

ELECTRICAL OPERATION AND MAINTENANCE MANUALS



Electric Service, Inc.

Waste Water Treatment Plant Improvements

Wenatchee, WA.

2013

Owner: City of Wenatchee

Engineer: HDR Engineering, Inc.

General Contractor: Apollo Inc.

Electrical Contractor: Magnum Electric Service, Inc.

Specification Section 16510

Low Voltage Lighting Control System

Waste Water Treatment Plant

Wenatchee, Washington

O & M Manual



20 Murray Hill Parkway, Suite 210 East
Rutherford, NJ 07073
Office(201) 508-1570 | Fax (201) 508-1589
www.traxontechnologies.com

Contact Information

Technical Solutions Consultant

Tim Welch

Ph: (916) 716-8249

Email: tim.welch@traxontechnologies.com

Business Development Manager

Michael Linck

Ph: (347) 415-2405

Email: michael.linck@traxontechnologies.com

Section 1

Specification Sheets

traxon



Wall Washer Shield AC XB DW



XB.W2.5386100

The Wall Washer Shield AC XB DW is an IP66-rated, AC line input, lighting fixture equipped with high-brightness LEDs that generates a dynamic white light for a rich wall-washing effect. This fixture is suitable for indoor or outdoor use and equipped with a variety of beam angles and lenses.



PRODUCT SPECIFICATIONS

- **Light Source:** XB-18: 18 High intensity power LEDs
XB-36: 36 High intensity power LEDs
- **Color Temperature:** Dynamic white - 2700 K - 6500 K
- **Beam Angle:** 10°, 20°, 30°, 40°, 40°x10°
- **Luminous Flux¹:** XB-18: 943 lm (30° optics)
XB-36: 1886 lm (30° optics)
- **Efficacy²:** XB-18: 33.7 lm/W (30° optics)
XB-36: 35.6 lm/W (30° optics)
- **Cover Lens:** Clear tempered glass
- **Housing:** Aluminium die cast
- **Adjustment Options:** 180° (horizontal), 135° (vertical)
- **Size:** XB-18: 222mm (W) x 255mm (H) x 128mm (D) / 8.74" (W) x 10" (H) x 5" (D)
XB-36: 356mm (W) x 255mm (H) x 128mm (D) / 14" (W) x 10" (H) x 5" (D)
- **Weight:** XB-18: 3.3kg/7.3lbs
XB-36: 4.3kg/9.5lbs
- **Regulatory Listing & Safety Approval:** CE, cETLus
- **Operating Temperature³:** -40°C to +60°C / -40°F to +140°F
- **Storage Temperature:** -40°C to +70°C / -40°F to +158°F
- **Environment:** Outdoor (IP66), suitable for coastal environments
- **Humidity:** 85%, non-condensing

ELECTRICAL SPECIFICATIONS

- **Input Voltage:** 100-240V AC 50/60Hz
- **Power Consumption:** XB-18: 28W max.
XB-36: 53W max.
- **LED Current:** 350mA DC

SYSTEM SPECIFICATIONS

- **Power/Data Interface:** AC line; DMX512 on RJ45
- **Control:** DMX512
- **Power Supply:** Built-in

1. Typical luminous flux value. Actual flux will vary according to optics used.
2. Efficacy based on typical luminous value and maximum power consumption.
3. Startup temperature: -20°C/-4°F.

LED CHARACTERISTICS Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers "sort" LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process results always in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

As with all electronic devices, LED output degrades over time – a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degrade is a complicate function of many factors such as operating efficiency, duration of continuous operation, and more significantly, environmental conditions (ambient temperature for example). If allowed working under optimal operating temperature range and with good ventilation, LED devices enjoy long service lives over conventional light sources. When using/installing LED devices, care should be taken to ensure that the devices will operate within the operating conditions specified in respective product literature.

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10/13 V1.4



SOURCE SPECIFICATIONS

Source: 36 LEDs, 350mA

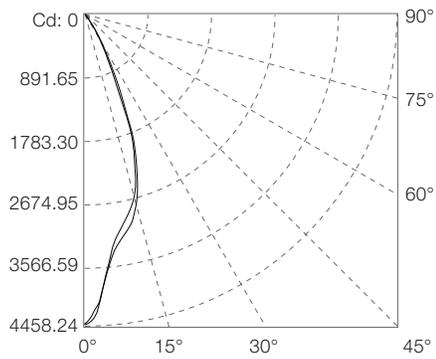
Optics: 30°

Cover Lens: Clear glass cover

CCT: 2700 K - 6500 K - Dynamic white

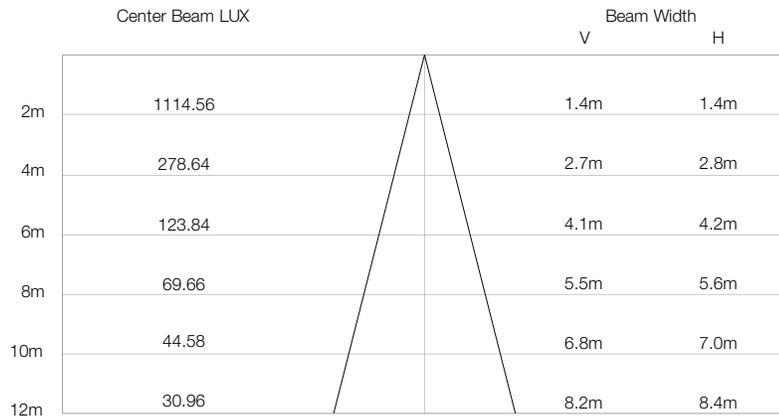
CANDELA DISTRIBUTION

LIGHT OUTPUT



Color	Luminous Flux (lm)
Dynamic White	1885.87

ILLUMINANCE AT A DISTANCE



For fc divide by 10.7

Vert. Spread: 37.7°

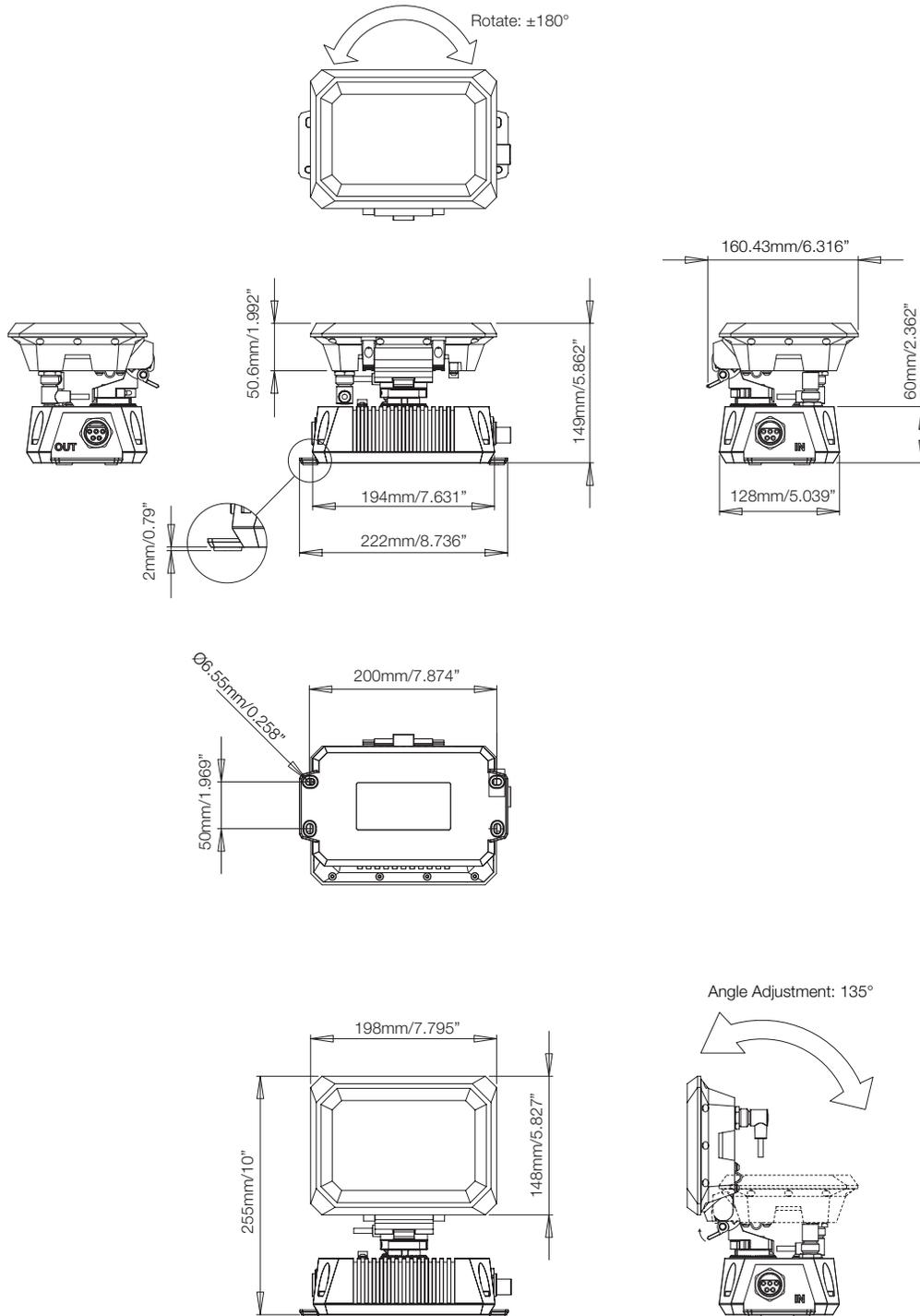
Horiz. Spread: 38.8°

For feet multiply by 3.28



TECHNICAL DRAWING

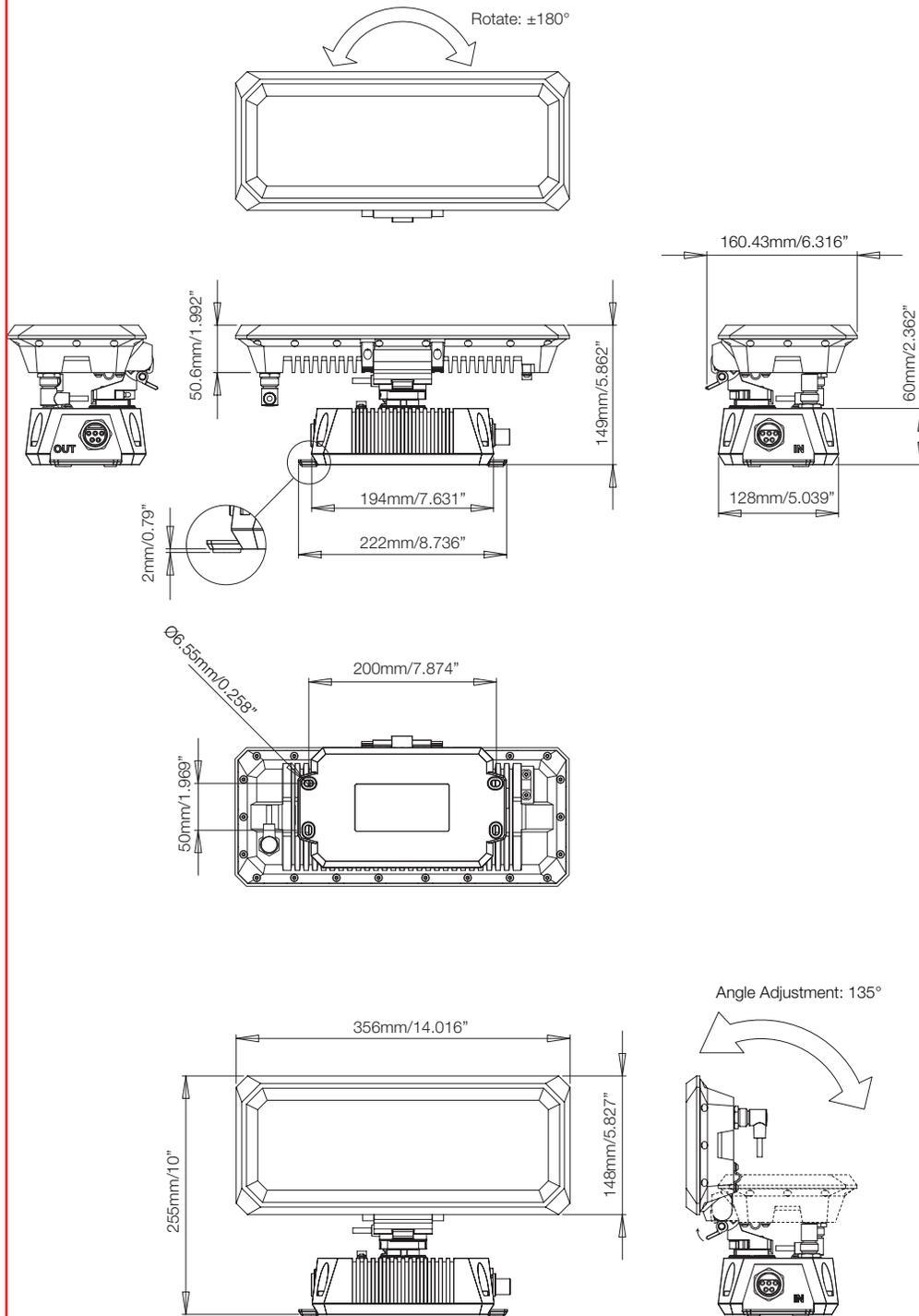
Wall Washer Shield AC XB-18





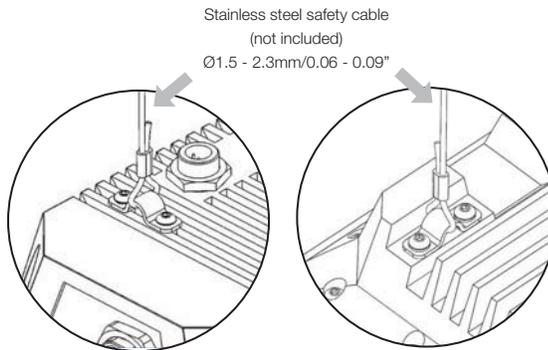
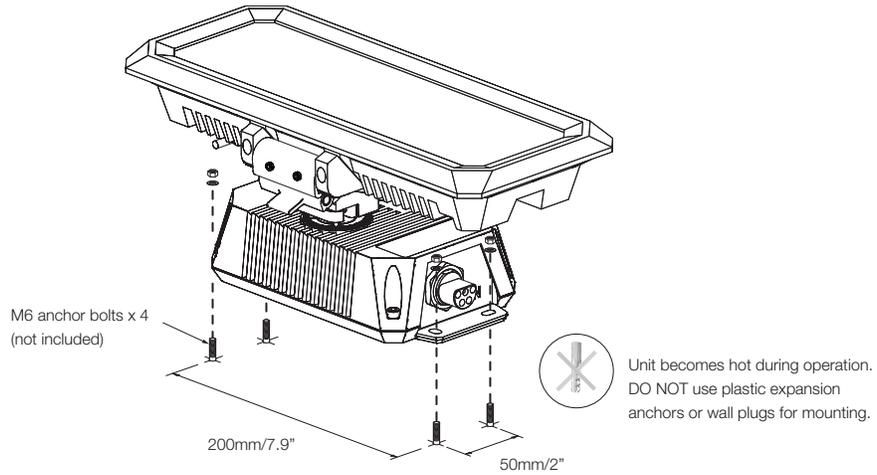
TECHNICAL DRAWING

Wall Washer Shield AC XB-36





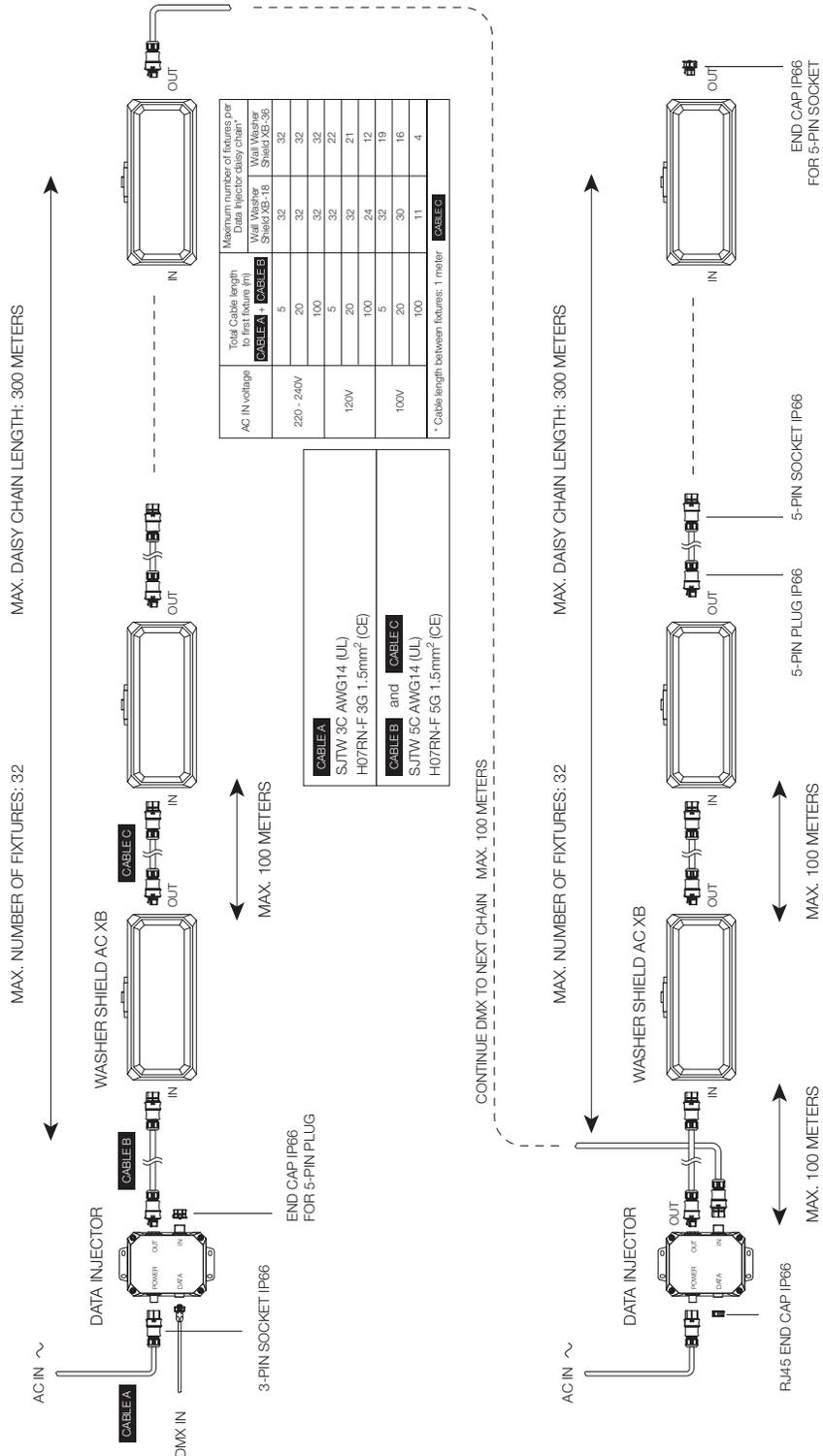
MOUNTING



Attention: Glass top cover – Please take care when handling unit to avoid breakage and injury.



SYSTEM DIAGRAM





FIXTURES

Model No.	Description	Item Code
XB.W1.538A100	Wall Washer Shield AC XB-18 DW 10deg	AA562460055
XB.W1.538B100	Wall Washer Shield AC XB-18 DW 20deg	AA562470055
XB.W1.538C100	Wall Washer Shield AC XB-18 DW 30deg	AA562480055
XB.W1.538D100	Wall Washer Shield AC XB-18 DW 40deg	AA562500055
XB.W1.538E100	Wall Washer Shield AC XB-18 DW 40x10deg	AA562490055
XB.W2.538A100	Wall Washer Shield AC XB-36 DW 10deg	AA563070055
XB.W2.538B100	Wall Washer Shield AC XB-36 DW 20deg	AA563080055
XB.W2.538C100	Wall Washer Shield AC XB-36 DW 30deg	AA563090055
XB.W2.538D100	Wall Washer Shield AC XB-36 DW 40deg	AA563110055
XB.W2.538E100	Wall Washer Shield AC XB-36 DW 40x10deg	AA563100055

STANDARD ACCESSORIES (included in delivery)

Model No.	Description	Item Code
N/A	TX CONNECT XB CMX Interconnection Cable, 300mm/11.8" (Base to head connection cable)	N/A

TX CONTROL

Model No.	Description	Item Code
EN.BU.0000001	Butler S2	AA624080072
SC.JD.5080000	Light-Drive Jog DW (Black)	AA557490255
SC.JD.5080100	Light-Drive Jog DW (White)	A6333430155

TX CONNECT

Model No.	Description	Item Code
XB.AC.2302000	5-pin field Installable AC Connector Plug IP66	AA438580235
XB.AC.2303000	5-pin field Installable AC Connector Socket IP66	AA438570235
XB.AC.2304000	5-pin Connector Socket End Cap IP66	AA508870335
XB.AC.2308000	5-pin Connector Plug End Cap	AA508890135
DE.AC.0100000	RJ45 Male Connector IP67 Housing	AA556100155
XB.AC.2400000	Standalone base for Wall Washer Unit	AA612850055
XE.ID.9999910	AC XB Interconnection Cable, 5-wire, CE (100m/328ft reel)	AA556610055
XE.ID.9999911	AC XB Interconnection Cable, 5-wire, UL (100m/328ft reel)	AA569430155

TX POWER

Model No.	Description	Item Code
XB.AC.2300000	XB Shield AC Data Injector	AA438600055
XE.IF.9999910	AC XB Power Cable, 3-wire, CE (100m/328ft reel)	AA556620055
XE.IF.9999911	AC XB Power Cable, 3-wire, UL (100m/328ft reel)	AA556630155
XB.AC.2306000	3-pin Field Installable Connector Socket	AA508880235

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Wall Washer Shield AC XB RGB



XB.W2.5311100

The Wall Washer Shield AC XB RGB is an IP66-rated, AC line input, lighting fixture equipped with high-brightness LEDs that generates single color or color changing light for a rich wall-washing effect. This fixture is suitable for indoor or outdoor use and equipped with a host of customization options including LED type, LED color, beam angles, and lenses.



PRODUCT SPECIFICATIONS

- **Light Source:** XB-18: 18 High intensity power LEDs
XB-36: 36 High intensity power LEDs
- **Color Range:** 16.7 million additive RGB colors
- **Color Resolution:** 3 x 8-bit continuously variable intensity output range
- **Color Options:** RGB, red, green, blue
- **Beam Angle:** 10°, 20°, 30°, 40°, 40°x10°
- **Luminous Flux¹:** XB-18: 573 lm (30° optics)
XB-36: 1114 lm (30° optics)
- **Efficacy²:** XB-18: 20.5 lm/W (30° optics)
XB-36: 21 lm/W (30° optics)
- **Cover Lens:** Clear tempered glass
- **Housing:** Aluminium die cast
- **Adjustment Options:** 180° (horizontal), 135° (vertical)
- **Size:** XB-18: 222mm (W) x 255mm (H) x 128mm (D) / 8.74" (W) x 10" (H) x 5" (D)
XB-36: 356mm (W) x 255mm (H) x 128mm (D) / 14" (W) x 10" (H) x 5" (D)
- **Weight:** XB-18: 3.3kg/7.3lbs
XB-36: 4.3kg/9.5lbs
- **Regulatory Listing & Safety Approval:** CE, cETLus
- **Operating Temperature³:** -40°C to +60°C / -40°F to +140°F
- **Storage Temperature:** -40°C to +70°C / -40°F to +158°F
- **Environment:** Outdoor (IP66), suitable for coastal environments
- **Humidity:** 85%, non-condensing

ELECTRICAL SPECIFICATIONS

- **Input Voltage:** 100-240V AC 50/60Hz
- **Power Consumption:** XB-18: 28W max.
XB-36: 53W max.
- **LED Current:** 350mA DC

SYSTEM SPECIFICATIONS

- **Power/Data Interface:** AC line; DMX512 on RJ45
- **Control:** DMX512
- **Power Supply:** Built-in

1. Typical luminous flux value. Actual flux will vary according to optics used.
2. Efficacy based on typical luminous value and maximum power consumption.
3. Startup temperature: -20°C/-4°F.

LED CHARACTERISTICS Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers "sort" LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process results always in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

As with all electronic devices, LED output degrades over time – a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degrade is a complicate function of many factors such as operating efficiency, duration of continuous operation, and more significantly, environmental conditions (ambient temperature for example). If allowed working under optimal operating temperature range and with good ventilation, LED devices enjoy long service lives over conventional light sources. When using/installing LED devices, care should be taken to ensure that the devices will operate within the operating conditions specified in respective product literature.

