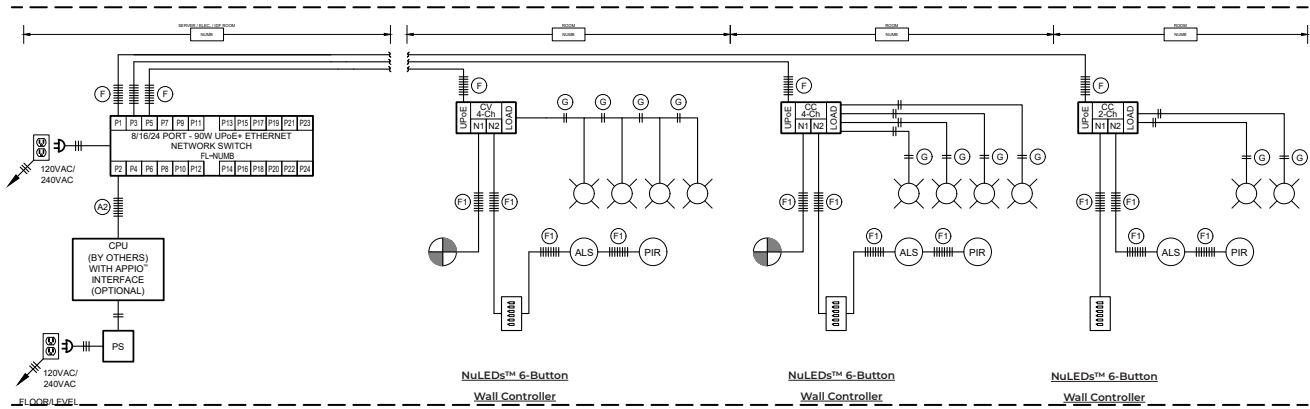
EQUIPMENT KEY FOR NuLEDs/NuLINK SYSTEM																							
<table border="1"> <tr> <td>P1</td><td>P2</td><td>P3</td><td>P4</td><td>P5</td><td>P6</td><td>P7</td><td>P8</td><td>P9</td><td>P10</td><td>P11</td><td>P12</td><td>P13</td><td>P14</td><td>P15</td><td>P16</td><td>P17</td><td>P18</td><td>P19</td><td>P20</td><td>P21</td><td>P22</td> </tr> </table> 8/16/24 PORT - 90W UPoE+ ETHERNET NETWORK SWITCH FURNISHED BY MECHO® & INSTALLED BY OTHERS	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	8/16/24 PORT - 90W UPoE+ ETHERNET NETWORK SWITCH QTY. REQ. = QUANTITY (FURNISHED & INSTALLED BY OTHERS)
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22		
<table border="1"> <tr> <td>CV</td><td>4-Ch</td><td>2</td><td>2</td> </tr> <tr> <td>UPoE</td><td>N1</td><td>N2</td><td>2</td> </tr> </table>	CV	4-Ch	2	2	UPoE	N1	N2	2	NuLEDs™ SPICEbox™ CONSTANT VOLTAGE QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: NLC-UPoE-CV-V-VOLTAGE														
CV	4-Ch	2	2																				
UPoE	N1	N2	2																				
<table border="1"> <tr> <td>CC</td><td>4-Ch</td><td>2</td><td>2</td> </tr> <tr> <td>UPoE</td><td>N1</td><td>N2</td><td>2</td> </tr> </table>	CC	4-Ch	2	2	UPoE	N1	N2	2	NuLEDs™ SPICEbox™ CONSTANT CURRENT QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: 1-CCLT-0028-NUL (2-CHANNEL) P/N: 1-CCLT-0028-4CH (4-CHANNEL)														
CC	4-Ch	2	2																				
UPoE	N1	N2	2																				
(BACK OF CTRL) <table border="1"><tr><td>6</td></tr></table> (FRONT OF CTRL) <table border="1"><tr><td>6</td></tr></table>	6	6	NuLEDs™ 6-BUTTON WALL CONTROLLER (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: Nu-6B-WC-SB																				
6																							
6																							
	NuLEDs™ PASSIVE INFRARED MOTION LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: Nu-PIR																						
	NuLEDs™ AMBIENT LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: Nu-ALS																						
	NuLEDs™ EXIT LIGHT (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECHO® & INSTALLED BY OTHERS) P/N: 1-EXIT-LGHT-NUL																						
	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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NuLINK™ Network Wiring Diagram - Constant Voltage and Current