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SOURCE SPECIFICATIONS

Source: 36 LEDs RGB (12xR, 12xG, 12xB)

Optics: 30°

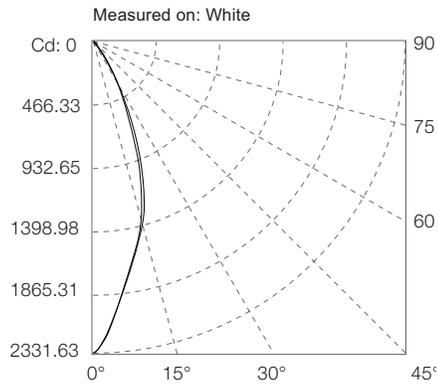
Cover Lens: Clear glass cover

Distribution: Asymmetric direct illumination

CCT: N/A

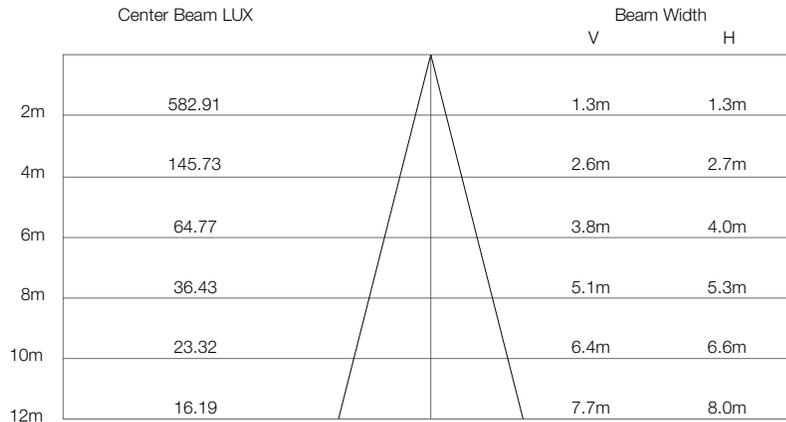
CANDELA DISTRIBUTION

LIGHT OUTPUT



Color	Luminous Flux (lm)
White	1113.8
Red	316.16
Green	722.73
Blue	111.07

ILLUMINANCE AT A DISTANCE



For fc divide by 10.7

Vert. Spread: 35.6°

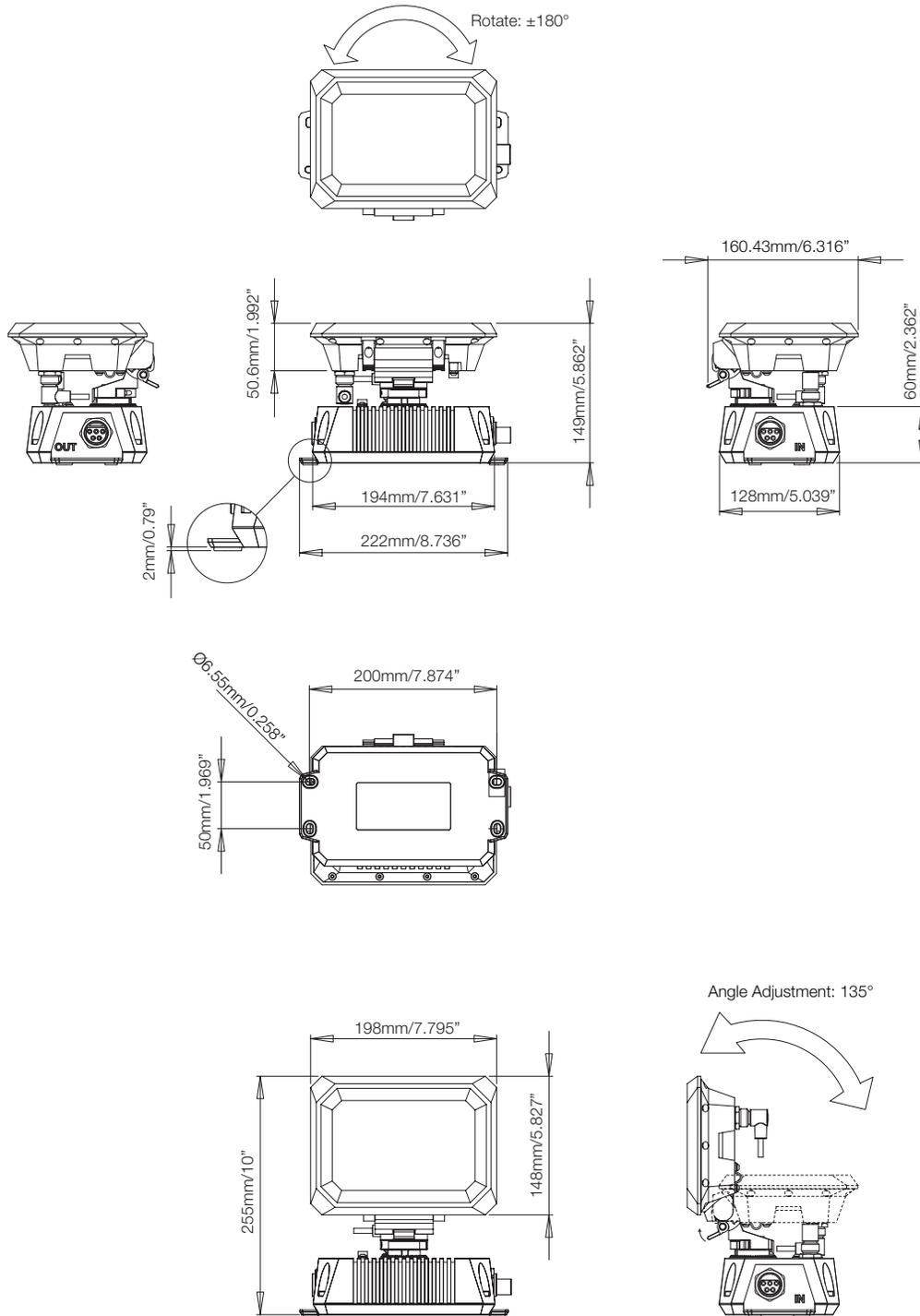
Horiz. Spread: 36.7°

For feet multiply by 3.28



TECHNICAL DRAWING

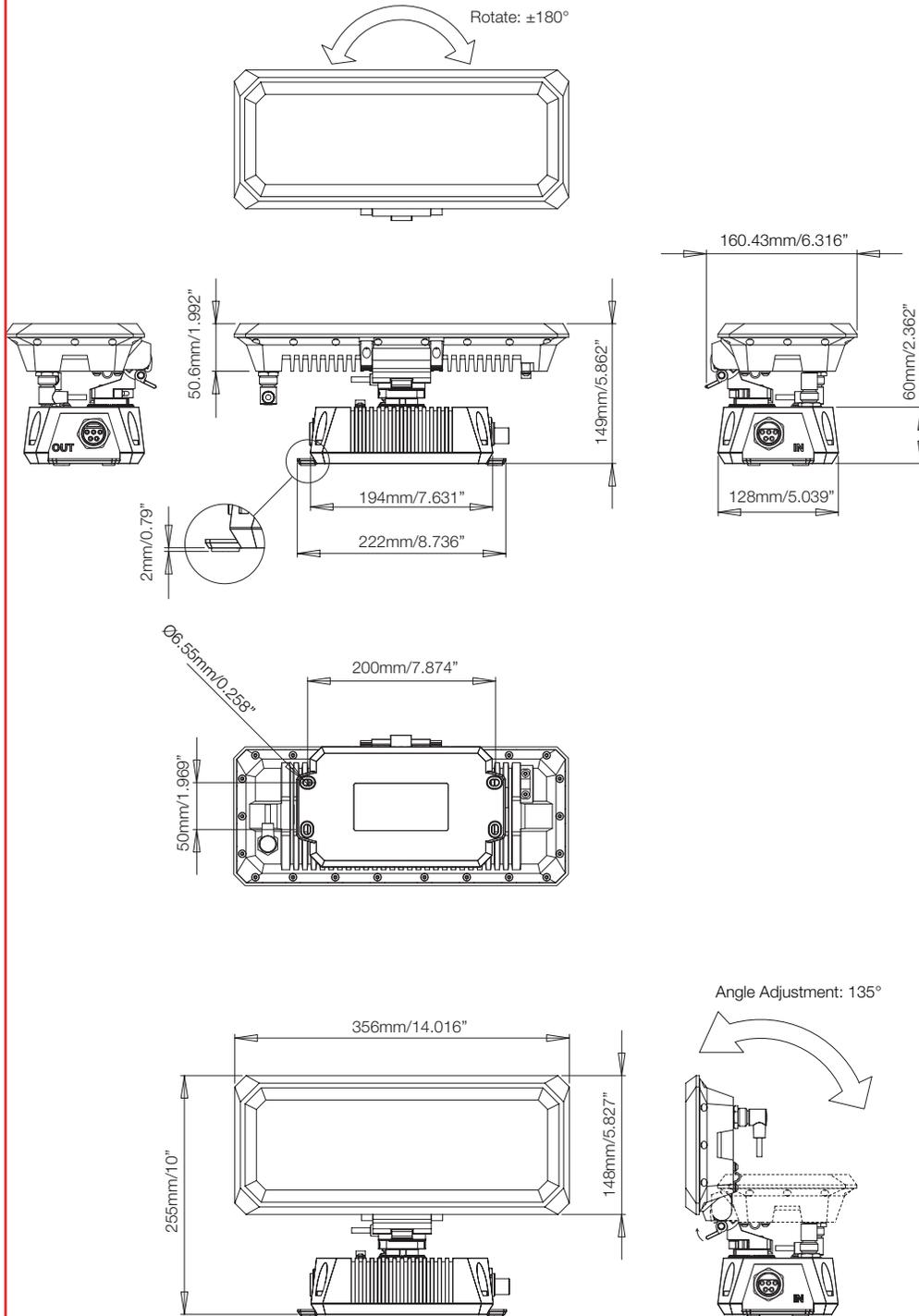
Wall Washer Shield AC XB-18





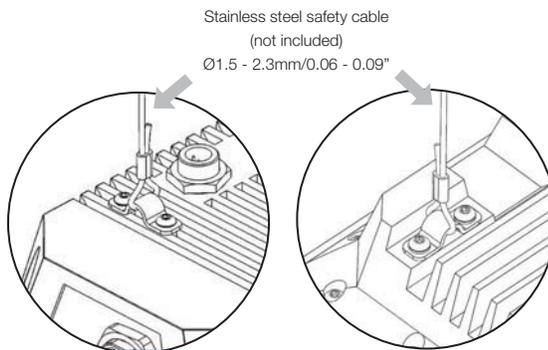
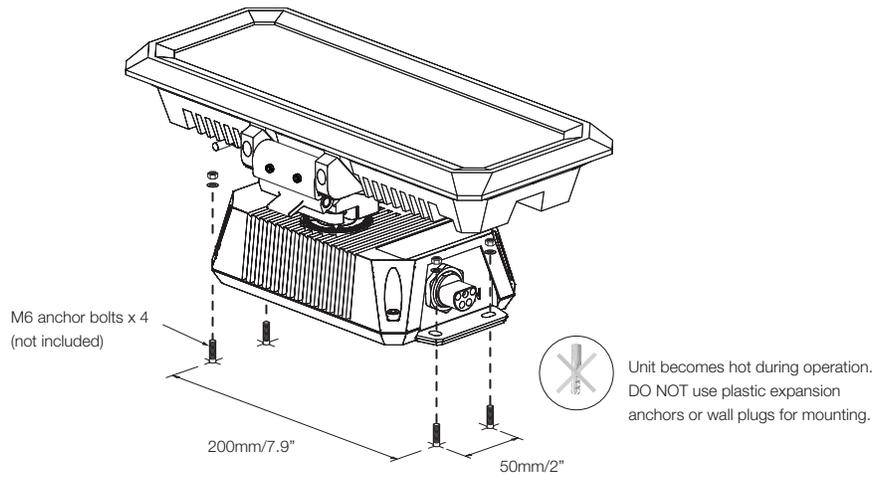
TECHNICAL DRAWING

Wall Washer Shield AC XB-36





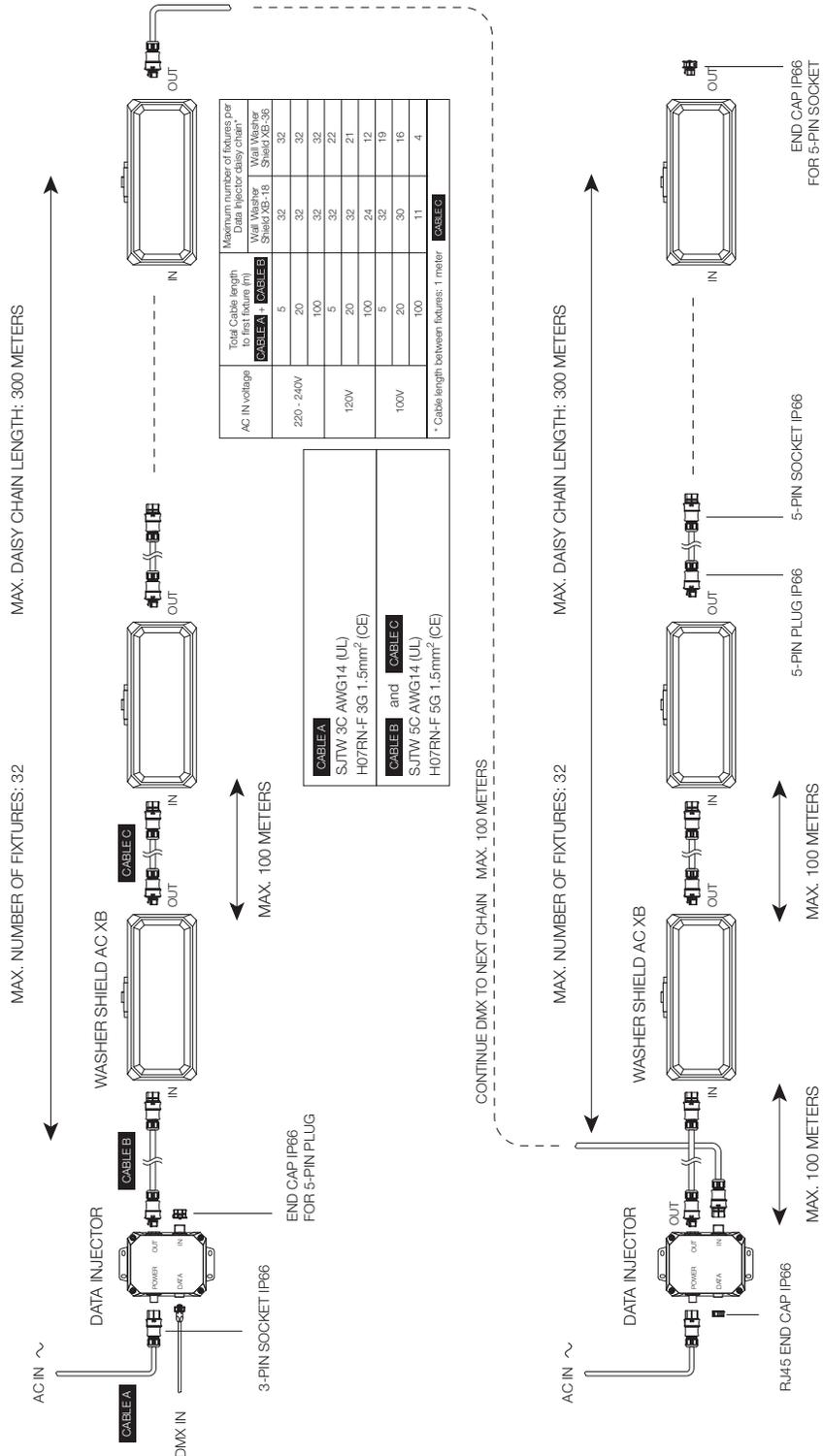
MOUNTING



Attention: Glass top cover – Please take care when handling unit to avoid breakage and injury.



SYSTEM DIAGRAM





FIXTURES

Model No.	Description	Item Code
XB.W1.531A100	Wall Washer Shield AC XB-18 RGB 10deg	AA562300055
XB.W1.531B100	Wall Washer Shield AC XB-18 RGB 20deg	AA562310055
XB.W1.531C100	Wall Washer Shield AC XB-18 RGB 30deg	AA562320055
XB.W1.531D100	Wall Washer Shield AC XB-18 RGB 40deg	AA562350055
XB.W1.531E100	Wall Washer Shield AC XB-18 RGB 40x10deg	AA562330055
XB.W2.531A100	Wall Washer Shield AC XB-36 RGB 10deg	AA562900055
XB.W2.531B100	Wall Washer Shield AC XB-36 RGB 20deg	AA562910055
XB.W2.531C100	Wall Washer Shield AC XB-36 RGB 30deg	AA562920155
XB.W2.531D100	Wall Washer Shield AC XB-36 RGB 40deg	AA562950155
XB.W2.531E100	Wall Washer Shield AC XB-36 RGB 40x10deg	AA562930155

STANDARD ACCESSORIES (included in delivery)

Model No.	Description	Item Code
N/A	TX CONNECT XB CMX Interconnection Cable, 300mm/11.8" (Base to head connection cable)	N/A

TX CONTROL

Model No.	Description	Item Code
EN.BU.0000001	Butler S2	AA624080072
SC.CD.5000000	Light-Drive RGB (Black)	A6331730155
SC.CD.5000100	Light-Drive RGB (White)	A6332550155
SC.JD.5010000	Light-Drive Jog RGB (Black)	A63327E0155

TX CONNECT

Model No.	Description	Item Code
XB.AC.2302000	5-pin field Installable AC Connector Plug IP66	AA438580235
XB.AC.2303000	5-pin field Installable AC Connector Socket IP66	AA438570235
XB.AC.2304000	5-pin Connector Socket End Cap IP66	AA508870335
XB.AC.2308000	5-pin Connector Plug End Cap	AA508890135
DE.AC.0100000	RJ45 Male Connector IP67 Housing	AA556100155
XB.AC.2400000	Standalone base for Wall Washer Unit	AA612850055
XE.ID.9999910	AC XB Interconnection Cable, 5-wire, CE (100m/328ft reel)	AA556610055
XE.ID.9999911	AC XB Interconnection Cable, 5-wire, UL (100m/328ft reel)	AA569430155

TX POWER

Model No.	Description	Item Code
XB.AC.2300000	XB Shield AC Data Injector	AA438600055
XE.IF.9999910	AC XB Power Cable, 3-wire, CE (100m/328ft reel)	AA556620055
XE.IF.9999911	AC XB Power Cable, 3-wire, UL (100m/328ft reel)	AA556630155
XB.AC.2306000	3-pin Field Installable Connector Socket	AA508880235

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Wall Washer Shield AC XB WW



XB.W1.5373100

The Wall Washer Shield AC XB WW is an IP66-rated, AC line input, lighting fixture equipped with high-brightness LEDs that generates a warm white light for a rich wall-washing effect. This fixture is suitable for indoor or outdoor use and equipped with a variety of beam angles and lenses.



PRODUCT SPECIFICATIONS

- **Light Source:** XB-18: 18 High intensity power LEDs
XB-36: 36 High intensity power LEDs
- **Color Temperature:** Warm white - 2700 K
- **Beam Angle:** 10°, 20°, 30°, 40°, 40°x10°
- **Luminous Flux¹:** XB-18: 832 lm (30° optics)
XB-36: 1664 lm (30° optics)
- **Efficacy²:** XB-18: 29.7 lm/W (30° optics)
XB-36: 31.4 lm/W (30° optics)
- **Cover Lens:** Clear tempered glass
- **Housing:** Aluminium die cast
- **Adjustment Options:** 180° (horizontal), 135° (vertical)
- **Size:** XB-18: 222mm (W) x 255mm (H) x 128mm (D) / 8.74" (W) x 10" (H) x 5" (D)
XB-36: 356mm (W) x 255mm (H) x 128mm (D) / 14" (W) x 10" (H) x 5" (D)
- **Weight:** XB-18: 3.3kg/7.3lbs
XB-36: 4.3kg/9.5lbs
- **Regulatory Listing & Safety Approval:** CE, cETLus
- **Operating Temperature³:** -40°C to +60°C / -40°F to +140°F
- **Storage Temperature:** -40°C to +70°C / -40°F to +158°F
- **Environment:** Outdoor (IP66), suitable for coastal environments
- **Humidity:** 85%, non-condensing

ELECTRICAL SPECIFICATIONS

- **Input Voltage:** 100-240V AC 50/60Hz
- **Power Consumption:** XB-18: 28W max
XB-36: 53W max.
- **LED Current:** 350mA DC

SYSTEM SPECIFICATIONS

- **Power/Data Interface:** AC line; DMX512 on RJ45
- **Control:** DMX512
- **Power Supply:** Built-in

1. Typical luminous flux value. Actual flux will vary according to optics used.
2. Efficacy based on typical luminous value and maximum power consumption.
3. Startup temperature: -20°C/-4°F.

LED CHARACTERISTICS Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers "sort" LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process results always in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

As with all electronic devices, LED output degrades over time – a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degrade is a complicate function of many factors such as operating efficiency, duration of continuous operation, and more significantly, environmental conditions (ambient temperature for example). If allowed working under optimal operating temperature range and with good ventilation, LED devices enjoy long service lives over conventional light sources. When using/installing LED devices, care should be taken to ensure that the devices will operate within the operating conditions specified in respective product literature.



SOURCE SPECIFICATIONS

Source: 36 LEDs, 350mA

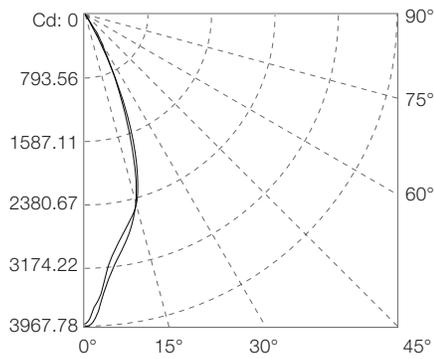
Optics: 30°

Cover Lens: Clear glass cover

CCT: 2700 K - Warm white

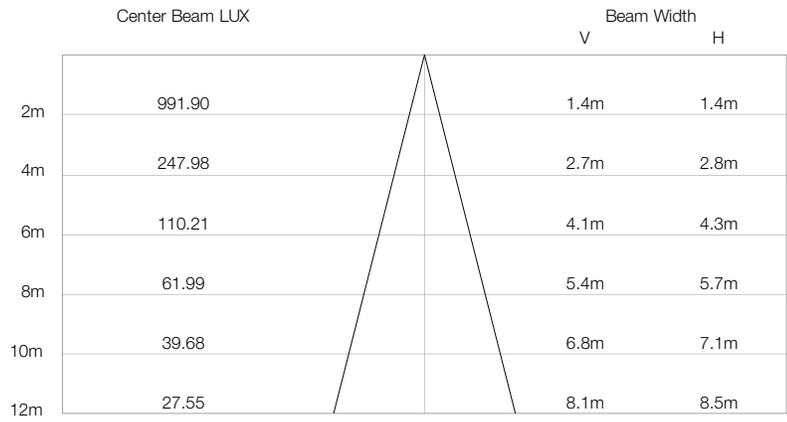
CANDELA DISTRIBUTION

LIGHT OUTPUT



Color	Luminous Flux (lm)
Warm White	1664.22

ILLUMINANCE AT A DISTANCE



For fc divide by 10.7

Vert. Spread: 37.5°

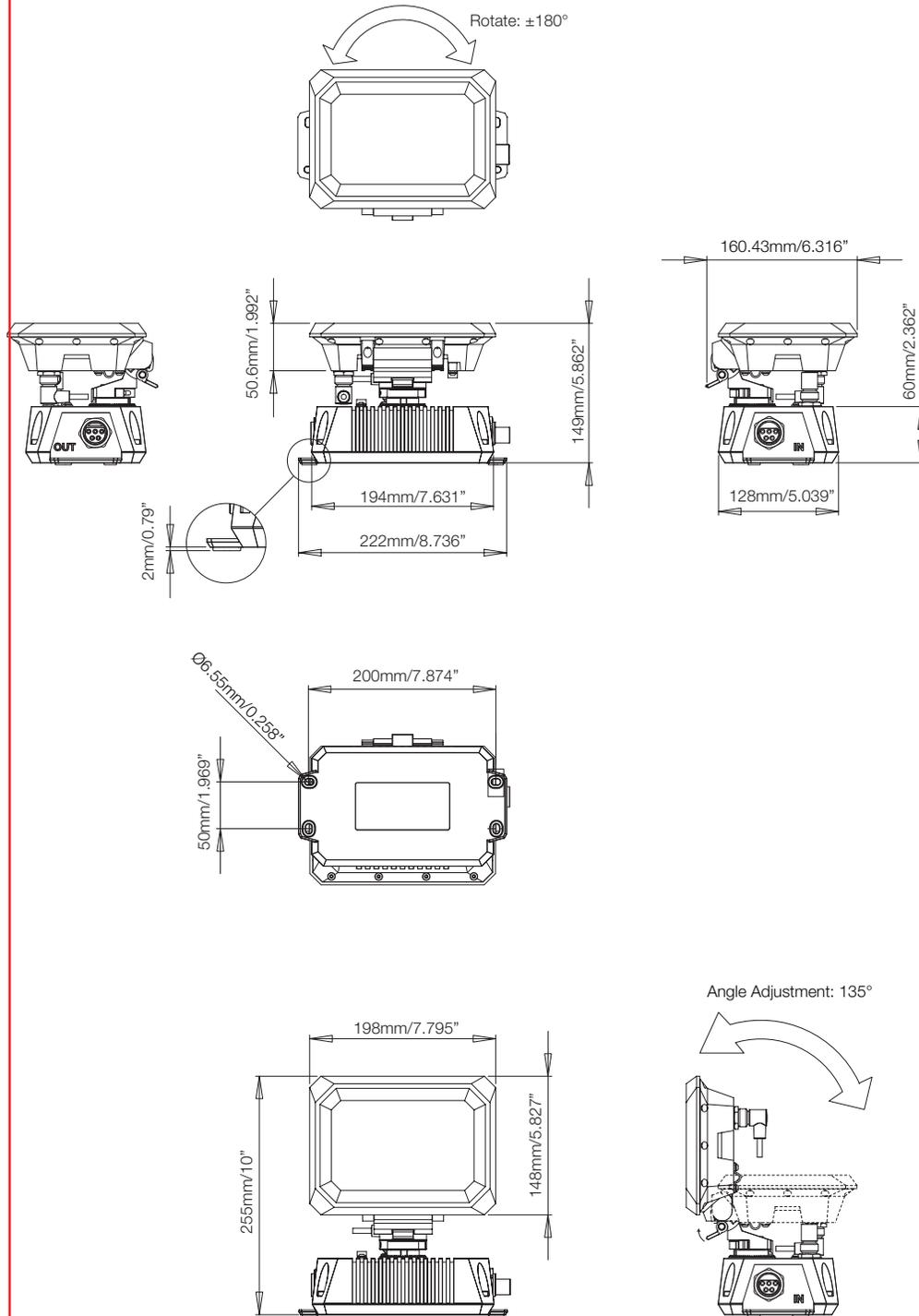
Horiz. Spread: 39.1°

For feet multiply by 3.28



TECHNICAL DRAWING

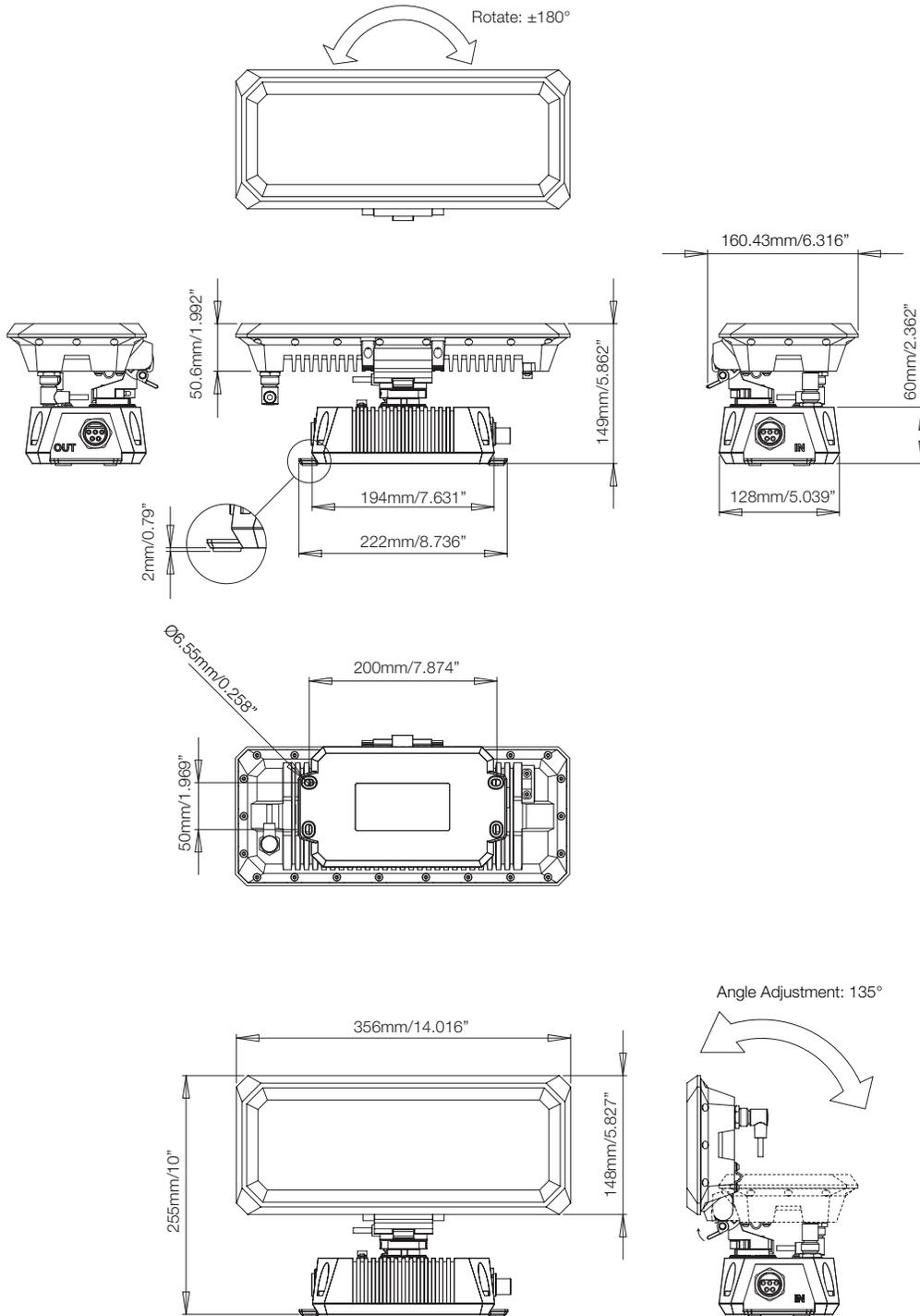
Wall Washer Shield AC XB-18





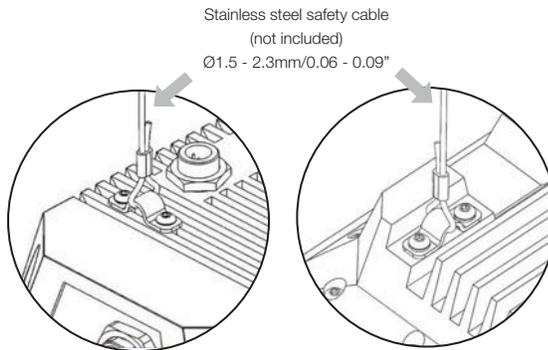
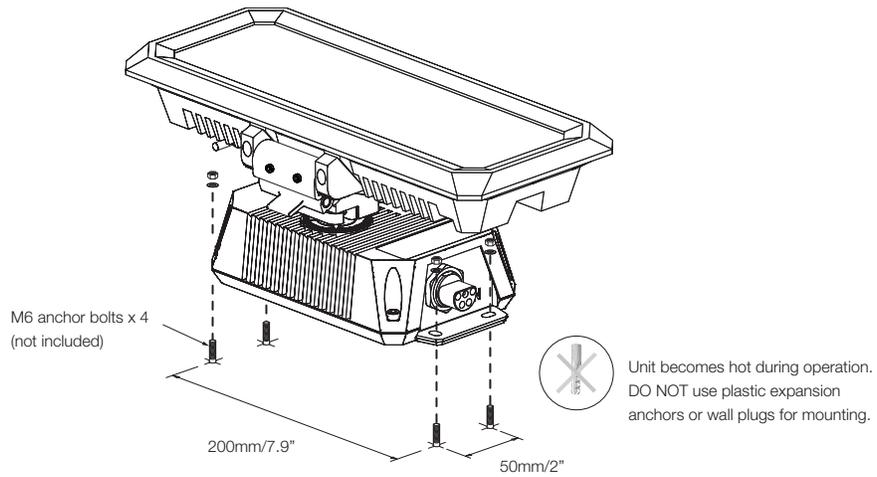
TECHNICAL DRAWING

Wall Washer Shield AC XB-36





MOUNTING



Attention: Glass top cover – Please take care when handling unit to avoid breakage and injury.



FIXTURES

Model No.	Description	Item Code
XB.W1.537A100	Wall Washer Shield AC XB-18 WW 10deg	AA562410055
XB.W1.537B100	Wall Washer Shield AC XB-18 WW 20deg	AA562420055
XB.W1.537C100	Wall Washer Shield AC XB-18 WW 30deg	AA562430055
XB.W1.537D100	Wall Washer Shield AC XB-18 WW 40deg	AA562450055
XB.W1.537E100	Wall Washer Shield AC XB-18 WW 40x10deg	AA562440055
XB.W2.537A100	Wall Washer Shield AC XB-36 WW 10deg	AA563020055
XB.W2.537B100	Wall Washer Shield AC XB-36 WW 20deg	AA563030055
XB.W2.537C100	Wall Washer Shield AC XB-36 WW 30deg	AA563040055
XB.W2.537D100	Wall Washer Shield AC XB-36 WW 40deg	AA563060055
XB.W2.537E100	Wall Washer Shield AC XB-36 WW 40x10deg	AA563050055

STANDARD ACCESSORIES (included in delivery)

Model No.	Description	Item Code
N/A	TX CONNECT XB CMX Interconnection Cable, 300mm/11.8" (Base to head connection cable)	N/A

TX CONTROL

Model No.	Description	Item Code
EN.BU.0000001	Butler S2	AA624080072
SC.JD.5080000	Light-Drive Jog DW (Black)	AA557490255
SC.JD.5080100	Light-Drive Jog DW (White)	A6333430155

TX CONNECT

Model No.	Description	Item Code
XB.AC.2302000	5-pin field Installable AC Connector Plug IP66	AA438580235
XB.AC.2303000	5-pin field Installable AC Connector Socket IP66	AA438570235
XB.AC.2304000	5-pin Connector Socket End Cap IP66	AA508870335
XB.AC.2308000	5-pin Connector Plug End Cap	AA508890135
DE.AC.0100000	RJ45 Male Connector IP67 Housing	AA556100155
XB.AC.2400000	Standalone base for Wall Washer Unit	AA612850055
XE.ID.9999910	AC XB Interconnection Cable, 5-wire, CE (100m/328ft reel)	AA556610055
XE.ID.9999911	AC XB Interconnection Cable, 5-wire, UL (100m/328ft reel)	AA569430155

TX POWER

Model No.	Description	Item Code
XB.AC.2300000	XB Shield AC Data Injector	AA438600055
XE.IF.9999910	AC XB Power Cable, 3-wire, CE (100m/328ft reel)	AA556620055
XE.IF.9999911	AC XB Power Cable, 3-wire, UL (100m/328ft reel)	AA556630155
XB.AC.2306000	3-pin Field Installable Connector Socket	AA508880235

traxon



XB Shield AC Data Injector



The XB Shield AC Data Injector is used in conjunction with Traxon's Shield AC XB high brightness fixtures, allowing simple connections of an AC daisy-chain system with DMX512 control.



IP66

FIXTURES

Model No.	Description	Item Code
XB.AC.2300000	XB Shield AC Data Injector	AA438600055

PRODUCT SPECIFICATIONS

- **Input:** AC line (90-264V AC 50/60Hz); DMX512; AC line+DMX512
- **Output:** AC line+DMX512
- **Power Consumption:** 3W max.
- **Current Pass-Through:** 15A AC max. on AC connectors
- **Power-back on DATA port:** 12V, 500mA max.
- **Housing:** Aluminium die cast
- **Adjustment Options:** –
- **Size:** 170mm (L) x 60mm (W) x 138mm (H) / 6.69" (L) x 2.36" (W) x 5.43" (H)
- **Weight:** 1.3kg/2.9lbs
- **Regulatory Listing & Safety Approval:** CE, cETLus
- **Operating Temperature¹:** –40°C to +60°C / –40°F to +140°F
- **Storage Temperature:** –40°C to +70°C / –40°F to +158°F
- **Environment:** Outdoor (IP66)
- **Humidity:** 85%, non-condensing

CONNECTOR SPECIFICATIONS

- **POWER:** 3-pin male
- **DATA:** RJ45 female
- **IN:** 5-pin male
- **OUT:** 5-pin female

1. Startup temperature: –20°C/–4°F.

LED CHARACTERISTICS Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers "sort" LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process results always in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

As with all electronic devices, LED output degrades over time – a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degrade is a complicate function of many factors such as operating efficiency, duration of continuous operation, and more significantly, environmental conditions (ambient temperature for example). If allowed working under optimal operating temperature range and with good ventilation, LED devices enjoy long service lives over conventional light sources. When using/installing LED devices, care should be taken to ensure that the devices will operate within the operating conditions specified in respective product literature.

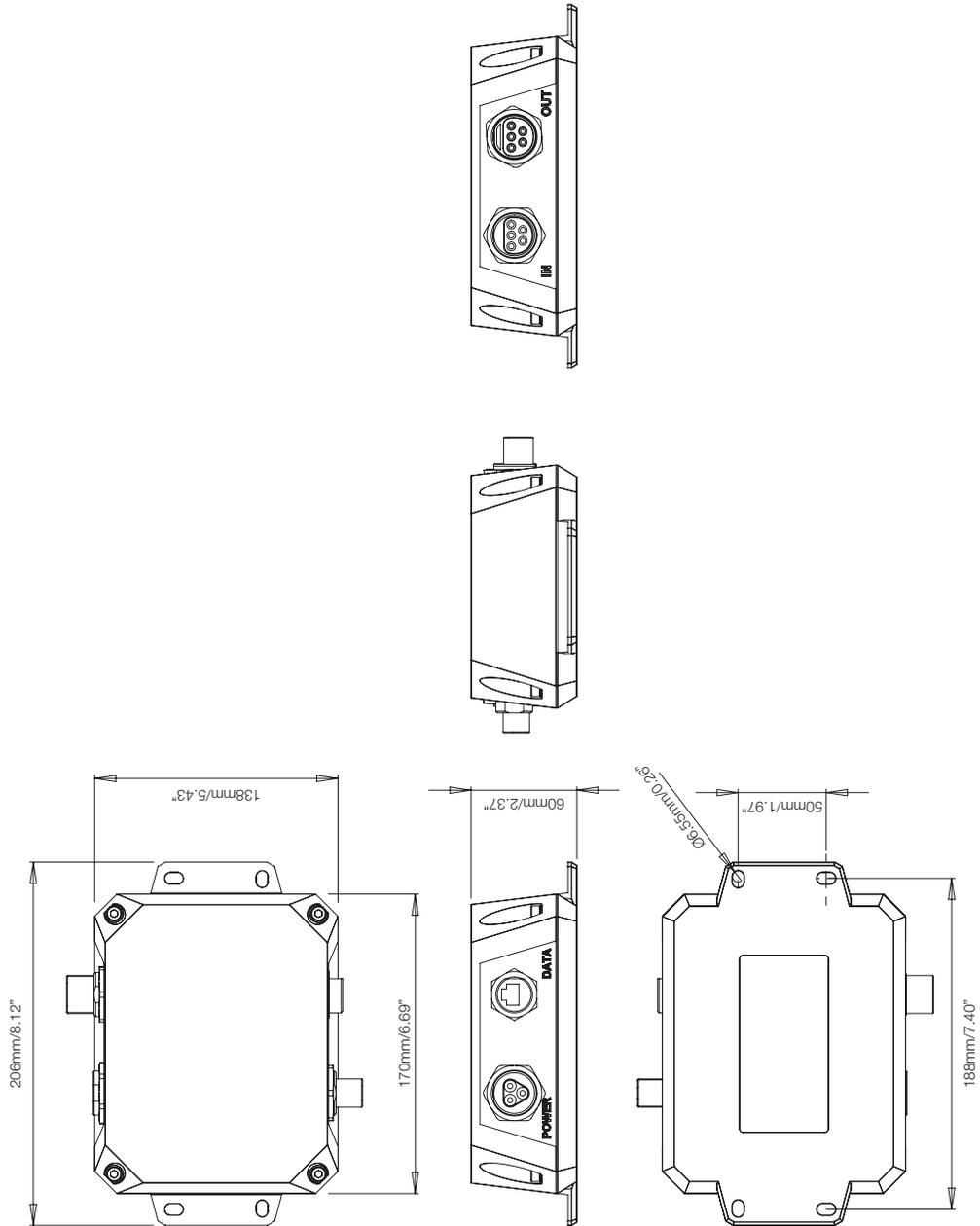
traxon



XB Shield AC Data Injector

Dimensions

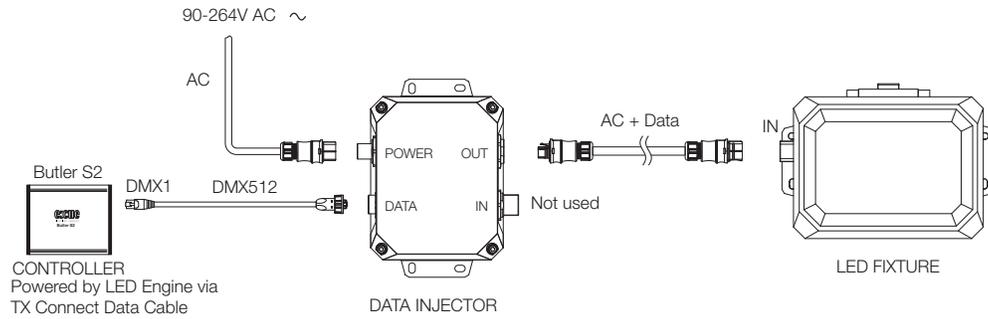
TECHNICAL DRAWING



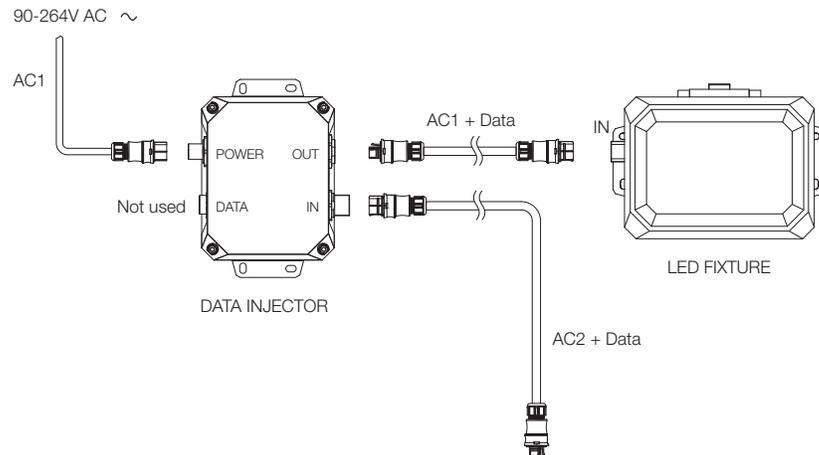


SYSTEM DIAGRAM

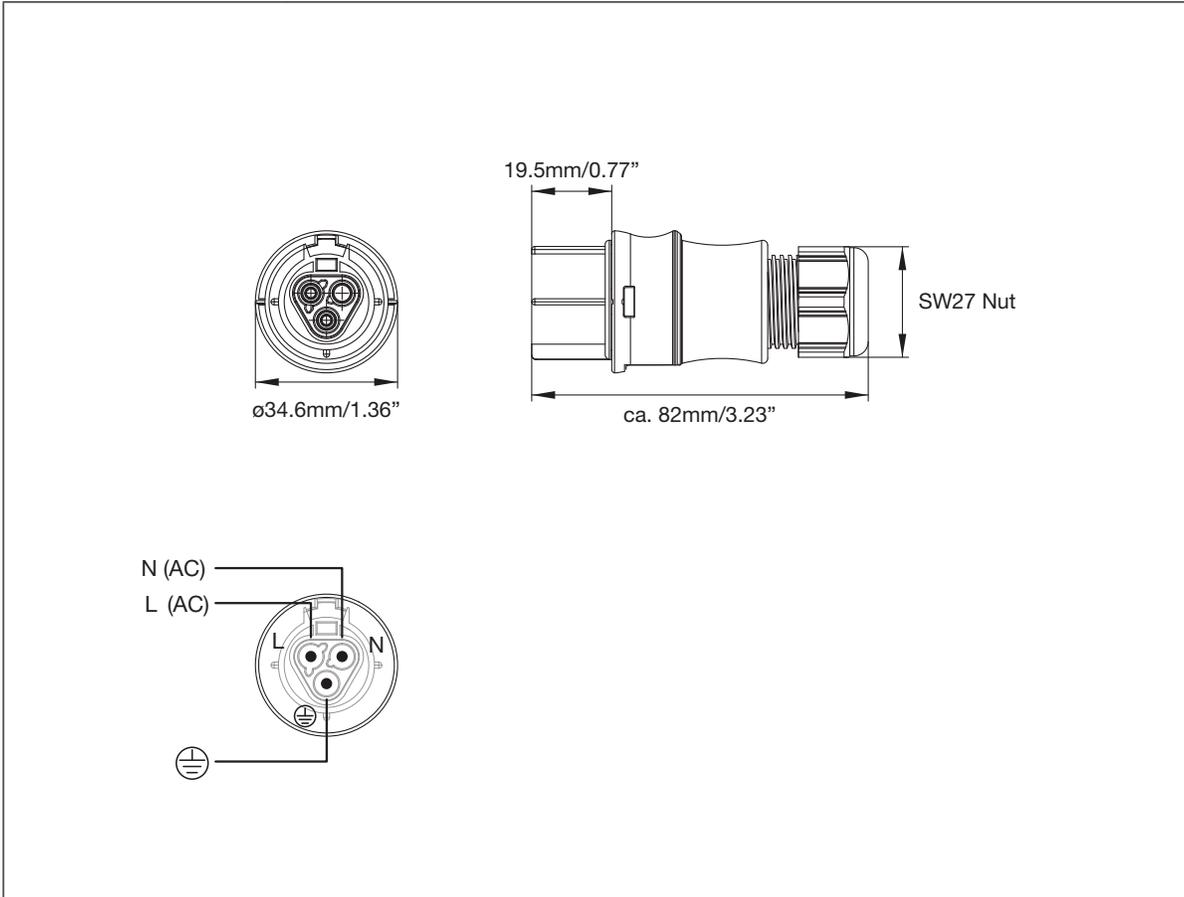
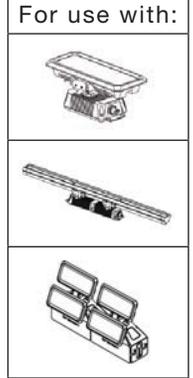
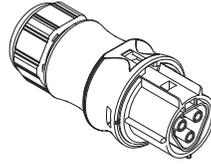
WIRING CONFIGURATION 1



WIRING CONFIGURATION 2

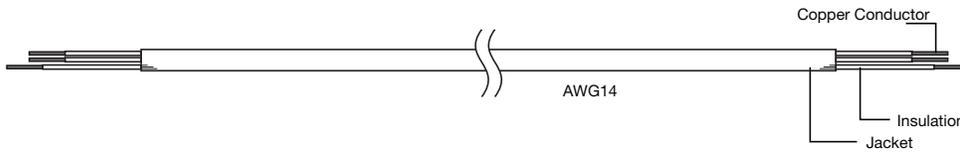
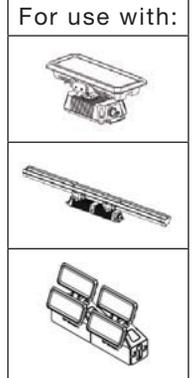
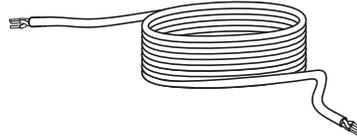


XB.AC.2306000
3-wire Field Installable AC Connector
(Female)



Type:	IP66 rated cable connector (female)
Use:	Attach to TX CONNECT XB Interconnection Cable (Open wire) and connects to POWER of XB Shield AC Data Injector
Indoor/Outdoor:	Outdoor (IP66)

XE.IF.999991x
TX Connect XB Power Cable
3-wire



	Wire Connection		Wieland AC Socket
	EU	US	
Ground	Green/Yellow	Green	Ground
Live (AC)	Brown	Black	1
Neutral (AC)	Blue	White	2

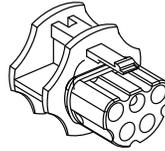
NOTES:

	EU		US	
	Conductor	Insulation (Wall Thickness)	Jacket	Conductor
Conductor	Copper	1.78mm/0.07"	Copper	3.43mm/0.14"
Insulation (Wall Thickness)	Rubber	0.9mm/0.04"	PVC	0.76mm/0.03"
Jacket	Rubber	12.2mm/0.48"	PVC	9.6mm/0.38"