EQUIPMENT KEY FOR NuLEDs/NULINK SYSTEM	
	8-PORT 90W UPOE+ ETHERNET NETWORK SWITCH QTY. REQ. = QUANTITY (FURNISHED & INSTALLED BY OTHERS)
	NuLEDs™ SPICEbox™ CONSTANT VOLTAGE QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: NLC-UPOE-CV-VOLTAGE
	NuLEDs™ SPICEbox™ CONSTANT CURRENT QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: 1-CCLT-0028-NUL (2-CHANNEL) P/N: 1-CCLT-0028-4CH (4-CHANNEL)
	NuLEDs™ 6-BUTTON WALL CONTROLLER (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: Nu-6B-WC-SB
	NuLEDs™ PASSIVE INFRARED MOTION LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: Nu-PIR
	NuLEDs™ AMBIENT LIGHT SENSOR (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: Nu-ALS
	NuLEDs™ EXIT LIGHT (EIP) QTY. REQ. = QUANTITY (FURNISHED BY MECO® & INSTALLED BY OTHERS) P/N: 1-EXIT-LIGHT-NUL
	LUMINAIRE (LOAD) FIXTURE (FURNISHED & INSTALLED BY OTHERS) *SEE ARCHITECTURAL LIGHTING PLAN & SCHEDULES FOR SPECIFICS*

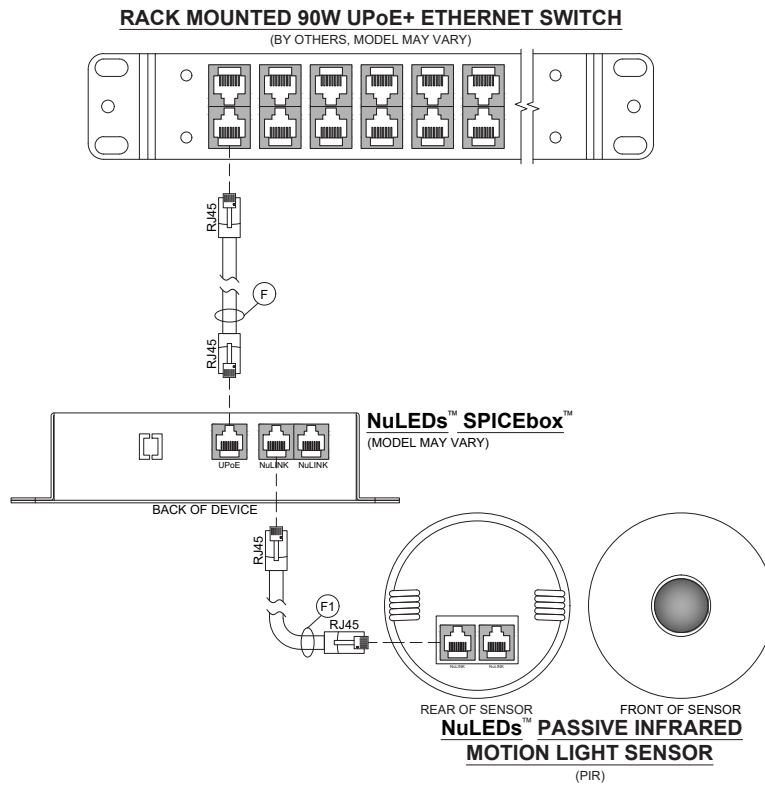
NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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Point-to-Point Diagram - PIR UPoE Integration & NuLINK™ Network