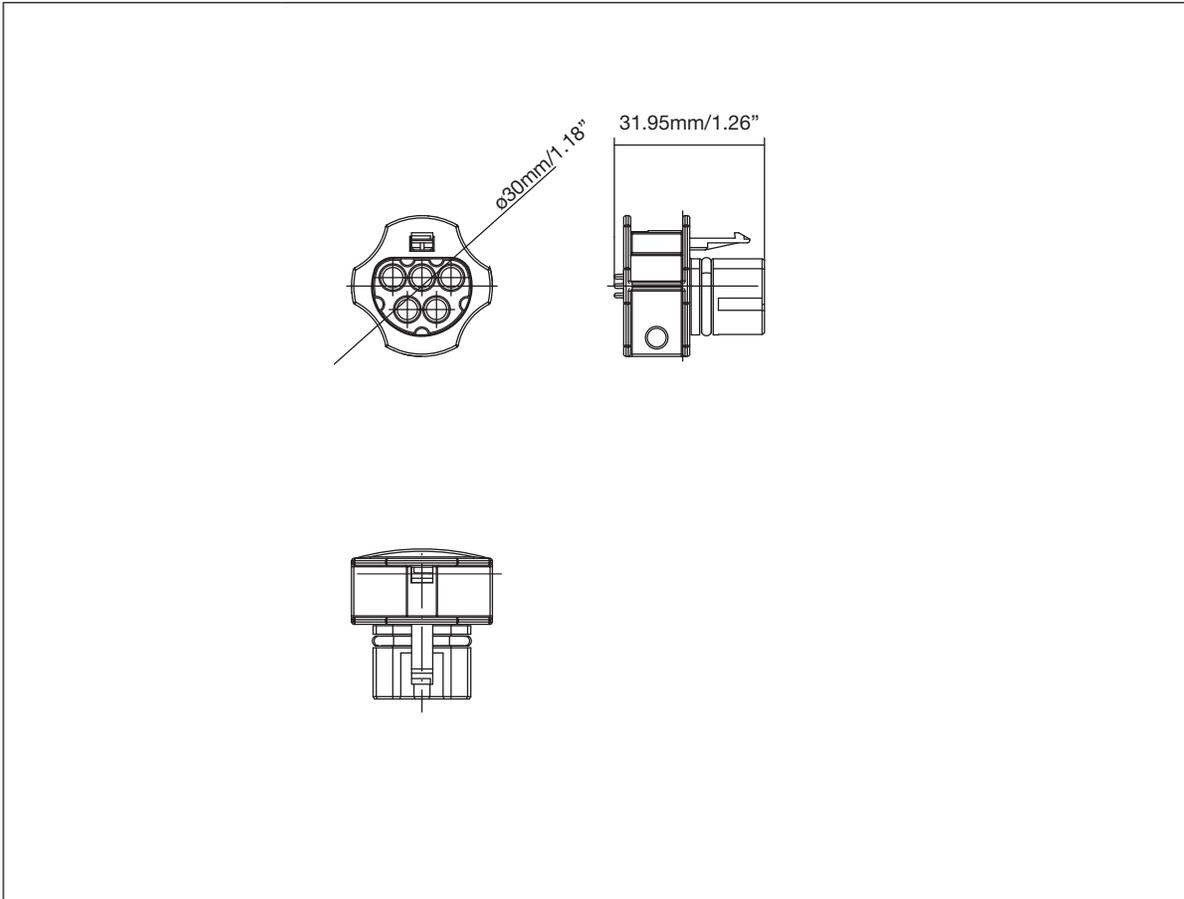
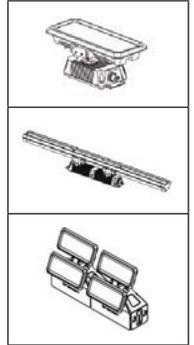
- Jacket - Oil, water, UV resistant

Type:	IP66 rated cable
Use:	Attach to 3-wire Field Installable AC Connectors
Indoor/Outdoor:	Outdoor (IP66)
Part Numbers:	XE.IF.9999910 – (EU) 100m/328ft XE.IF.9999911 – (US) 100m/328ft

XB.AC.2304000
XB Shield AC 5-wire Connector End Cap
(Female)

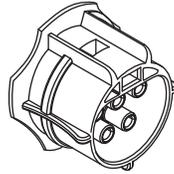


For use with:

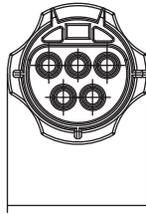
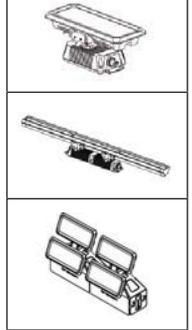


Type:	IP66 rated connector end cap (male)
Use:	Connect to Shield AC Power/Data OUT connector of final unit in daisy chain
Indoor/Outdoor	Outdoor (IP66)

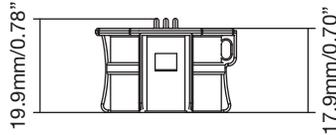
XB.AC.2308000
XB Shield AC 5-wire Connector End Cap
(Male)



For use with:



ø30mm/1.18"

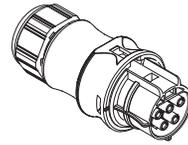


19.9mm/0.78"

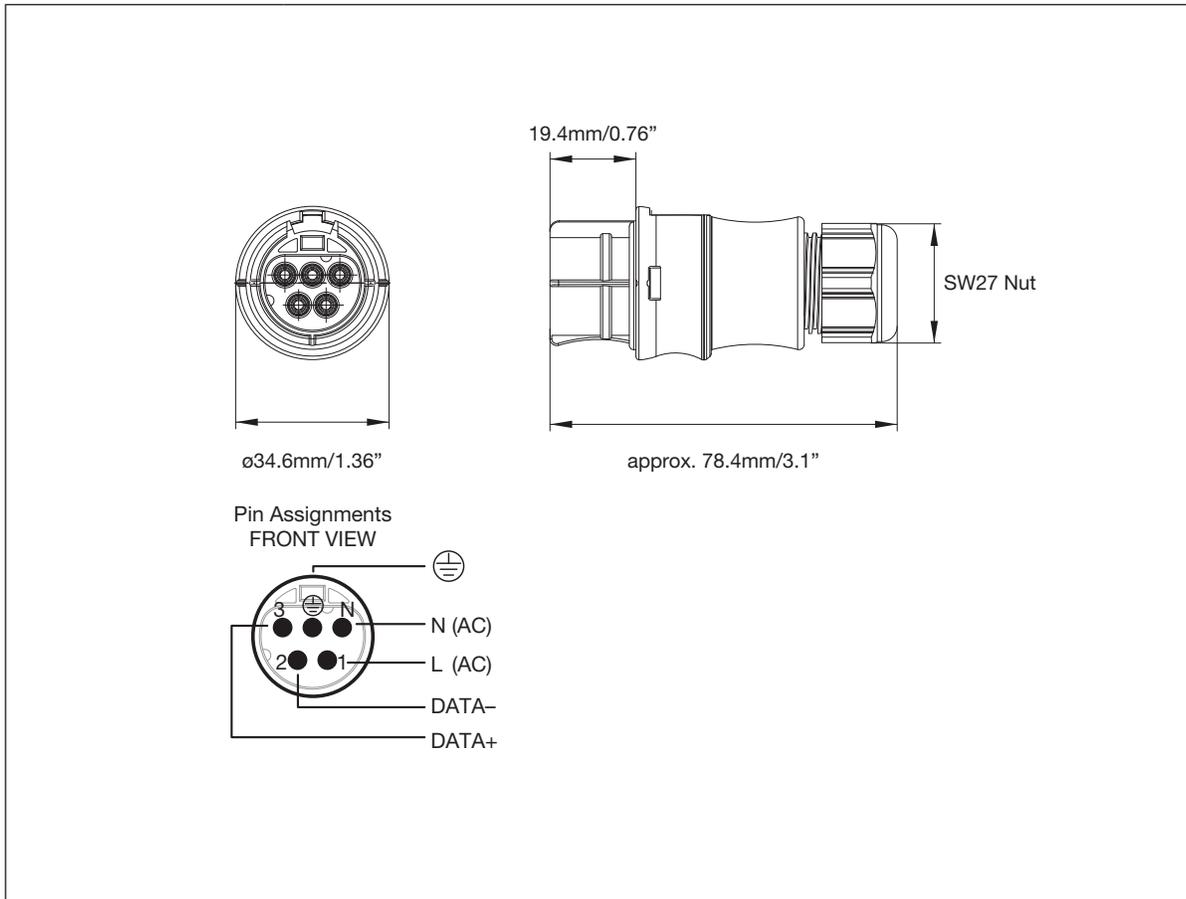
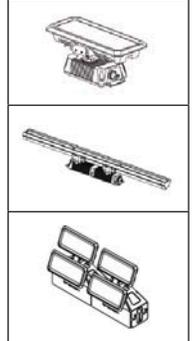
17.9mm/0.70"

Type:	IP66 rated connector end cap (female)
Use:	Connect to first XB Shield AC Data Injector IN connector of daisy chain
Indoor/Outdoor	Outdoor (IP66)

XB.AC.2303000
XB Shield AC 5-wire Field Installable Connector
(Female)

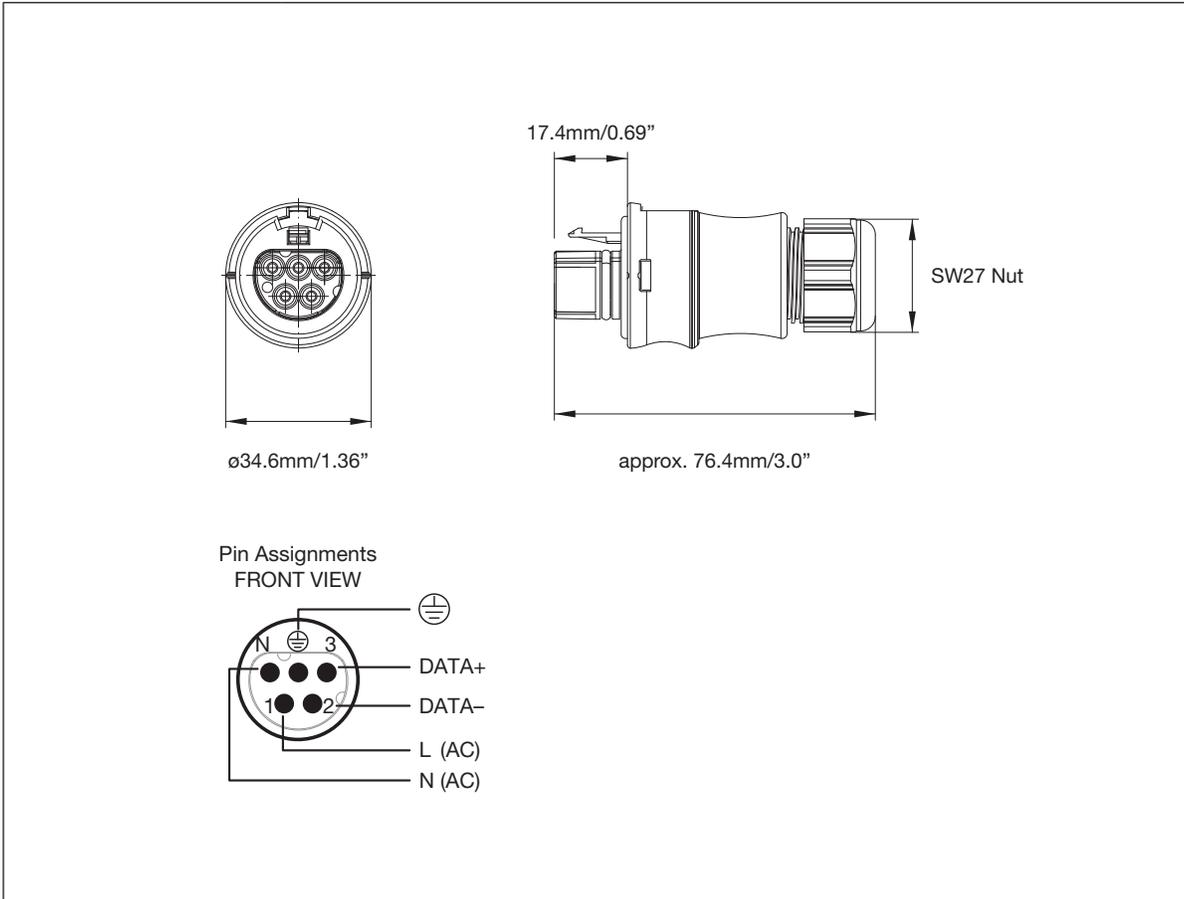
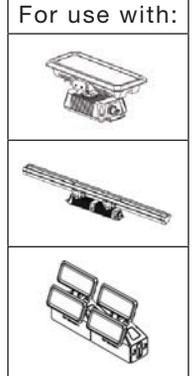
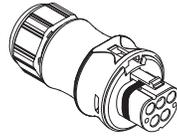


For use with:



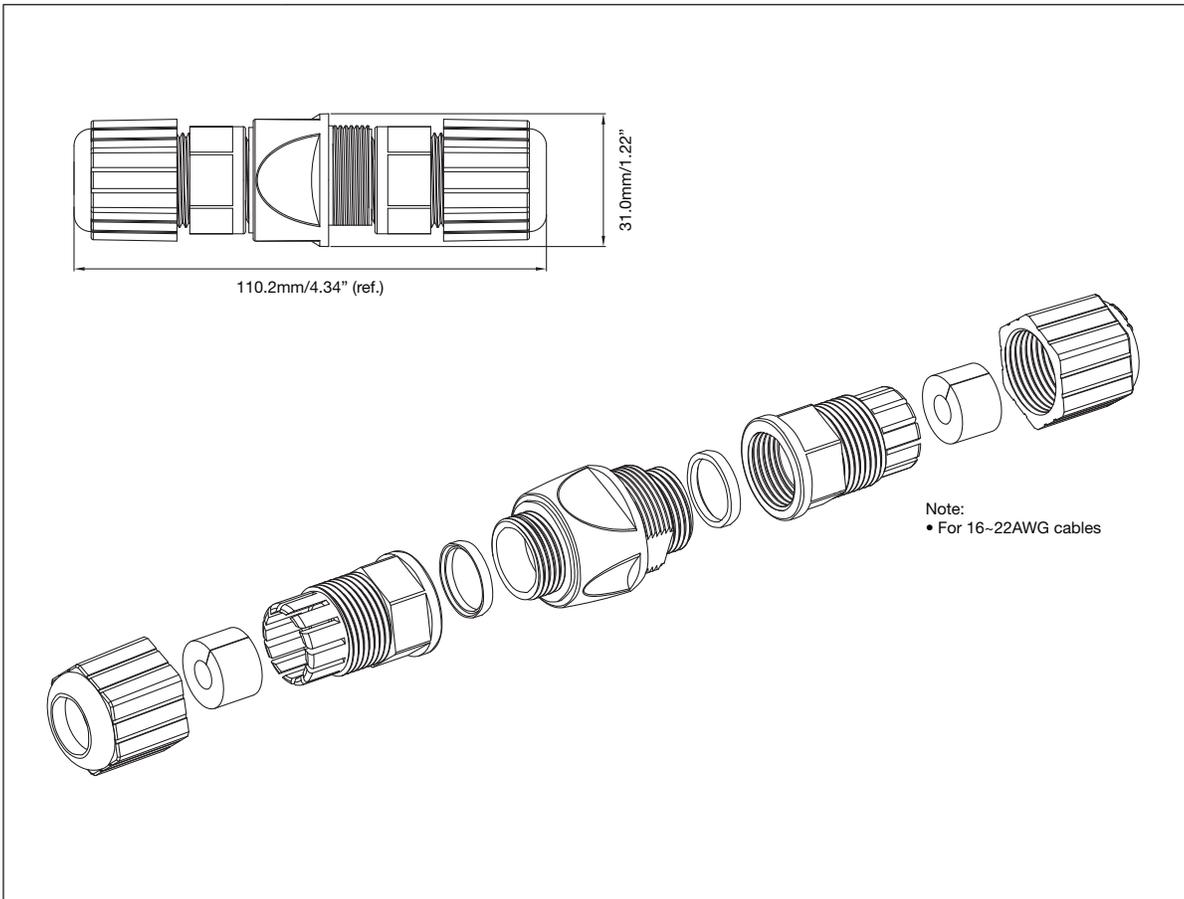
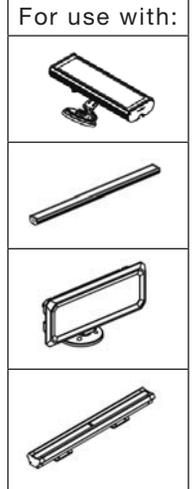
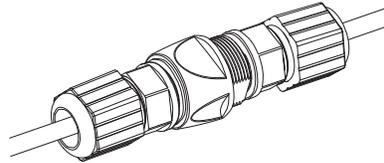
Type:	IP66 rated connector (female)
Use:	Attach to TX CONNECT XB Interconnection AC Cable (Open wire)
Indoor/Outdoor:	Outdoor (IP66)

XB.AC.2302000
XB Shield AC 5-wire Field Installable Connector
(Male)



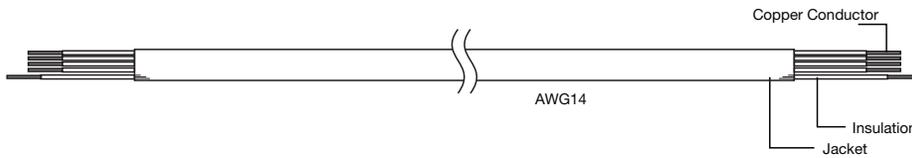
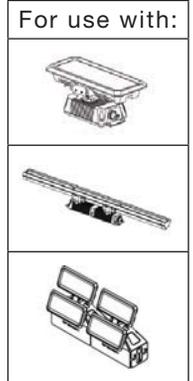
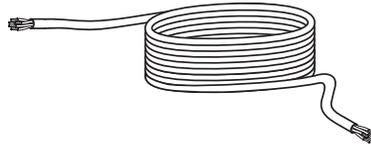
Type:	IP66 rated connector (male)
Use:	Attach to TX CONNECT XB Interconnection AC Cable (Open wire)
Indoor/Outdoor:	Outdoor (IP66)

XE.AC.020000
TX Connect XB Outdoor Interconnection Sleeve



Type:	Connector
Use:	Connects TX Connect XB Interconnection cables (RJ45-RJ45)
Indoor/Outdoor:	Outdoor IP66

XE.ID.999991x
TX Connect XB Interconnection AC Cable
5-wire



	Wire Connection		Male Connector	Female Connector
	Wire Color			
Neutral (AC)	Blue	White	N	N
Ground	Green/Yellow	Green	Ground ⊕	Ground ⊕
Live (AC)	Brown	Black	1	1
Data -	Black	Yellow	2	2
Data +	Grey	Red	3	3

NOTES:

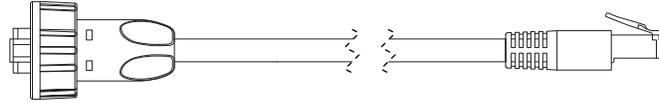
	EU		US	
Conductor	Copper	ø1.78mm/0.07"	Copper	ø3.43mm/0.14"
Insulation (Wall Thickness)	Rubber	0.9mm/0.04"	PVC	0.76mm/0.03"
Jacket	Rubber	ø15mm/0.59"	PVC	ø11.43mm/0.45"

• Jacket - Oil, water, UV resistant

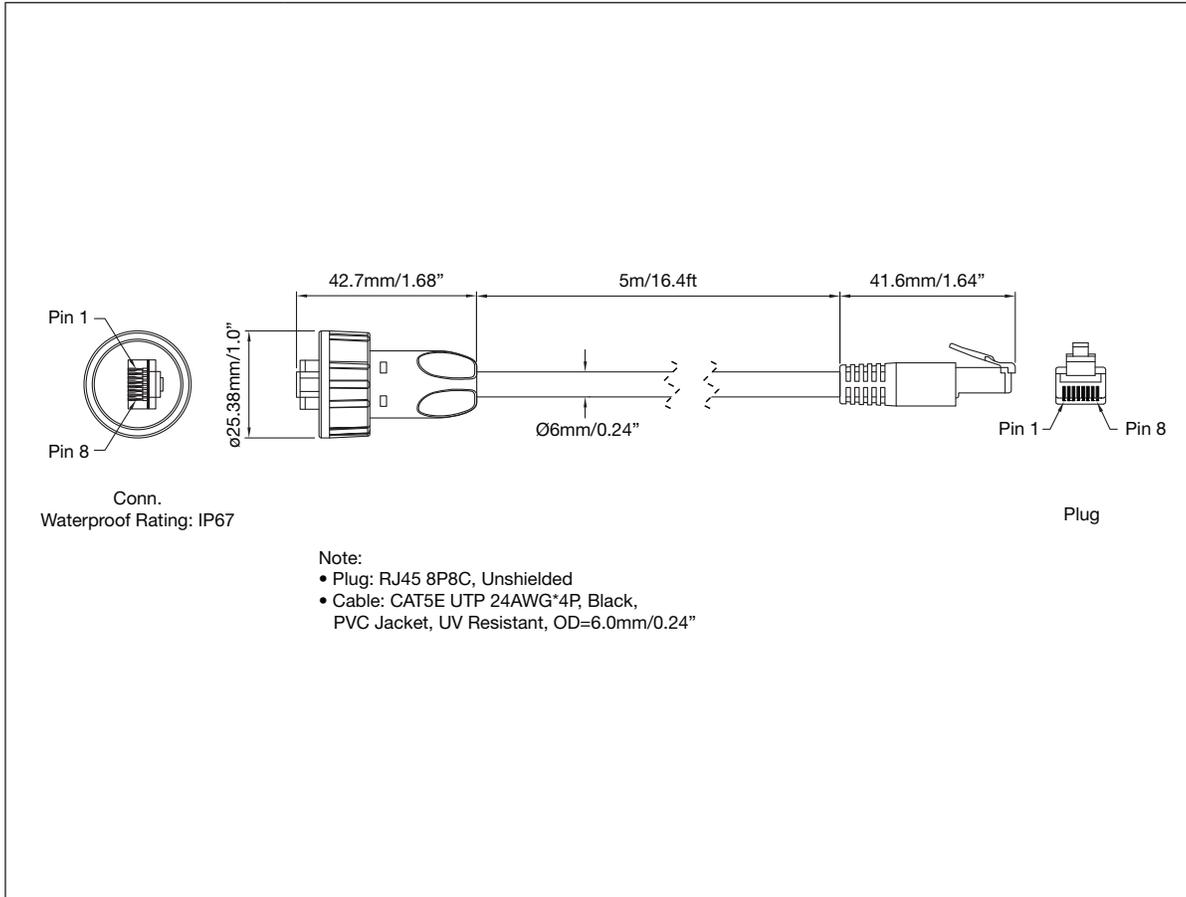
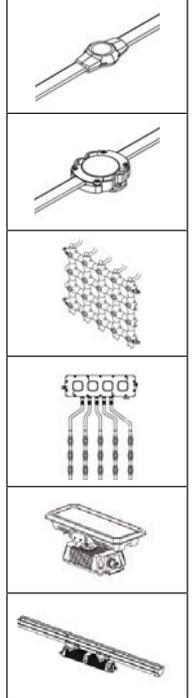
Type:	IP66 rated cable
Use:	Attach to XB Shield AC 5-wire Field Installable Connectors
Indoor/Outdoor:	Outdoor (IP66)
Part Numbers:	XE.ID.9999910 – (EU) 100m/328ft XE.ID.9999911 – (US) 100m/328ft

DE.AC.0000100

TX CONNECT Data Indoor/Outdoor Bridge Cable



For use with:



Type:	UTP 24 AWG Cat5e cable, RJ45 Female connectors on both ends. IP67 rated connector housing on one end
Use:	Connects Controller (indoor) to Distributor Box/Data Injector
Indoor/Outdoor	Indoor – Outdoor (IP67)
Notes:	5m/16.4ft

Butler XT

e:cue Engines

e:cue engines are the perfect platform for building dynamic, effective and reliable lighting applications. These engines are the functional backbone of lighting installations controlling fixtures, interacting with user terminals and executing shows. e:cue engines are built for steadiness, long-term use and flexibility. They are feature-rich and benefit from many years pioneering work in the field of lighting control.



Butler XT

Similar to the Butler but with more connectivity options and RDM capability, the Butler XT is a DMX/RDM engine that can be used in standalone mode to replay and loop previously uploaded lighting shows, programmed using a PC running the e:cue software suite. The Butler XT is also used as a DMX/RDM device controlled by another e:cue Engine. In standalone mode, one DIN-rail mountable Butler XT controls up to 1024 DMX/RDM channels. The DMX/RDM channel control can be increased to 65,536 channels by clustering more Butler XT. This Engine has many connectivity options used to control the lighting show running on the device. Connectivity options include direct connection to Glass Touch User Terminals, RS232, digital inputs and Ethernet.

Main features

- Controls up to 1024 DMX/RDM channels
- Scalable up to 65,536 channels
- Supports RDM protocol for bidirectional communication
- Internal real-time and astronomical clock
- 2 freely-configurable buttons
- 5 LEDs and 7-segment LED display for status information
- 100 MBit e:net
- Serial input port (RS-232) for connectivity to 3rd party systems
- Built-in IR-receiver for RC5 and traxon remote IR
- 8 freely configurable (optically isolated) digital inputs
- MicroSD card for show upload/configuration file storage (included in delivery)
- Freely configurable actions for standalone mode (e.g. play, pause, resume, stop, previous and next cuelist, intensity up/down)
- Master intensity dimmable
- Cuelist download from e:cue Programmer Elements or higher

Delivery scope

- Butler XT 160098
- MicroSD card

Optional accessories

- IR-Extension Cable 160111
- Butler XT GARAGE 160174
- IR Remote Control 160079
- Butler XT/GT Democase 160224
- Optional accessory pack 160162
(including power supply, network cable, RS-232 to open wire adaptor, printed system manual, software CD)

Technical data

Dimensions (W x H x D)	177 x 59.5 x 75.4 mm/ 6.97 x 2.34 x 2.97 inch
Weight	0.4 kg/0.88 lbs
Power	12 ... 24V AC/DC, 7.5W e:bus requires: 24 V DC, >= 1,3 A, 32 W
Operating/storage temp.	0 ... 40 °C/32 ... 104 °F
Operating/storage hum.	0 ... 80% non-condensing
Protection class	IP20
Materials	Aluminium, plastic
Mounting	on 35 mm DIN rail
Certification	CE, ETL

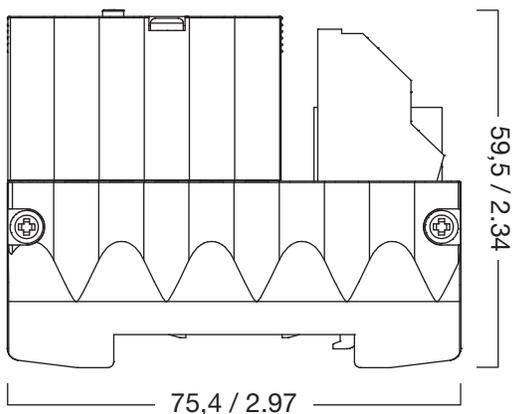
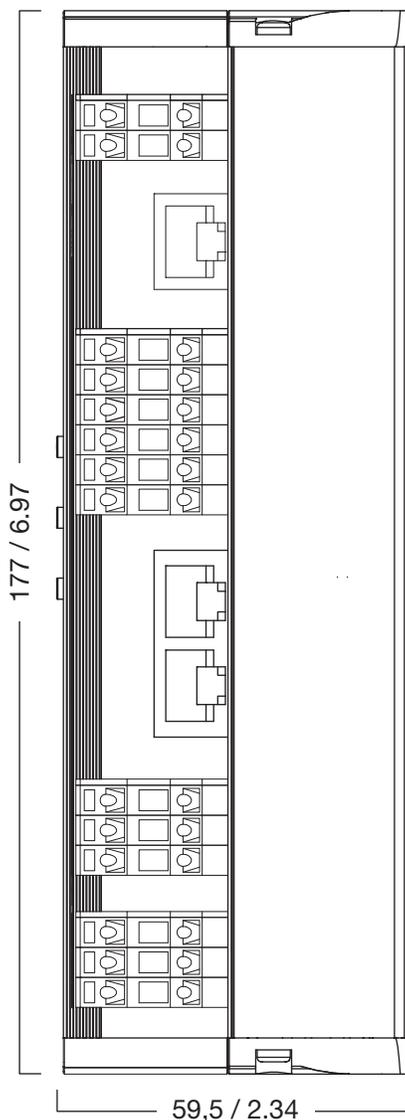
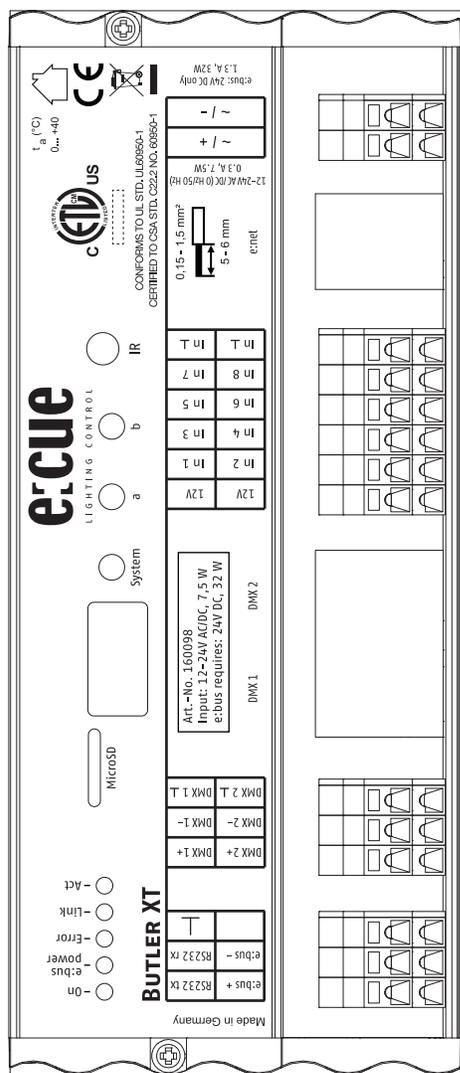
Interfaces

User interface	Button, IR remote control
System link	e:bus (clamp terminals) e:net (RJ45)
Outputs	DMX (RJ45, clamp terminals)
Inputs	RS-232 (clamp terminals) RDM (RJ45, clamp terminals) 8 optically isolated digital inputs
Display	7-segment LED



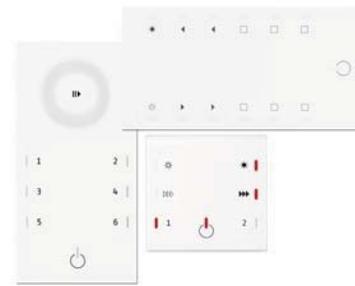
Intertek
4000805

Dimensions (mm/inch)



e:cue User Terminals

Many applications of lighting control require interfaces into the human world. e:cue user terminals with their sleek, stylish and yet unostentatious design fit perfectly in all environments. Ergonomics, usability and functionality were emphasized as main aspects in their development. e:cue user terminals conduce controlling your lighting application with a touch of your finger tip, either a room illumination or a complete store front.



Glass Touch User Terminals

Glass Touches are a series of user terminals featuring a sleek design with a glass surface, touch-sensitive keys and a scroll-wheel for user interaction. Designed to work with the Butler XT2 via the e:bus protocol, the Glass Touch keys and wheel are easily customized using the e:cue software to perform any function according to project requirements. Pleasing to the eye, these devices are the perfect solution for user interaction and control in high-end lighting applications such as hospitality, architectural, healthcare, residential and other projects. Glass Touches are wall mountable, and up to eight units can be connected to a single Butler XT2 for flexible installation..

Features

- Sensor keys with status LEDs
- Touch wheel, Play/Pause (T6R only)
- One On-Off sensor
- Simple mounting in standard with in-wall fittings
- Ultra thin design
- Sleek white glass front
- Connects via free topology e:cue e:bus (2-wire power and data connection)

Delivery content

	Item code
• Glass Touch T6 or Glass Touch T6R or Glass Touch T12	AA439100031 AA439120031 AA439070031
• Hexagon screw key	
• Mounting plate	

Technical data T6, T6R, T12

Power supply	24 V=, 18 mA (via e:bus)
Operating/storage temp.	0 ... 40 °C/32 ... 104 °F
Operating/storage hum.	0 ... 80%, non-condensing
Protection class	IP20
Housing	Glas (surface), aluminium (housing)
Mounting	In standard in-wall fitting
Certification	CE

Technical data T6

Dimensions (W x H x D)	80 x 80 x 11 mm 3.15 x 3.15 x 0.43 in
Weight	110 g/0.23 lbs
User interface	6 capacitive touch sensors 1 capacitive on/off sensor

Technical data T6R

Dimensions (W x H x D)	80 x 160 x 11 mm 3.15 x 6.3 x 0.43 in
Weight	210 g/0.46 lbs
User interface	6 capacitive touch sensors 1 capacitive on/off sensor 1 capacitive touch wheel 1 capacitive play/pause sensor

Technical data T12

Dimensions (W x H x D)	80 x 160 x 11 mm 3.15 x 6.3 x 0.43 in
Weight	210 g/0.46 lbs
User interface	12 capacitive touch sensors 1 capacitive on/off sensor

Section 2

Manuals and Installation Guides



LINER SHIELD AC XB

INSTALLATION GUIDE



Covers:
Liner Shield AC XB-18
Liner Shield AC XB-27
Liner Shield AC XB-36

Contents

1. INTRODUCTION	P.3
2. SAFETY AND OPERATION	P.6
3. INSTALLATION	P.9
4. SYSTEM CONFIGURATION	P.15
5. CARE AND MAINTENANCE	P.16
6. TECHNICAL SPECIFICATION	P.17
7. WARRANTY STATEMENT	P.17

FOR YOUR OWN SAFETY AND THAT OF THE PRODUCT, PLEASE READ THIS INSTALLATION GUIDE CAREFULLY BEFORE BEGINNING SETUP AND INSTALLATION.

THIS IS A CLASS A PRODUCT. IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE COUNTER MEASURES.

1. INTRODUCTION

1.1 General

The Traxon™ Liner Shield AC XB is an IP66-rated, AC line input, linear lighting fixture equipped with high-brightness LEDs, dedicated to project an intense even light spread to brightly color wash any flat surface with ease. This fixture is suitable for indoor or outdoor use and equipped with a host of customization options including LED type, LED color, beam angles and lenses. The simple connection system and long run length capability enables easy installation for large-scale lighting projects.

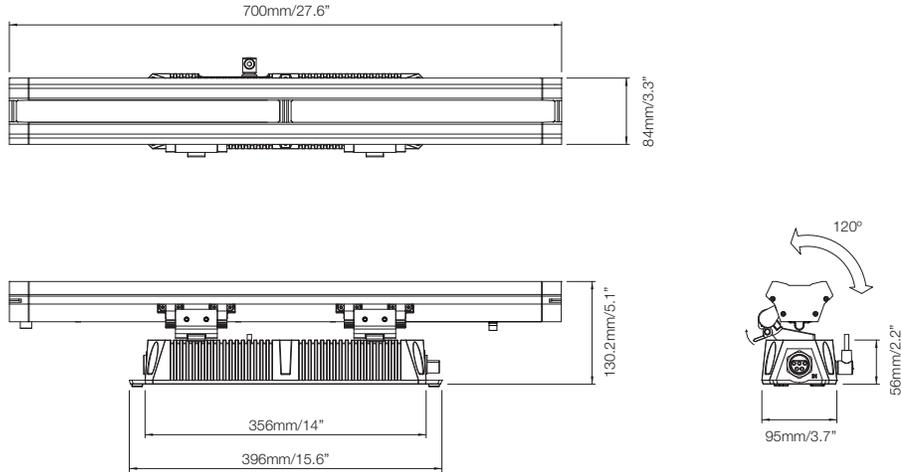
The Liner Shield AC XB has an aluminium extrusion housing.

Features:

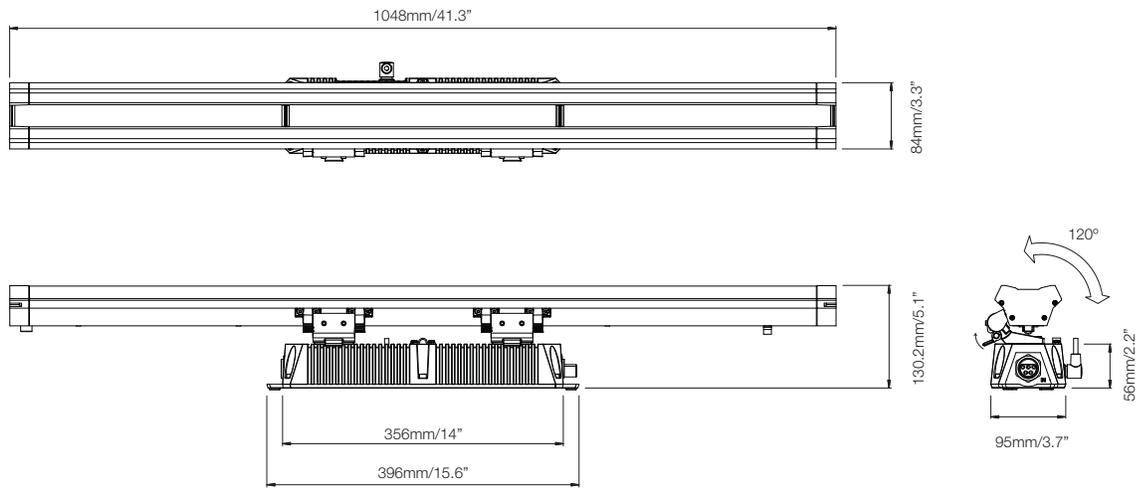
- 18, 27 or 36 LED options available
- Independent adjustable LED head; 120° vertical tilt
- Powered by AC line voltage
- DMX Control
- Daisy Chain System
- Auto-Addressing
- Outdoor Applications (IP66-rated)
- Simple connection system
- Detachable base design
- Field-installable connectors

1.2 Dimensions

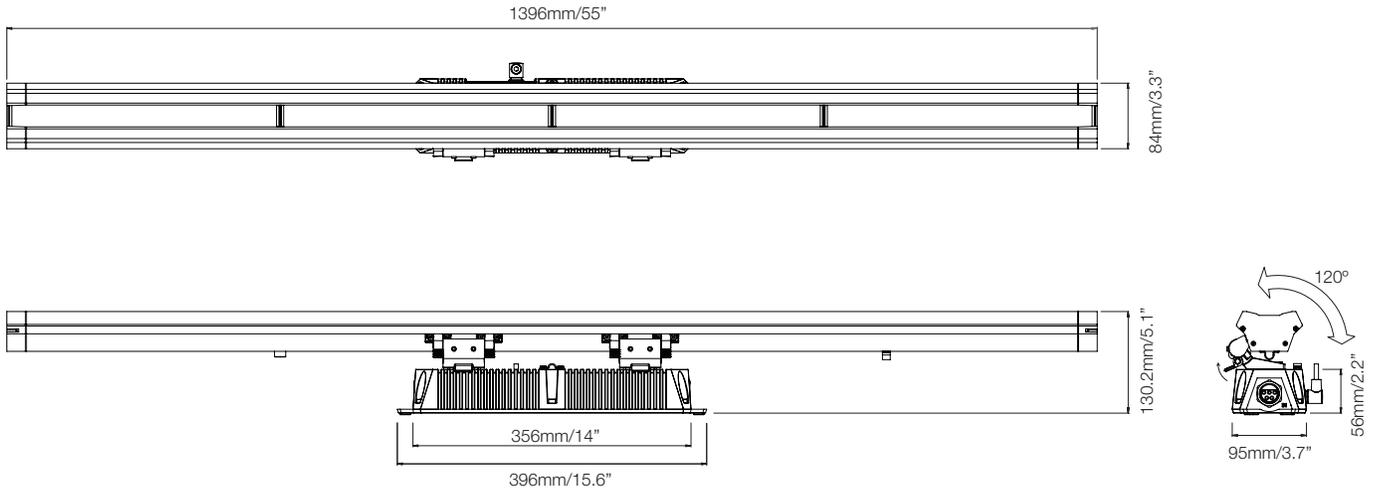
Liner Shield AC XB-18



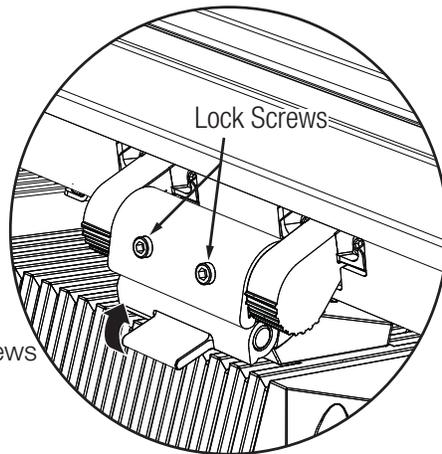
Liner Shield AC XB-27



Liner Shield AC XB-36



Pull both Hinges up to tilt.
Once angle is defined, push
Hinges down and use Lock Screws
to finalize the angle.



2. SAFETY AND OPERATION

CAUTION – UNPLUG THE POWER SUPPLY FROM THE MAINS POWER BEFORE CONNECTING ANY CABLES TO AVOID DAMAGING THE PRODUCTS. DO NOT HOT SWAP FIXTURES.

CAUTION – AVOID LOOKING DIRECTLY INTO THE LED LIGHT SOURCE AT CLOSE RANGE FOR YOUR OWN SAFETY.

ANY PERSONS INSTALLING THIS PRODUCT SHOULD COMPLY WITH LOCAL STANDARDS AND REGULATIONS AND MUST BE QUALIFIED FOR THE HANDLING OF ELECTRICAL EQUIPMENT.

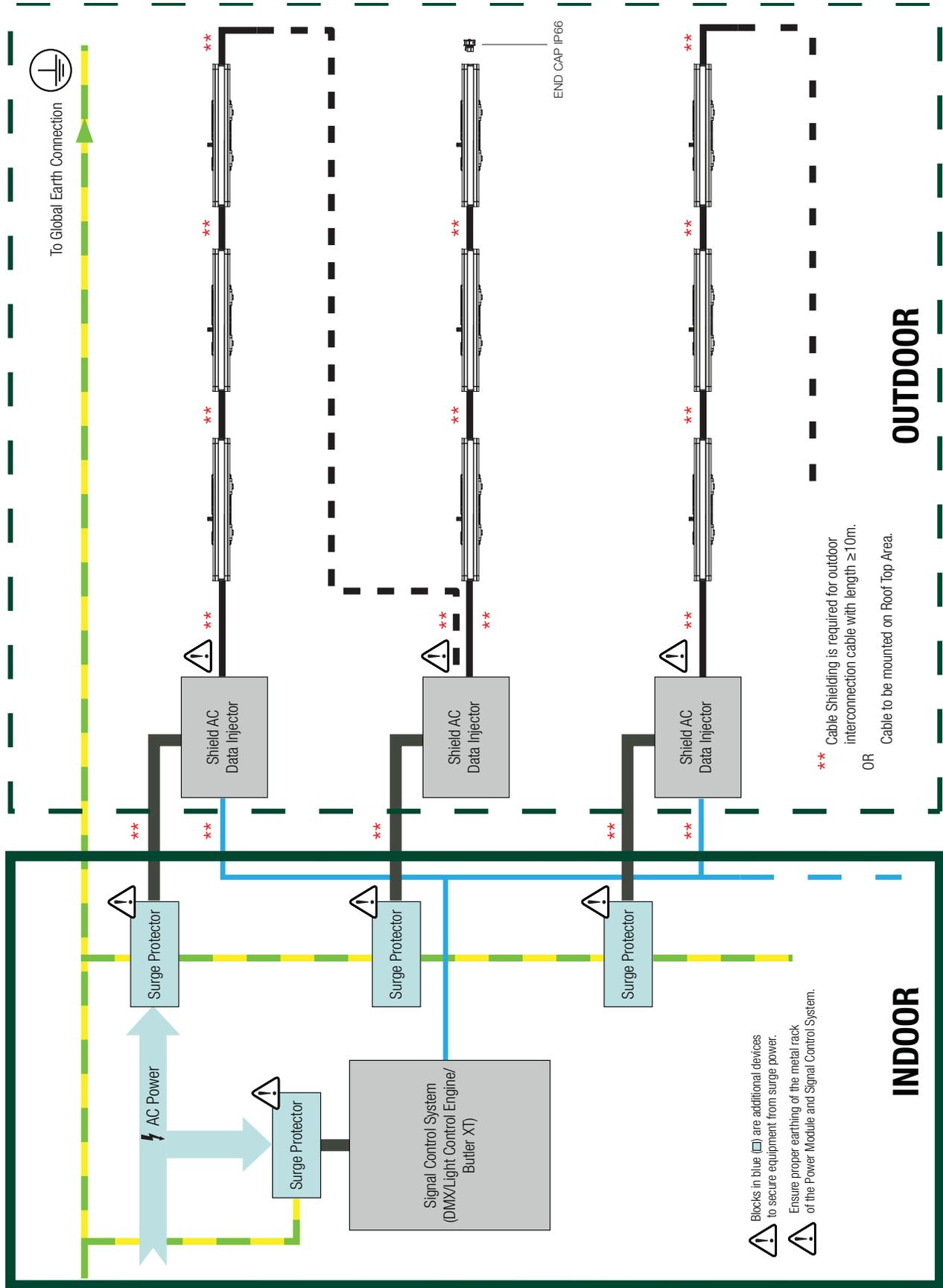
- Do not attempt to install or use a fixture until installation instructions and safety labels are fully understood.
- This product is designed for indoor and outdoor use.
- Ensure product operates within the specified temperature range.
- Do not attempt to open the product. Not user serviceable.
- Do not use a fixture if any part of it, or the power cables are damaged.
- Only use fixture for specified voltage, do not exceed
- Always maintain connection to ensure waterproofing, keep all Dust Caps and End Caps in a container for reuse. Caution: Dust caps are NOT waterproof.
- DO NOT twist the connectors while still connected with AC base unit. Insert screwdriver in the locking clip hole to unlock the connector.
- Ensure locking clip is present and properly inserted on the connector when making a connection.
- If the fixture has been subjected to drastic temperature variances, for example, following transportation, do not connect the fixture until it has reached room temperature, as moisture condensation may cause electric shock and product damages.
- When installing the fixtures and system power supplies, please ensure they will not be exposed to moisture and extreme heat (and direct sunlight for outdoor products). Besides, keep a clean operating environment for the fixtures and system power supplies.
- Please study this Installation Guide thoroughly and check the latest Technical Specification Sheets available from our website www.traxontechnologies.com before setup.
- **Any non-compliance of the Installation Guide will void the Traxon warranty.**

2.1 Surge Protection

1. Individual Power Supply Surge Protective Device (SPD)
 - a. UL 1499 Type 1 or Type 2 SPD up to IEEE & ANSI C62.41.2 requirement should be installed in the main incoming area of the Power Source.
 - b. UL 1499 Type 3 SPD up to IEEE & ANSI C62.41.2 should be installed in individual PSU, individual LED Engine and individual Data Control Engine to protect the device from abnormal power surge and lightning surge.
2. Product Earthing
 - a. The exposed metal of the product body should be earthed with resistance less than 1 ohm to the Master Ground according to the ANSI/ESD S6.1 and IEEE standard 142-1982 requirement.
3. Mesh or Mechanical Fixture Earthing
 - a. All the mesh or mechanical fixture to fix the product should be earthed with less than 1 ohm resistance to Master Ground.
4. Shielding of the cable
 - a. Data Cables or Power Cables of length longer than 10m or Cables to be mounted on Roof Top Area should be shielded to protect the cable from picking up the induced surge from outside environment.
 - b. The shielding resistance to the Master Ground should be less than 1 ohm.
5. System working environment requirement
 - a. Traxon product should comply with IEC 61000 Power Surge and Fast Transient Test requirements.
 - b. Contractor should ensure that the ambient environment should comply with IEC 61000 requirements.
6. PSU and Data Control System Rack Earthing
 - a. All the racks for PSU and Data Control System should be properly earthed with less than 1 ohm resistance to Master Ground.

It is highly recommended that proper surge protection is implemented into the final installation. See FIG 1 (P. 8) for wiring details.

FIG 1: Surge Protection Block Diagram



3. INSTALLATION

3.1 Installation Sequence

Plan your installation before mounting any luminaires. The following should be considered for a successful installation.

- Installation distances and appropriate cable lengths.
- Appropriate anchor bolts where necessary to secure the luminaire.
- The number of fixtures and appropriate power sources.
- DMX controller to be used to control the fixtures.

3.1.1 Installation Checklist

1. Prepare cables and connectors.
2. Perform functional check of Luminaires.
3. Ensure all connection points are covered by their respective Dust Caps and/or Waterproof End Caps after testing.
4. Ensure all pre-installation checks laid out below have been followed.
5. Mount the luminaires on-site. If the installation is to be left uncompleted overnight, check all non-connected connection points on luminaires are covered with Waterproof End Caps.

Ensure all the Connection Cables, Luminaires with Power Supply Units and Data Injector Boxes are initially stored in a dry area to guarantee the complete sealing of the system from water before installation.

FIG 2: Cautions must be maintained in order to ensure waterproofing capabilities of entire system.