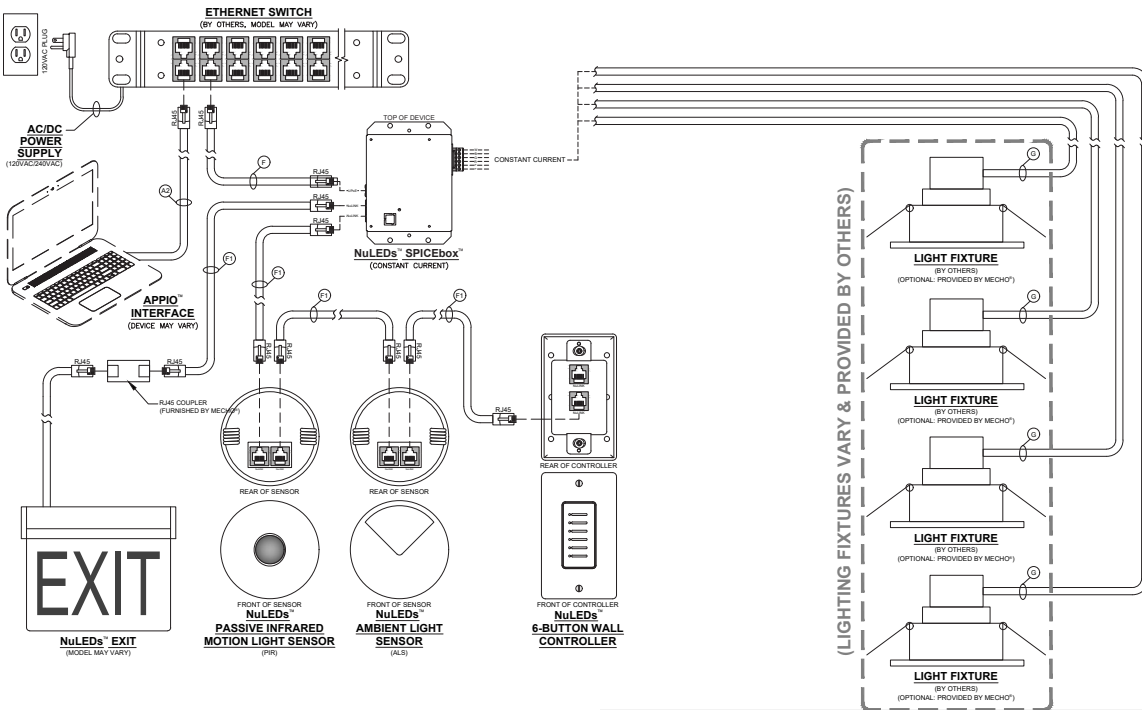
NOTE: If two PIR motion sensors are connected to one SPICEbox™, one of them will need a serial address change.



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

PIR Motion Sensor Datasheet

Point-to-Point Diagram



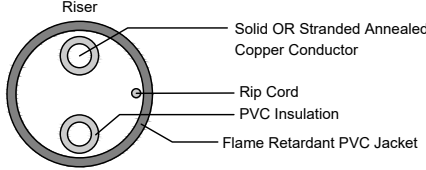
NOTE: Refer to page 9 for the Low Voltage Cable Legend and Crimping Instructions.

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Cable Reference Drawing

CABLE G REFERENCE DRAWING



Riser

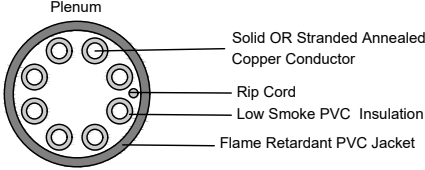
Solid OR Stranded Annealed Copper Conductor

Rip Cord

PVC Insulation

Flame Retardant PVC Jacket

Drawing not to scale



Plenum

Solid OR Stranded Annealed Copper Conductor

Rip Cord

Low Smoke PVC Insulation

Flame Retardant PVC Jacket

Drawing not to scale

SPECIFICATIONS:

CONDUCTOR COUNT:	2 THRU 12 CONDUCTORS	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
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	NRTL PROGRAMS:	UL LISTED CL3R, CMR, FPLR UL LISTEN CL3P, CMP, FPLP
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		

Part Numbers and Physical Characteristics:

Listing	Part Number*	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:

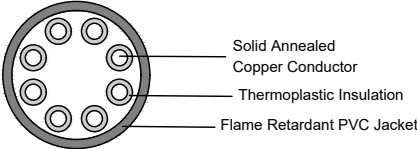
	Plastic Spool		Reel-in-a-Box		Wood Reel	Shrink Wrap	
	1,000'	500'	1,000'	500'	1,000'	250'	500'
*Replace "x" with:	2	3	4	5	6	7	8