3.2 Functional Check Of The Products

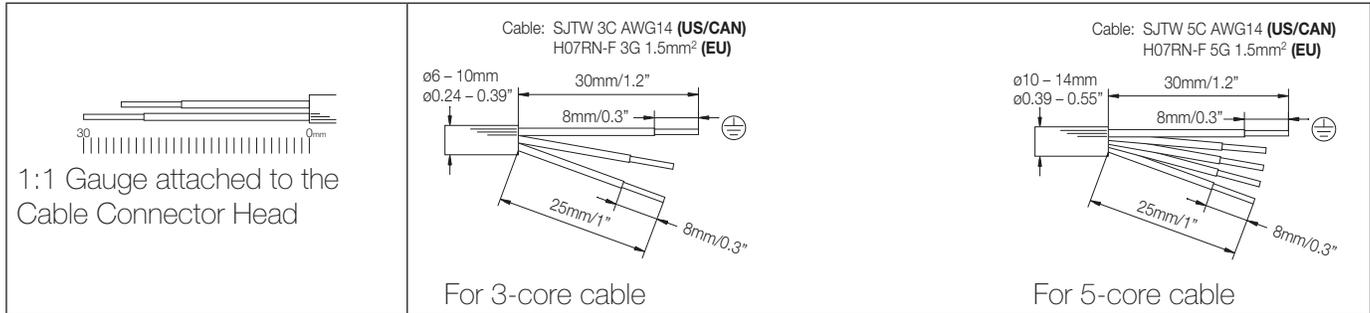
3.2.1 Sequence For Cable And Connector Preparation

1. Trim cable.
2. Plan for any possible bending of cables.
3. Fix cable ends with connectors.
4. Complete sealing of connectors by tightening screw nut with spanner/wrench.
5. Unplug Dust Caps/Waterproof End Caps and keep safe for reuse.
6. Connect Luminaires with Power Supply Units and Data Injector Boxes with connection cables in the daisy-chain manner described in the wiring diagram (P. 15).
7. Open Short Test should be performed to ensure cable wires are connected correctly. Recrimping of wires should be done if any failures occur.
8. Perform functional check on all Luminaires.
9. Report any functional defect found to your nearest Traxon Technologies office. DO NOT attempt to install a luminaire with functional defects on-site.

3.2.2 Cable Preparation And Connectors

Trim the cable outer sheath and insulation layer with the 1:1 wire trimming gauge (refer to the installation guide provided on the Traxon Tag attached to the Cable Connector Head).

FIG 3: Trimming the cable outer sheath

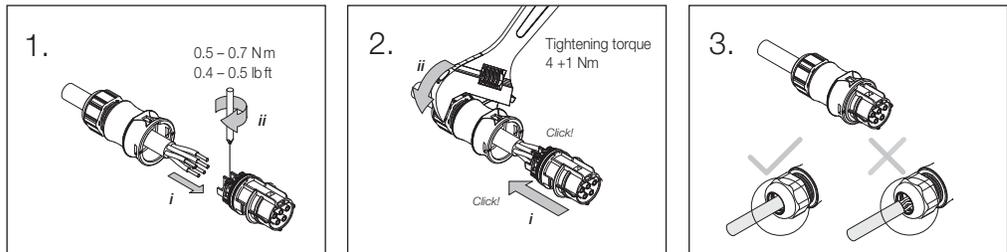
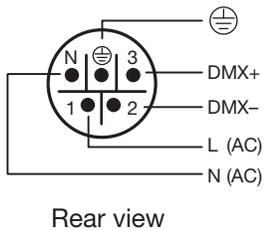


Fix the cable ends with connectors (refer to the installation guide provided on Traxon Tag attached to Cable Connector Head)

5-pin AC socket



Traxon part no.
XB.AC.2303000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.

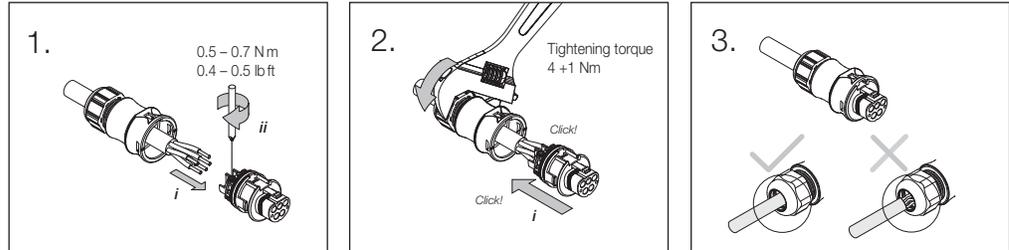
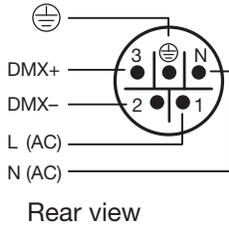


Ensure cable is not exposed.

5-pin AC plug



Traxon part no.
XB.AC.2302000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.

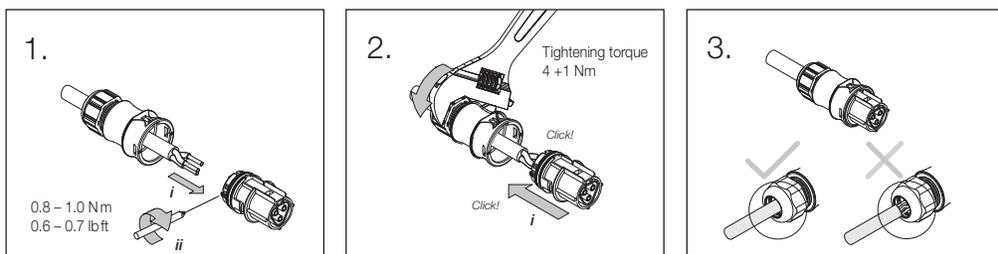
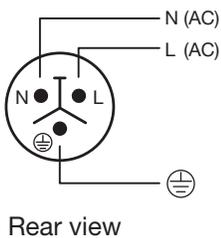


Ensure cable is not exposed.

3-pin AC socket



Traxon part no.
XB.AC.2306000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.



Ensure cable is not exposed.

NOTE: Water leakage induced by a loosened screw nut (see step 2 of the above instructions) will not be under warranty by Traxon Technologies.

3.2.3 Cable Bending

Cable must NOT be bent below the Minimum Bending Radius (4 x Cable Diameter) as specified by cable manufacturer and the Non-Bendable Length of 5cm near the connector end MUST be adhered to.

<p>Bending radius (for conductors) Note the minimum bending radius for conductors > 1.5mm². Pull forces on the contact points can be avoided by proceeding as follows: a – Bend the wire as required s – Cut the wire to length d – Strip the cable and wires</p>	<p>The diagram illustrates three steps for cable preparation: 1. Bending: A cable is bent around a curve with a radius labeled $\geq 4D$, where D is the cable diameter. This is labeled '(Minimum Bending Radius)'. 2. Cutting: A pair of scissors is shown cutting the cable at a point labeled 's'. 3. Stripping: The cable is stripped back by a distance labeled 'd'. A 5cm section near the connector is labeled '(Non-Bendable Length)'.</p>
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3.2.4 Final Check Of Connector

Connector D-Ring must be in correct position for proper waterproof function.

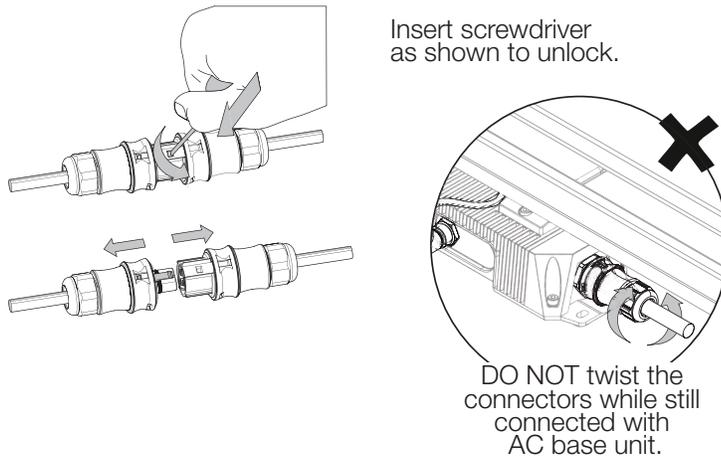
<p>D-Ring in correct position.</p>	<p>A close-up photograph of a black connector. The D-ring is correctly seated in its groove, and the rubber ring is properly aligned to provide a seal.</p>
<p>D-Ring is displaced. The rubber ring is not in its intended position and will cause a weak point for water ingress.</p>	<p>A close-up photograph of a black connector where the D-ring is displaced from its intended position. This displacement causes the rubber ring to be misaligned, creating a gap that can lead to water ingress.</p>

3.3 Before On-Site Installation

Ensure all the Connection Cables are removed from the AC Base Unit with the correct method:

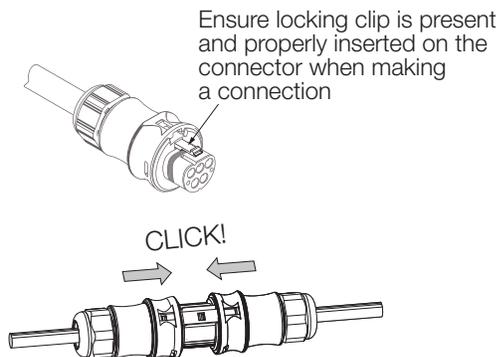
1. Insert Screwdriver as shown in FIG 4 to press down on the locking clip to unlock.
2. Pull the cable outwards from the connector head. DO NOT twist the connectors while still connected with the AC base unit.

FIG 4: Correct method to separate the Connectors



3. Transfer the locking clip from the Socket connector of the Luminaire back to the cable Plug connector (see section 3.2.2 Cable Preparation And Connectors P.10-11 to distinguish between Sockets and Plugs). Ensure the locking clip is inserted correctly to prevent the Connector Head from damage.

FIG 5: Locking the Cable Connectors

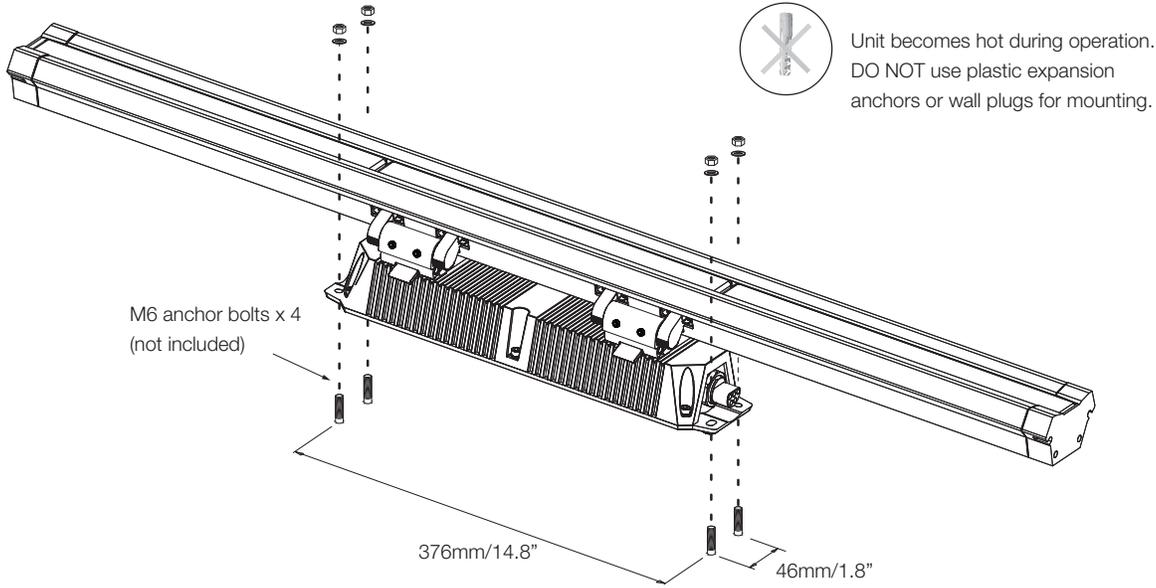


4. Re-connect all Dust Caps and Waterproof End Caps firmly to cover all fixture connection points one by one immediately after connection cable has been successfully disconnected. Please contact your local support team for extra Dust Caps and Waterproof End Caps if any are lost. Do not attempt to install the device if no Dust Caps or Waterproof End Caps are present/available.

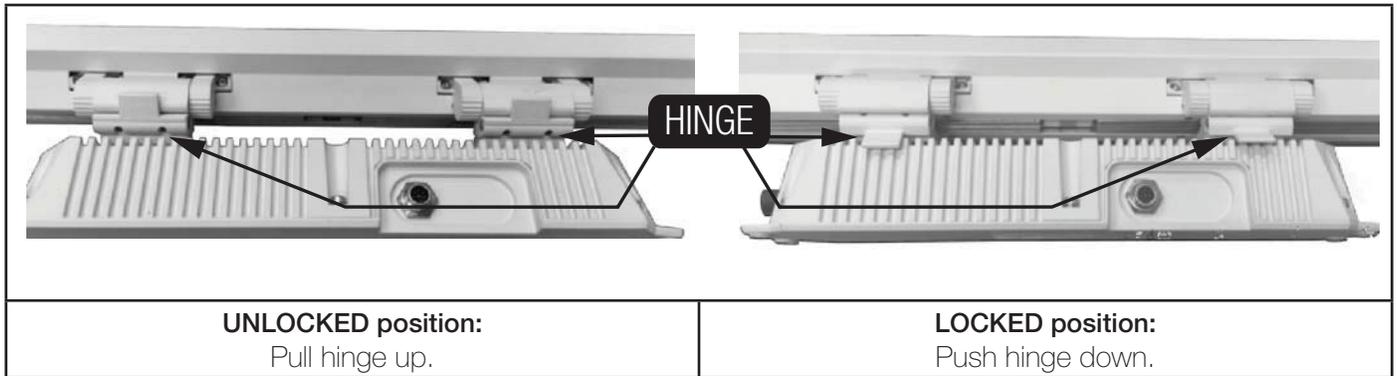
3.4 On-Site Installation

 Do not attempt installation in wet or severe weather conditions.

1. Mount the AC Base Unit with 4x M6 Anchor Bolts.



2. Release the two locks by pulling the Locking Hinges upwards.



3. Tilt the luminaire head to the desired angle, then push the hinges down to lock. Tighten lock screws.
4. Unplug the Dust Caps/Waterproof End Caps and keep them in a container for reuse.
5. Fully connect the luminaires with connection cables one after the other. Do not work on the other unit connections until the first unit under installation is properly connected.
6. Do not leave and expose Luminaires with Dust Cap plugged in under wet/raining or snowing environment as the Luminaire is not IP66 compliant unless properly connected.

5. CARE AND MAINTENANCE

TRAXON™ PRODUCTS ARE OF SUPERIOR DESIGN AND QUALITY AND SHOULD BE TREATED WITH CARE. THE RECOMMENDATIONS BELOW WILL HELP FULFILL ANY WARRANTY OBLIGATIONS AND GAIN GOOD USE AND LONGEVITY FROM THE PRODUCTS.

- Do not attempt or use the product(s) until you read and understand the installation instructions. Failure to adhere to these instructions could result in serious injury or property damage.
- Do not use product(s) if cables are damaged.
- Do not connect cables and connectors when wet or in wet area. Moisture on bare connectors can cause electric shock and damage to product(s).
- Do not use product(s) in extreme heat environment. Ensure there is sufficient airflow and use cool air circulation if required.
- Do not drop, knock, or shake product(s). Rough handling can damage the electronics and void the warranty.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean products. Wipe with a damp cloth on housings and a dry cloth on electronics to remove dirt or dust.
- Do not attempt to service or repair the product(s) unless done by an authorized service personnel. Contact your local Traxon office or distributor for details.

If the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

6. TECHNICAL SPECIFICATION

RGB

Color Range:	16.7 million additive RGB colors with variable intensity
Light Source:	18 / 27 / 36 High intensity power LEDs
Beam Angle:	10°, 20°, 30°, 40°, 40°x10°, open beam
Power Input:	100-240V AC 50/60Hz
Power Consumption:	28W max. / 40W max. / 53W max.
Weight:	5.5kg / 7kg / 8.3kg
Operating Temperature:	-40°C to 60°C (-40°F to 140°F)

White

Color Temperature:	6500 K (Cold White)	2700 K (Warm White)
Light Source:	18 / 27 / 36 High intensity power LEDs	
Beam Angle:	10°, 20°, 30°, 40°, 40°x10°, open beam	
Power Input:	100-240V AC 50/60Hz	
Power Consumption:	28W max. / 40W max. / 53W max.	
Weight:	5.5kg / 7kg / 8.3kg	
Operating Temperature:	-40°C to 60°C (-40°F to 140°F)	

As with all electronic devices, LED output degrades over time - a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degradation is a complex function of many factors such as operating efficiency, duration of continuous operation, and operating conditions (e.g. ambient temperature). Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers "sort" LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process always results in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

7. WARRANTY STATEMENT

Traxon Technologies warrants its Products against material or workmanship defects for a period of three (3) years from date of purchase, provided that the purchased items are used under the conditions stated in this user manual.

Please refer www.traxontechnologies.com for all warranty terms and conditions.



Please check for the latest updates and changes on the Traxon website.

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WWW.TRAXONTECHNOLOGIES.COM

An OSRAM Company



WALL WASHER SHIELD AC XB

INSTALLATION GUIDE



Covers:
Wall Washer Shield AC XB-18
Wall Washer Shield AC XB-36

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4. SYSTEM CONFIGURATION	P.15
5. CARE AND MAINTENANCE	P.16
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7. WARRANTY STATEMENT	P.17

FOR YOUR OWN SAFETY AND THAT OF THE PRODUCT, PLEASE READ THIS INSTALLATION GUIDE MANUAL CAREFULLY BEFORE BEGINNING SETUP AND INSTALLATION.

THIS IS A CLASS A PRODUCT. IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE COUNTER MEASURES.

1. INTRODUCTION

1.1 General

The Traxon™ Wall Washer Shield AC XB is an IP66-rated, AC line input, lighting fixture equipped with high-brightness LEDs that generates single color or color changing (RGB model only) light for a rich wall-washing effect. This fixture is suitable for indoor or outdoor use and equipped with a host of customization options including LED type, LED color, beam angles and lenses. The simple connection system and long run length capability enables easy installation for large-scale lighting projects.

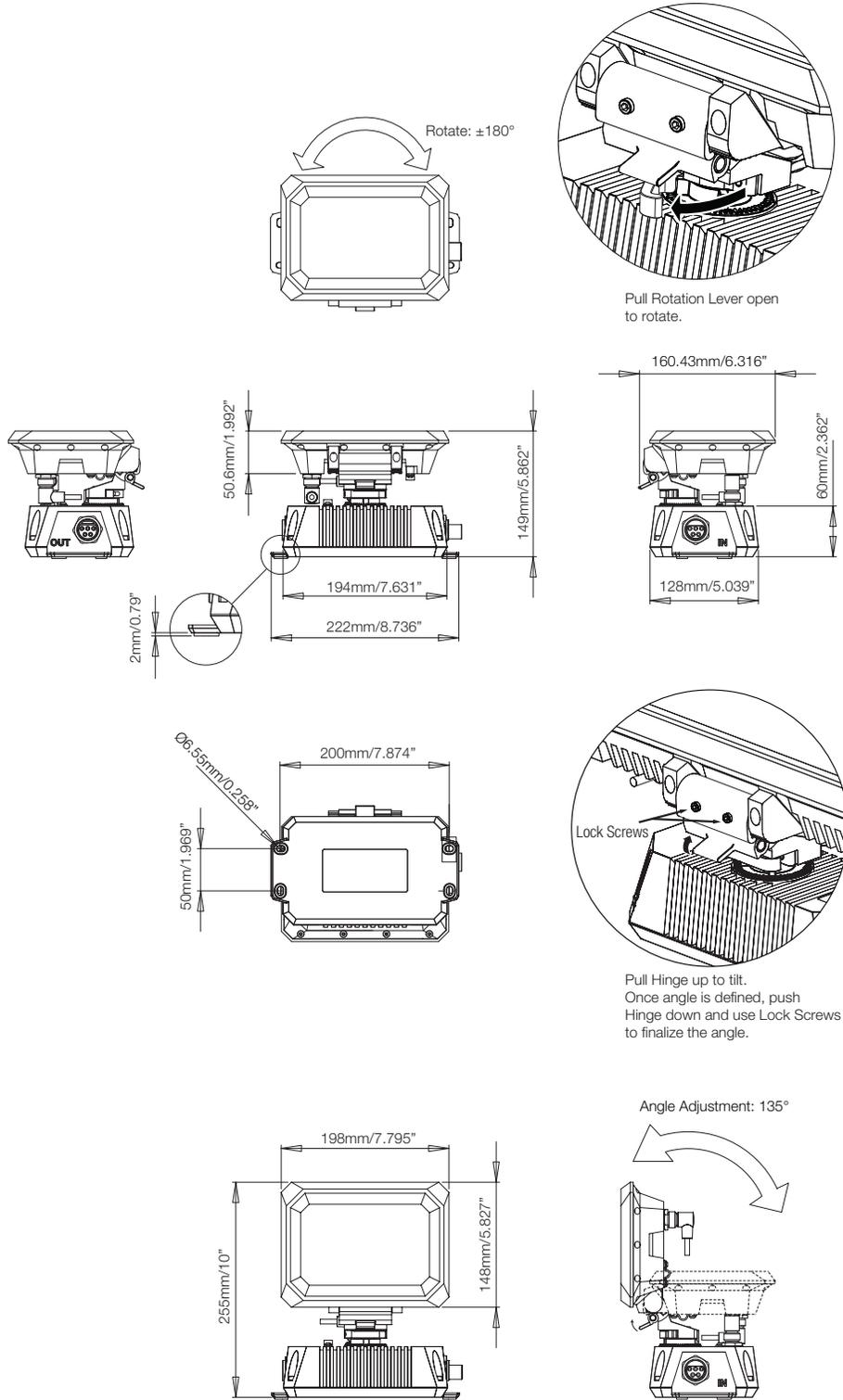
The Wall Washer Shield AC XB has an aluminium die cast housing with a clear tempered glass cover lens.

Features:

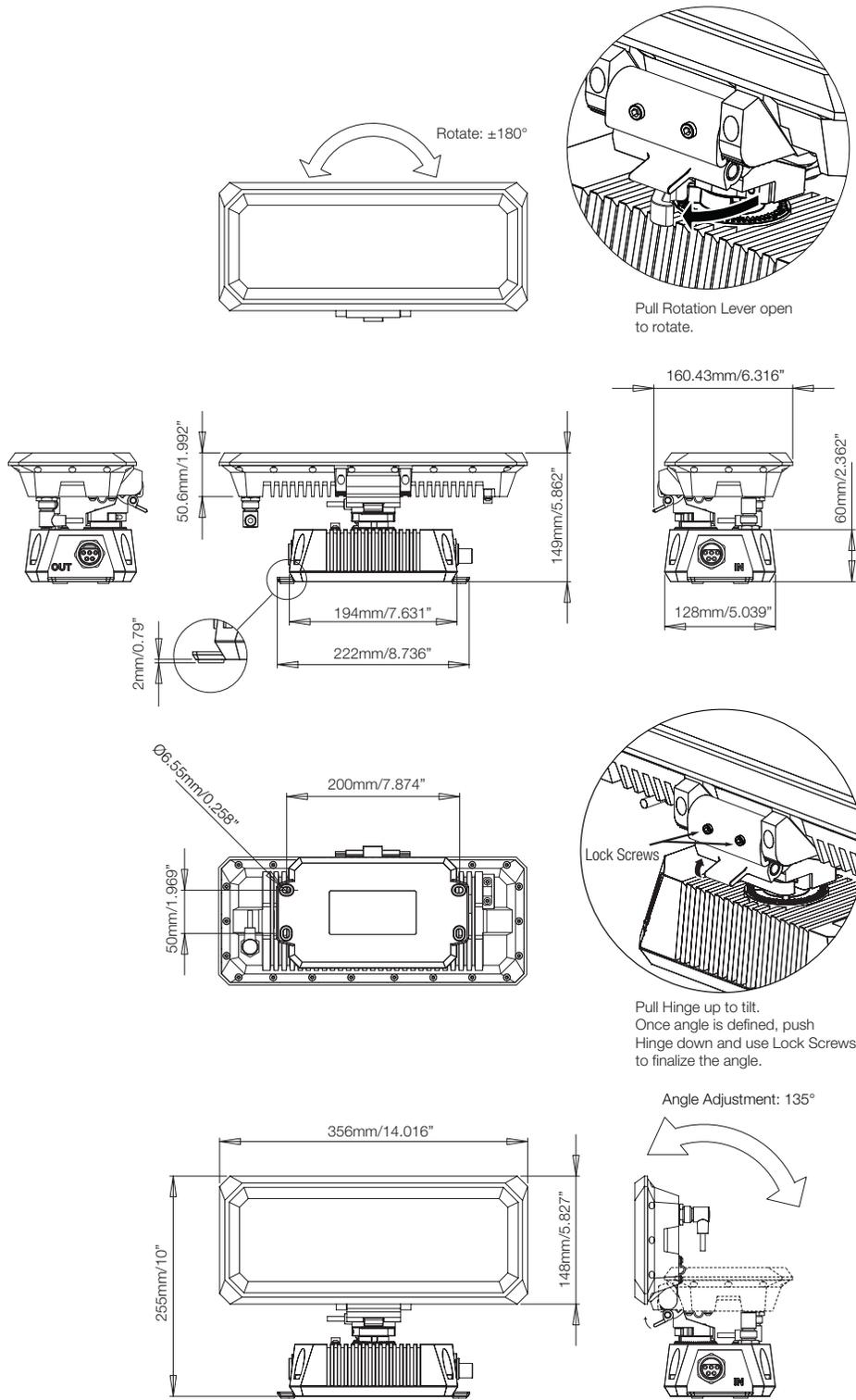
- 18 or 36 LED options available
- Independent adjustable LED head - 135° vertical tilt; 180° horizontal rotation
- Powered by AC line voltage
- DMX Control
- Daisy Chain System
- Auto-Addressing
- Outdoor Applications (IP66-rated)
- Simple connection system
- Detachable base design
- Field-installable connectors

1.2 Dimensions

Wall Washer Shield AC XB-18



Wall Washer Shield AC XB-36



2. SAFETY AND OPERATION

CAUTION – UNPLUG THE POWER SUPPLY FROM THE MAINS POWER BEFORE CONNECTING ANY CABLES TO AVOID DAMAGING THE PRODUCTS. DO NOT HOT SWAP FIXTURES.

CAUTION – AVOID LOOKING DIRECTLY INTO THE LED LIGHT SOURCE AT CLOSE RANGE FOR YOUR OWN SAFETY.

ANY PERSONS INSTALLING THIS PRODUCT SHOULD COMPLY WITH LOCAL STANDARDS AND REGULATIONS AND MUST BE QUALIFIED FOR THE HANDLING OF ELECTRICAL EQUIPMENT.

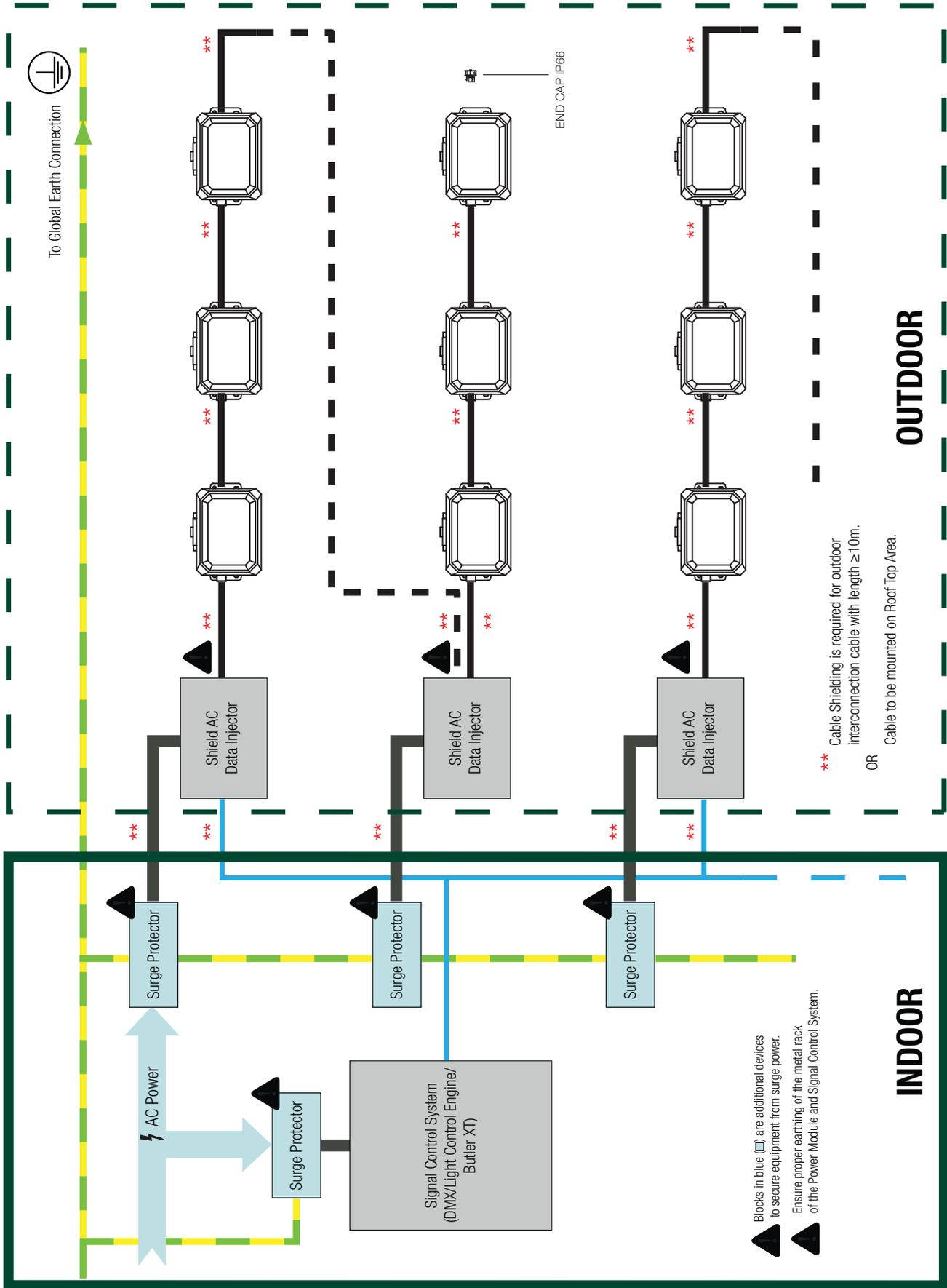
- Do not attempt to install or use a fixture until installation instructions and safety labels are fully understood.
- This product is designed for indoor and outdoor use.
- Ensure product operates within the specified temperature range.
- Do not attempt to open the product. Not user serviceable.
- Do not use a fixture if any part of it, or the power cables are damaged.
- Only use fixture for specified voltage, do not exceed.
- Always maintain connection to ensure waterproofing, keep all Dust Caps and End Caps in a container for reuse. Caution: Dust caps are NOT waterproof.
- DO NOT twist the connectors while still connected with base unit. Insert screwdriver in the locking clip hole to unlock the connector.
- Ensure locking clip is present and properly inserted on the connector when making a connection.
- If the fixture has been subjected to drastic temperature variances, for example, following transportation, do not connect the fixture until it has reached room temperature, as moisture condensation may cause electric shock and product damages.
- When installing the fixtures and system power supplies, please ensure they will not be exposed to moisture and extreme heat (and direct sunlight for outdoor products). Besides, keep a clean operating environment for the fixtures and system power supplies.
- Please study this Installation Guide thoroughly and check the latest Technical Specification Sheets available from our website www.traxontechnologies.com before setup.
- **Any non-compliance of the Installation Guide will void the Traxon warranty.**

2.1 Surge Protection

1. Individual Power Supply Surge Protective Device (SPD)
 - a. UL 1499 Type 1 or Type 2 SPD up to IEEE & ANSI C62.41.2 requirement should be installed in the main incoming area of the Power Source.
 - b. UL 1499 Type 3 SPD up to IEEE & ANSI C62.41.2 should be installed in individual PSU, individual LED Engine and individual Data Control Engine to protect the device from abnormal power surge and lightning surge.
2. Product Earthing
 - a. The exposed metal of the product body should be earthed with resistance less than 1 ohm to the Master Ground according to the ANSI/ESD S6.1 and IEEE standard 142-1982 requirement.
3. Mesh or Mechanical Fixture Earthing
 - a. All the mesh or mechanical fixture to fix the product should be earthed with less than 1 ohm resistance to Master Ground.
4. Shielding of the cable
 - a. Data Cables or Power Cables of length longer than 10m or Cables to be mounted on Roof Top Area should be shielded to protect the cable from picking up the induced surge from outside environment.
 - b. The shielding resistance to the Master Ground should be less than 1 ohm.
5. System working environment requirement
 - a. Traxon product should comply with IEC 61000 Power Surge and Fast Transient Test requirements.
 - b. Contractor should ensure that the ambient environment should comply with IEC 61000 requirements.
6. PSU and Data Control System Rack Earthing
 - a. All the racks for PSU and Data Control System should be properly earthed with less than 1 ohm resistance to Master Ground.

It is highly recommended that proper surge protection is implemented into the final installation. See FIG 1 (P. 8) for wiring details.

FIG 1: Surge Protection Block Diagram



3. INSTALLATION

3.1 Installation Sequence

Plan your installation before mounting any luminaires. The following should be considered for a successful installation.

- Installation distances and appropriate cable lengths.
- Appropriate anchor bolts where necessary to secure the luminaire.
- The number of fixtures and appropriate power sources.
- DMX controller to be used to control the luminaires.

3.1.1 Installation Checklist

1. Prepare cables and connectors.
2. Perform functional check of Luminaires.
3. Ensure all connection points are covered by their respective Dust Caps and/or Waterproof End Caps after testing.
4. Ensure all pre-installation checks laid out below have been followed.
5. Mount the luminaires on-site. If the installation is to be left uncompleted overnight, check all non-connected connection points on luminaires are covered with Waterproof End Caps.

Ensure all the Connection Cables, Luminaires with Power Supply Units and Data Injector Boxes are initially stored in a dry area to guarantee the complete sealing of the system from water before installation.

FIG 2: Cautions must be maintained in order to ensure waterproofing capabilities of entire system.



3.2 Functional Check Of The Products

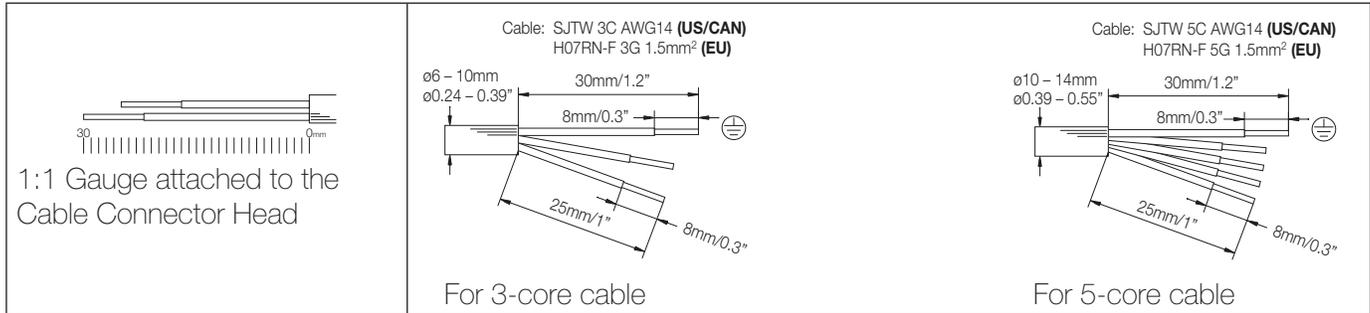
3.2.1 Sequence For Cable and Connector Preparation

1. Trim cable.
2. Plan for any possible bending of cables.
3. Fix cable ends with connectors.
4. Complete sealing of connectors by tightening screw nut with spanner/wrench.
5. Unplug Dust Caps/Waterproof End Caps and keep safe for reuse.
6. Connect Luminaires with Power Supply Units and Data Injector Boxes with connection cables in the daisy-chain manner described in the wiring diagram (P. 15).
7. Open Short Test should be performed to ensure cable wires are connected correctly. Recrimping of wires should be done if any failures occur.
8. Perform functional check on all Luminaires.
9. Report any functional defect found to your nearest Traxon Technologies office. DO NOT attempt to install a luminaire with functional defects on-site.

3.2.2 Cable Preparation And Connectors

Trim the cable outer sheath and insulation layer with the 1:1 wire trimming gauge (refer to the installation guide provided on the Traxon Tag attached to the Cable Connector Head).

FIG 3: Trimming the cable outer sheath

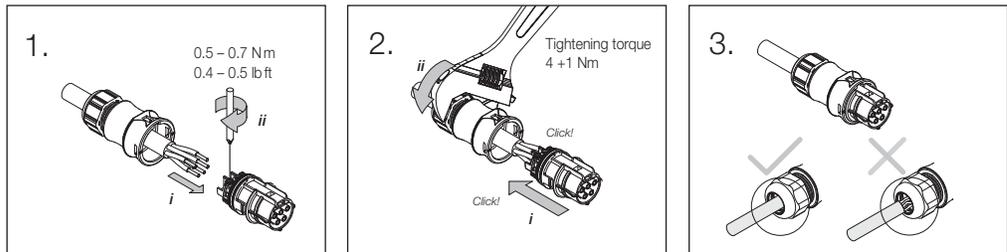
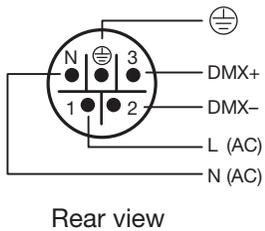


Fix the cable ends with connectors (refer to the installation guide provided on Traxon Tag attached to Cable Connector Head)

5-pin AC socket



Traxon part no.
XB.AC.2303000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.

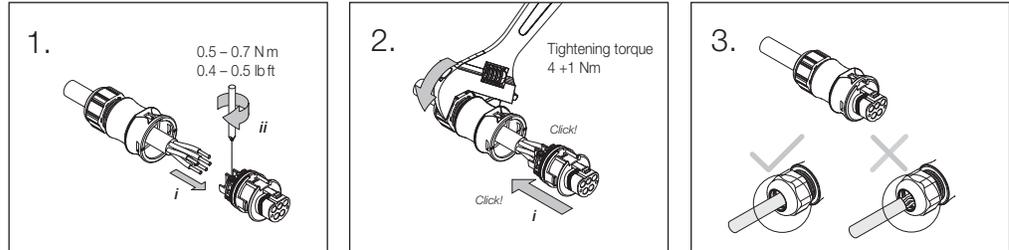
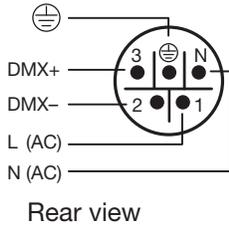


Ensure cable is not exposed.

5-pin AC plug



Traxon part no.
XB.AC.2302000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.

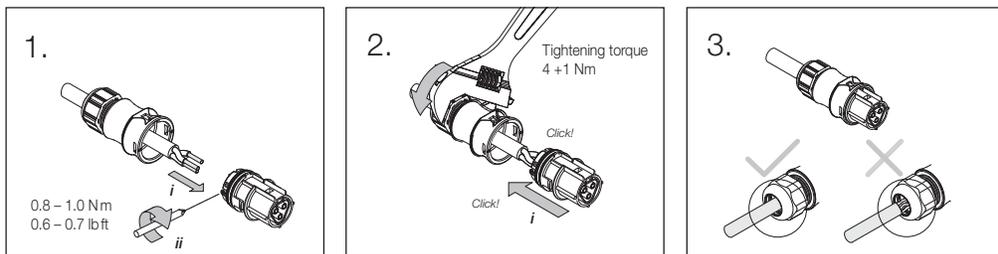
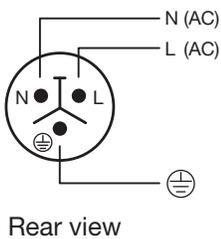


Ensure cable is not exposed.

3-pin AC socket



Traxon part no.
XB.AC.2306000



Use spanner/wrench to tighten cable connector screw nut to ensure waterproof seal.



Ensure cable is not exposed.

NOTE: Water leakage induced by a loosened screw nut (see step 2 of the above instructions) will not be under warranty by Traxon Technologies.

3.2.3 Cable Bending

Cable must NOT be bent below the Minimum Bending Radius (4x Cable Diameter) as specified by cable manufacturer and the Non-Bendable Length of 5cm near the connector end MUST be adhered to.

<p>Bending radius (for conductors) Note the minimum bending radius for conductors > 1.5mm². Pull forces on the contact points can be avoided by proceeding as follows: a – Bend the wire as required s – Cut the wire to length d – Strip the cable and wires</p>	
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3.2.4 Final Check of Connector

Connector D-Ring must be in correct position for proper waterproof function.

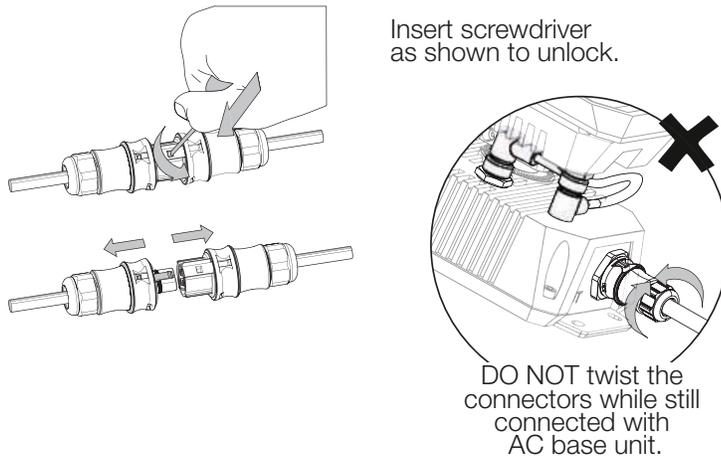
<p>D-Ring in correct position.</p>	
<p>D-Ring is displaced. The rubber ring is not in its intended position and will cause a weak point for water ingress.</p>	

3.3 Before On-Site Installation

Ensure all the Connection Cables are removed from the AC Base Unit with the correct method:

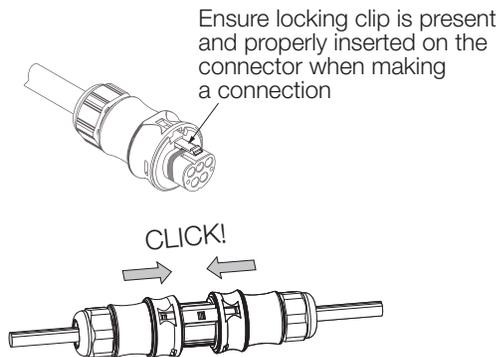
1. Insert Screwdriver as shown in FIG 4 to press down on the locking clip to unlock.
2. Pull the cable outwards from the connector head. DO NOT twist the connectors while still connected with the AC base unit.

FIG 4: Correct method to separate the Connectors



3. Transfer the locking clip from the Socket connector of the Luminaire back to the cable Plug connector (see section 3.2.2 Cable Preparation And Connectors P.10-11 to distinguish between Sockets and Plugs). Ensure the locking clip is inserted correctly to prevent the Connector Head from damage.

FIG 5: Locking the Cable Connectors

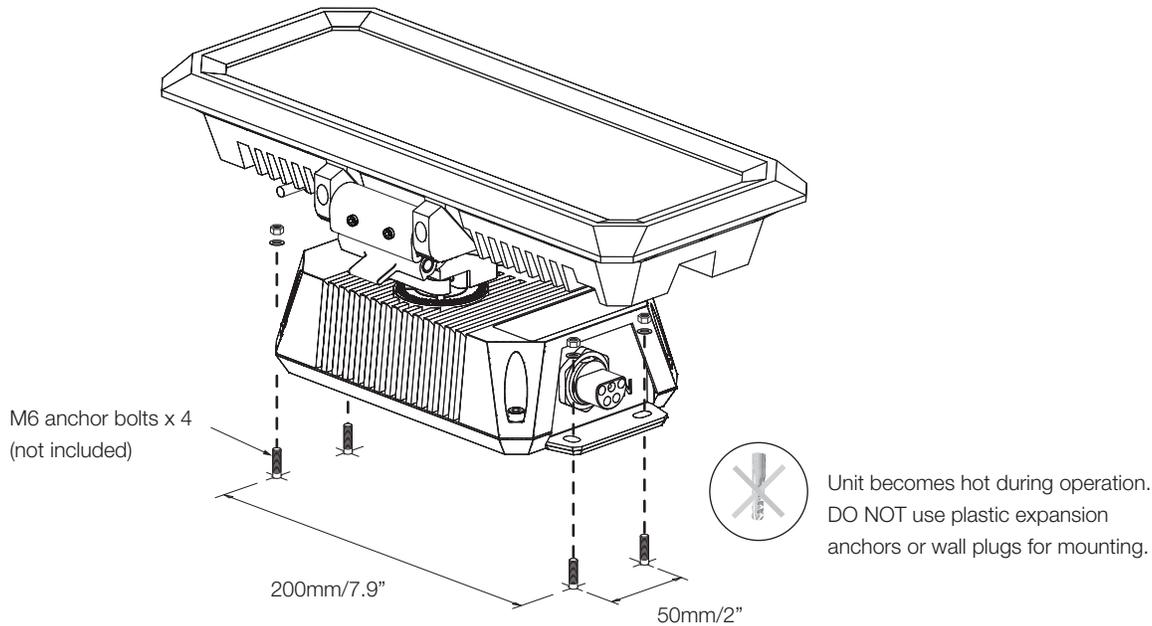


4. Re-connect all Dust Caps and Waterproof End Caps firmly to cover all fixture connection points one by one immediately after connection cable has been successfully disconnected. Please contact your local support team for extra Dust Caps and Waterproof End Caps if any are lost. Do not attempt to install the device if no Dust Caps or Waterproof End Caps are present/available.

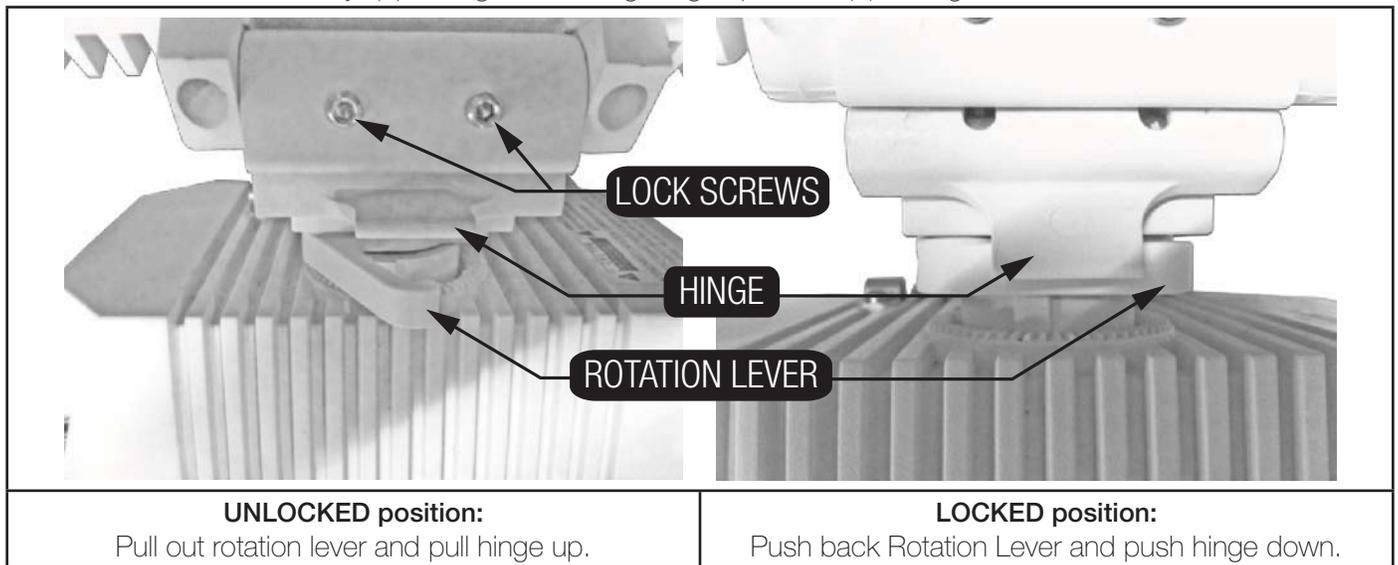
3.4 On-Site Installation

 Do not attempt installation in wet or severe weather conditions.

1. Mount the AC Base Unit with 4x M6 Anchor Bolts.



2. Release the two locks by: (1) Pulling the Locking Hinge upwards; (2) Pulling out Rotation Lever



3. Rotate the luminaire to desired position, then push the lever back to lock.
4. Tilt the luminaire head to the desired angle, then push the hinge down to lock. Tighten the lock screws.
5. Unplug the Dust Caps/Waterproof End Caps and keep them in a container for reuse.
6. Fully connect the luminaires with connection cables one after the other. Do not work on the other unit connections until the first unit under installation is properly connected.
7. Do not leave and expose Luminaires with Dust Cap plugged in under wet/raining or snowing environment as the Luminaire is not IP66 compliant unless properly connected.

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- Do not use product(s) if cables are damaged.
- Do not connect cables and connectors when wet or in wet area. Moisture on bare connectors can cause electric shock and damage to product(s).
- Do not use product(s) in extreme heat environment. Ensure there is sufficient airflow and use cool air circulation if required.
- Do not drop, knock, or shake product(s). Rough handling can damage the electronics and void the warranty.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean products. Wipe with a damp cloth on housings and a dry cloth on electronics to remove dirt or dust.
- Do not attempt to service or repair the product(s) unless done by an authorized service personnel. Contact your local Traxon office or distributor for details.

If the product is not working as specified, please contact your nearest authorized service center or Traxon Technologies office for assistance.