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Cable Reference Drawing

CABLE F REFERENCE DRAWING



Solid Annealed Copper Conductor

Thermoplastic Insulation

Flame Retardant PVC Jacket

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	CHARACTERISTIC IMPEDANCE Ohms:	100 ± 15
CONDUCTOR:	SOLID ANNEALED COPPER	NOMINAL VELOCITY OF PROPAGATION %:	CMR: 71 CMP: 74
AWG (mm):	22 (0.51)	PERFORMANCE COMPLIANCE:	UL 444 CSA C22.2 No. 214-08 UL 1666 NFPA 262 ANSI/TIA-568-C.2
INSULATION:	CMR: POLYOLEFIN CMP: FEP		ANSI/CEA S-90-661-2012 Article 800, NEC (NFPA 70) HDBaseT Class A and B
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	NRTL PROGRAMS:	UL Verified CAT 5e UL, c(UL) Listed CMR UL, c(UL) Listed CMP HDBaseT Certified
JACKET:	CMR: FLAME RETARDANT (FR) PVC CMP: FR, LOW SMOKE PVC	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

*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

A2	<p>CAT5E/6 - CABLE FOR ETHERNET WIRING CONNECTIONS: 24AWG 4UTP (8-CONDUCTOR STRANDED UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: OLYMPIC WIRE AND CABLE (WWW.OLYMPICWIRE.COM 1-800-526-2269) PART NO. 3078MSF-8 (NON-PLENUM) OR COMPATIBLE CABLE.</p> <p style="text-align: center;">-----OR-----</p> <p>24AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: OLYMPIC WIRE AND CABLE (WWW.OLYMPICWIRE.COM 1-800-526-2269) PART NO. 3604MSUC-9 (PLENUM) OR COMPATIBLE CABLE.</p> <p>DISTANCE LIMITATION: 325'. MAX. NODES: 2. SEE "CABLE A REFERENCE DRAWING" FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
F	<p>CAT5E+ 4PPOE - CABLE FOR UPOE NETWORK WIRING CONNECTIONS: 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</p> <p>DISTANCE LIMITATION: 328'. MAX. NODES: 1 SEE "CABLE F REFERENCE DRAWING" FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
F1	<p>CAT5E+ - CABLE FOR NULINK NETWORK WIRING CONNECTIONS: 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</p> <p>DISTANCE LIMITATION: 50'. MAX. EIPS: 15 SEE "CABLE F" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
G	<p>CABLE FOR SPICEBOX TO LIGHT (LOAD) FIXTURE WIRING CONNECTIONS: 2 TO 12-CONDUCTOR, (18AWG UNSHIELDED) RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM 1-800-551-8948) LISTING NO. CL3R/CMR/FPLR (NON-PLENUM), & CL3P/CMF/FPLP (PLENUM)</p> <p>DISTANCE LIMITATION: VARIES PER LOAD. MAX. LOADS: VARIES BY WATTS SEE "CABLE G" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>

EIA 568B CRIMPING - 8 CONDUCTOR CABLE
 UPOe CONNECTIONS ON UPOe NETWORK

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

CABLE TYPE: CAT5/CAT5e/CAT6

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

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	NC

EIA 568B CRIMPING - 8 CONDUCTOR CABLE
 ETHERNET NETWORK CONNECTIONS

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

CABLE TYPE: CAT5/CAT5e/CAT6

PIN#:	WIRE COLOR:	FUNCTION:
1	ORANGE/WHITE STRIPE	TX+
2	ORANGE SOLID	TX-
3	GREEN/WHITE STRIPE	RX+
4	BLUE SOLID	NC
5	BLUE/WHITE STRIPE	NC
6	GREEN SOLID	RX-
7	BROWN/WHITE STRIPE	NC
8	BROWN SOLID	NC

Warranty

Mecho's warranty ensures its products against defects in materiPIR 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 (718) 729-2020, x2006 OR Prompt 4
E: techsupport@mechoshade.com
W: www.mechoshade.com

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