6. TECHNICAL SPECIFICATION

RGB

Color Range:	16.7 million additive RGB colors with variable intensity
Light Source:	18 / 36 High intensity power LEDs
Beam Angle:	10°, 20°, 30°, 40°, 40°x10°, open beam
Power Input:	100-240V AC 50/60Hz
Power Consumption:	28W max. / 53W max.
Weight:	3.3kg / 4.3kg
Operating Temperature:	-40°C to 60°C (-40°F to 140°F)

White

Color Temperature:	6500 K (Cold white)	2700 K (Warm white)
Light Source:	18 / 36 High intensity power LEDs	
Beam Angle:	10°, 20°, 30°, 40°, 40°x10°, open beam	
Power Input:	100-240V AC 50/60Hz	
Power Consumption:	28W max. / 53W max.	
Weight:	3.3kg / 4.3kg	
Operating Temperature:	-40°C to 60°C (-40°F to 140°F)	

As with all electronic devices, LED output degrades over time - a term called lumen depreciation. This also explains why it is nearly impossible to expect photometric performances of two LED products with different service life spans to be the same. The rate of LED degradation is a complex function of many factors such as operating efficiency, duration of continuous operation, and operating conditions (e.g. ambient temperature). Because LEDs are semiconductor devices, their performances are subject to inherent variability commonly found in semiconductor industry. To improve consistency in performance across the same product, LED manufacturers “sort” LEDs into bins according to different preset parameters, such as forward driving voltage, illumination, etc. Whereas binning is a sorting function, it is not a correction process. Inherent variability in the manufacturing process always results in different binning distributions according to different production lots. Traxon uses automatically binned LEDs on its products, thereby minimizing output variations within the model range.

7. WARRANTY STATEMENT

Traxon Technologies warrants its Products against material or workmanship defects for a period of three (3) years from date of purchase, provided that the purchased items are used under the conditions stated in this user manual.

Please refer www.traxontechnologies.com for all warranty terms and conditions.



Please check for the latest updates and changes on the Traxon website.

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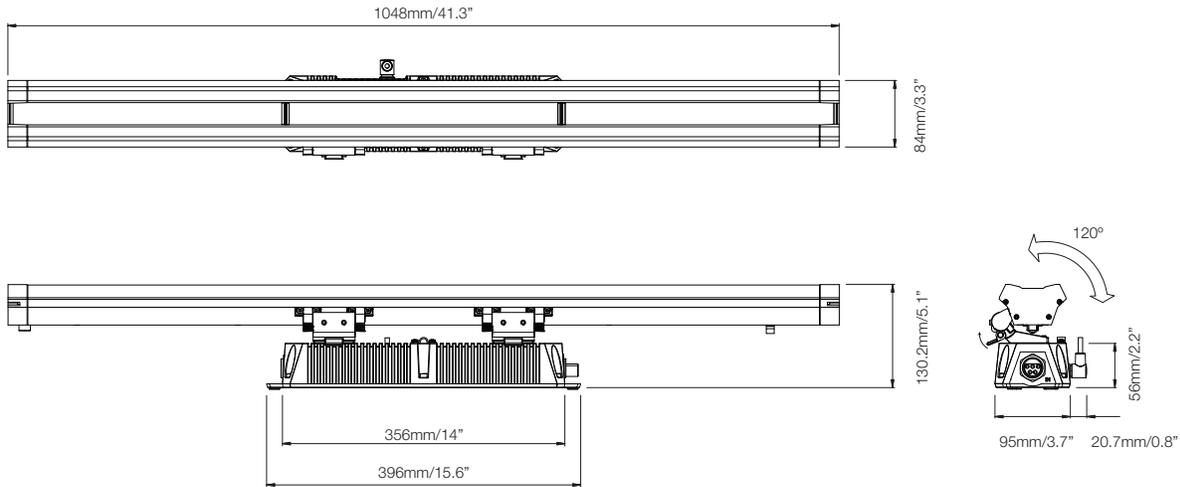
WWW.TRAXONTECHNOLOGIES.COM

An OSRAM Company

Mounting Guide

BEFORE MOUNTING, PLEASE READ THE INSTALLATION GUIDE FOR CABLING AND CONNECTION DETAILS.

LINER SHIELD AC XB-27



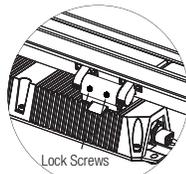
Suggested Mounting Method

Only to be installed outside arm's reach

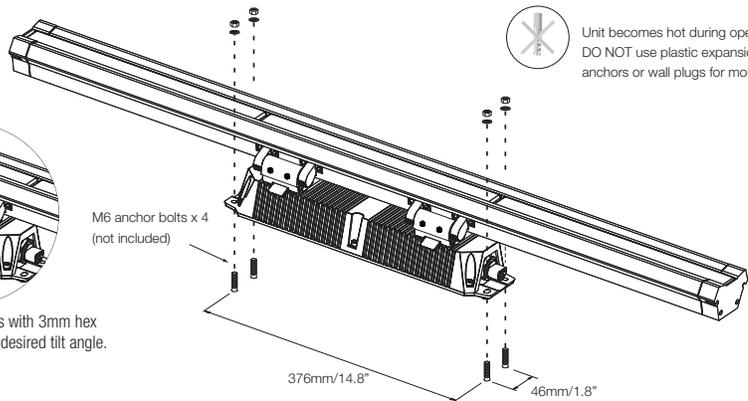
AC IN voltage	Maximum number of fixtures per Data Injector daisy chain*
220-240V	32
120V	29
100V	26

*Cable length to first fixture – 5m
Cable length between fixtures – 1m

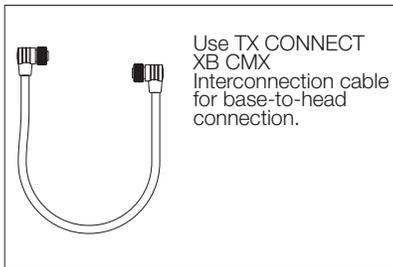
Base-to-base
Interconnection cable – SJTW 5C AWG14 (UL)
H07RN-F 5G 1.5mm² (CE)



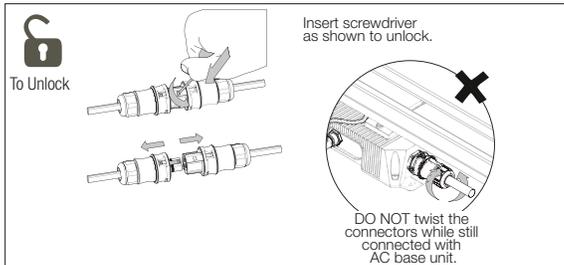
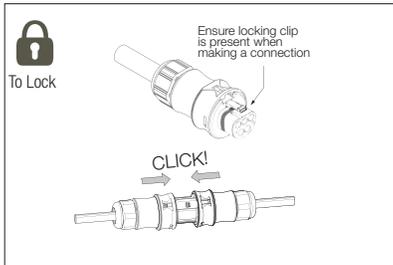
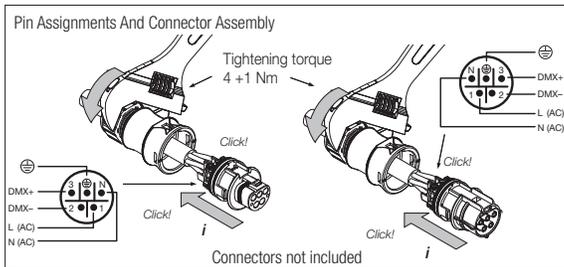
Tighten lock screws with 3mm hex key after acquiring desired tilt angle.



Unit becomes hot during operation. DO NOT use plastic expansion anchors or wall plugs for mounting.



Use TX CONNECT XB CMX Interconnection cable for base-to-head connection.



ANY PERSONS INSTALLING THIS PRODUCT SHOULD COMPLY WITH LOCAL STANDARDS AND REGULATIONS AND MUST BE QUALIFIED FOR THE HANDLING OF ELECTRICAL EQUIPMENT.

DO NOT ATTEMPT TO INSTALL OR USE A FIXTURE UNTIL INSTALLATION INSTRUCTIONS AND SAFETY LABELS ARE FULLY UNDERSTOOD.

DO NOT ATTEMPT TO OPEN THE PRODUCT. NOT USER SERVICEABLE.

DO NOT HOT SWAP FIXTURES. ENSURE POWER IS OFF BEFORE CONNECTING OR DISCONNECTING.

DO NOT USE A FIXTURE IF ANY PART OF IT, OR THE POWER CABLES ARE DAMAGED.

ONLY USE FIXTURE FOR SPECIFIED VOLTAGE, DO NOT EXCEED.



CAUTION: DUST CAP NOT WATERPROOF (IP66)



CAUTION: NOT WATERPROOF (IP66) UNLESS CONNECTED.



ALWAYS MAINTAIN CONNECTION TO ENSURE WATERPROOFING (IP66)



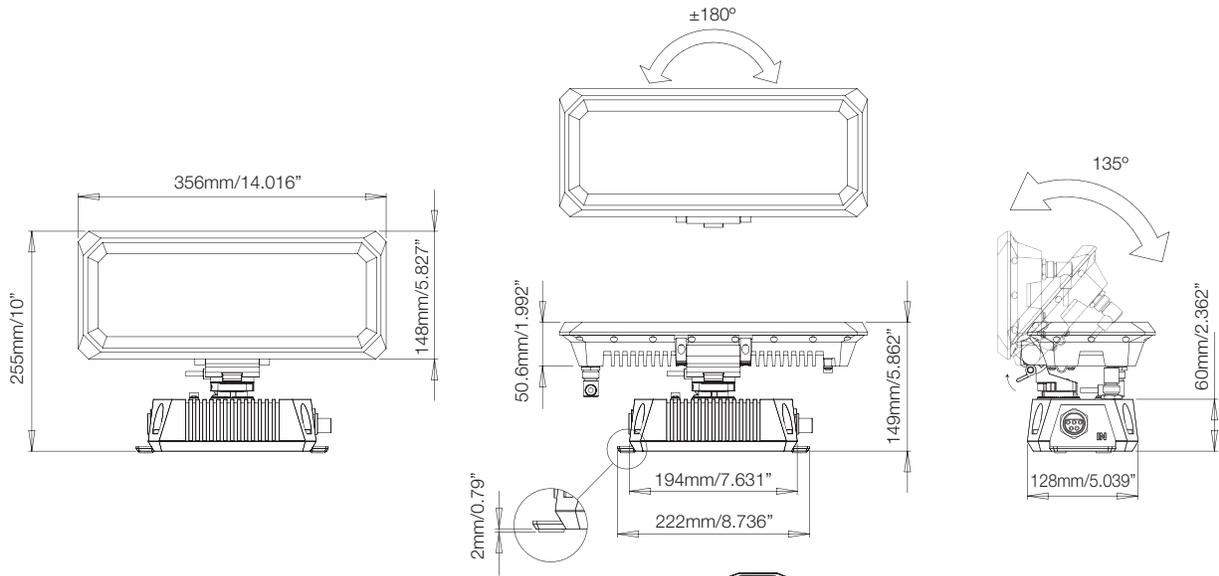
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traxon

Mounting Guide

BEFORE MOUNTING, PLEASE READ THE USER MANUAL FOR CABLING AND CONNECTION DETAILS.

WALL WASHER SHIELD AC XB-36



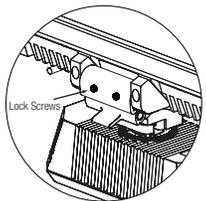
Suggested Mounting Method

Only to be installed outside arm's reach

AC IN voltage	Maximum number of fixtures per Data Injector daisy chain*
220-240V	32
120V	22
100V	19

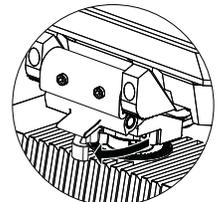
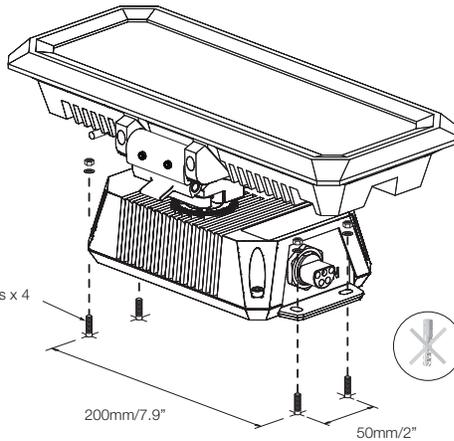
*Cable length to first fixture – 5m
Cable length between fixtures – 1m

Base-to-base
Interconnection cable – SJTW 5C AWG14 (UL)
H07RN-F 5G 1.5mm² (CE)



Tighten lock screws with 3mm hex key after acquiring desired tilt angle.

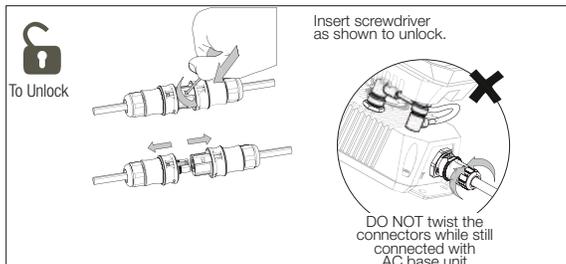
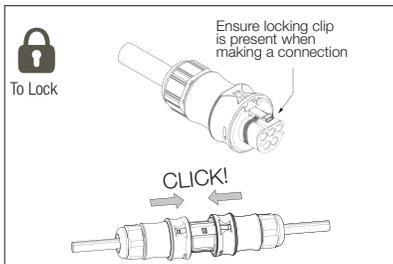
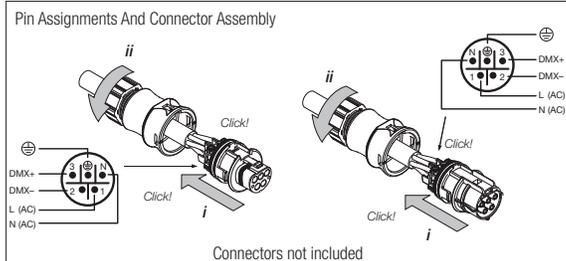
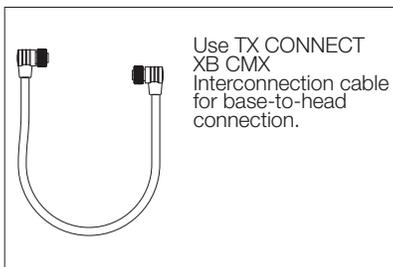
M6 anchor bolts x 4 (not included)



Release lever to allow rotation



Unit becomes hot during operation. DO NOT use plastic expansion anchors or wall plugs for mounting.



ANY PERSONS INSTALLING THIS PRODUCT SHOULD COMPLY WITH LOCAL STANDARDS AND REGULATIONS AND MUST BE QUALIFIED FOR THE HANDLING OF ELECTRICAL EQUIPMENT.

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ONLY USE FIXTURE FOR SPECIFIED VOLTAGE, DO NOT EXCEED.



Mounting Guide

XB SHIELD AC DATA INJECTOR

PLEASE READ THESE INSTRUCTIONS BEFORE INSTALLATION.

The Data Injector must be installed by a qualified electrician in accordance with all national and local electrical and construction codes and regulation.

If the external flexible cable or cord of this unit is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person in order to avoid a hazard.

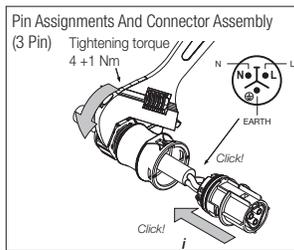
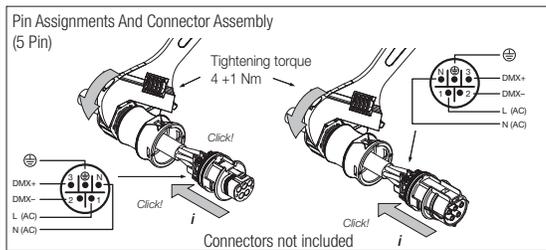
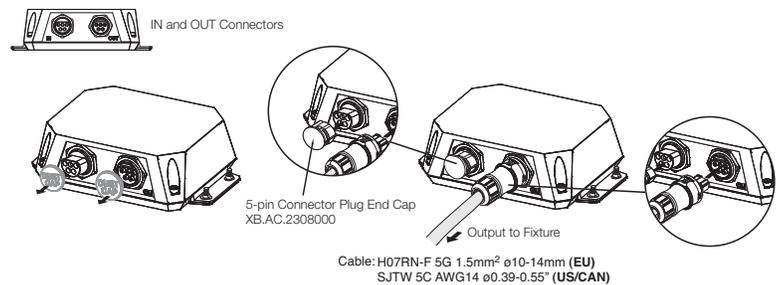
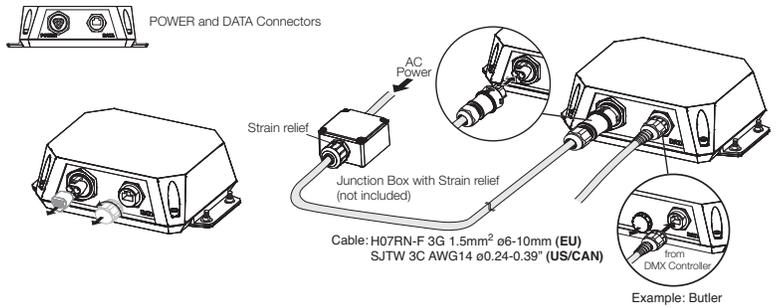
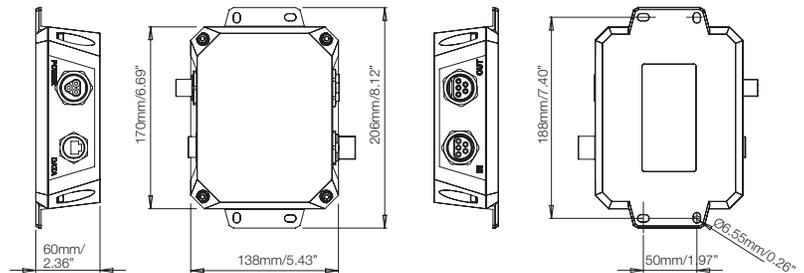
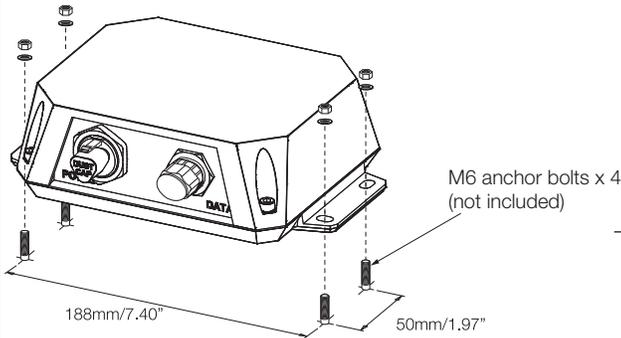
For PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated external to the equipment.

Input (POWER connector)
100 - 240V AC 50-60Hz 15A Max.

Output (OUT connector)
100 - 240V AC 50-50Hz 14.7A Max.

Suggested Mounting Method

Only to be installed outside arm's reach



ANY PERSONS INSTALLING THIS PRODUCT SHOULD COMPLY WITH LOCAL STANDARDS AND REGULATIONS AND MUST BE QUALIFIED FOR THE HANDLING OF ELECTRICAL EQUIPMENT.

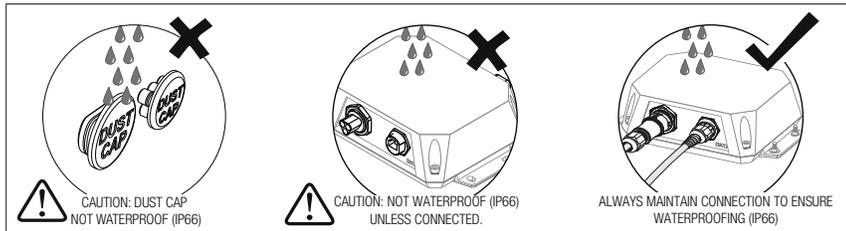
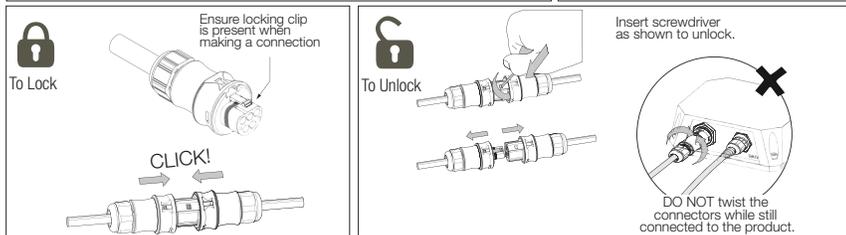
DO NOT ATTEMPT TO INSTALL UNTIL INSTALLATION INSTRUCTIONS AND SAFETY LABELS ARE FULLY UNDERSTOOD.

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DO NOT USE IF ANY PART OF IT, OR THE POWER CABLES ARE DAMAGED.

ONLY USE FOR SPECIFIED VOLTAGE, DO NOT EXCEED.



e:cue

LIGHTING CONTROL

Butler XT Setup Manual



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An OSRAM Company
Rev. 01.08.11



For a most recent version of this manual please visit:



Für die aktuellste Version dieses Manuals besuchen Sie bitte:

<http://www.ecue.com/download>

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Safety

	Only use the device in compliance with the environmental conditions specified in the technical data. Otherwise the unit may be damaged.
	To prevent the device from overheating, only operate it in well-ventilated environment. The Butler XT ventilation slots may not be obstructed. Otherwise the unit may overheat and fail.
	Device components can reach high temperatures! Let unit cool down after operation before mounting or removing unit to avoid burnings.
	Actions described in this manual may only be performed with special care by skilled personnel. Incorrect handling may damage the unit
	Repairs may only be carried out by authorized, specially trained personnel to ensure reliability. When in doubt, contact e:cue service.

Device overview

The features and versatile connectivity of the e:cue Butler XT, combined with the seamless integration into the e:cue lighting application suite (LAS) 5.0 software, provide solutions for all kinds of DMX control scenarios. The Butler XT works also as a gateway between the e:cue network backbone and the cutting edge e:cue glass touch user terminal series.

All this offers near infinite possibilities for all stand-alone lighting control requests. The 8 optically isolated digital inputs, a RS232 serial port, and built-in infrared receiver provide additional connectivity to third party systems and networks, while the e:bus port provides data and power to the e:cue glass touch devices.

Key features

- 1024 DMX channels, 2 DMX outputs
- Parallel play-back of (up to) 2 cuelists/shows
- Independent, nearly stepless dimming of each DMX output
- RDM-capability
- Supports up to 8 e:bus devices (T6, T12, T6r, ...)
- 2 free configurable buttons
- 5 LEDs and 7-segment LED-Display
- 100MBit e:net
- Serial communication (RS232) as remote control
- Built-in IR-receiver
- 8 free configurable digital inputs (max. 10 mA per contact)
- Micro SD card memory can save up to 99 cuelists for stand alone replay
- Built-in real time clock
- Astronomical clock
- Free configurable actions
- Master intensity controller

Delivery content

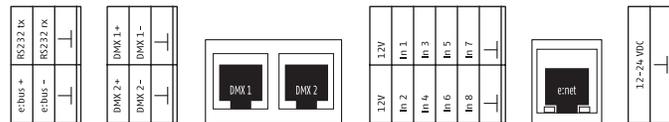
	Item number
• Butler XT device	160098
• Small screw driver	
• This setup manual	

Optional accessories:

• Butler XT accessory pack	160162
• DIN rail PSU	
• LAN cross cable 2 m	
• Serial cable	
• Software CD	
• RJ45 to XLR5p adapter cable	40005



Connector panel



Power

The Butler XT is able to be powered in several ways:

- External AC/DC Power Supply
- PoE (Power over Ethernet, IEEE 802.3af)
- DMX

External AC/DC Power Supply

Using an external power supply is recommended for all installations as only this way of powering enables the use of e:bus-terminals and gives the opportunity of using optically isolated DMX-signals and digital inputs. The power supply must meet the following requirements:

- Output Voltage: 24 VDC
- Output Current: ≥ 1.3 A

Power over Ethernet

When connected to a PoE-switch, the Butler XT registers as Class 1 power rating device. PoE is possible via

- a.) spare pairs 4+5 and 7+8 or b.) data pairs 1+2 and 3+6

Feel free to contact us if you need recommendations which PoE injector or switch is preferred to use.

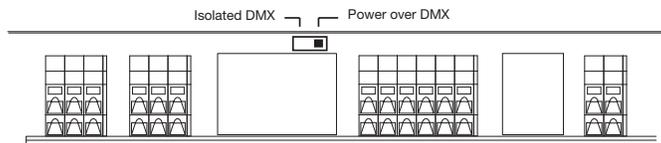
Power via DMX

The Butler XT can be powered with 24V DC via DMX.



When the Butler XT is powered over DMX, the e:bus interface will be disabled.

Please keep in mind that if using Power via DMX, the DMX-outputs are not optically isolated anymore and switch S1 needs to be set in the right orientation.



e:net

Use standard CAT5 (RJ45) network cabling for e:net.



Please remember that e:net requires an isolated network segment and cannot operate properly when using e.g. internet or video/audio streaming in the same network simultaneously.

Connecting the clamp terminals



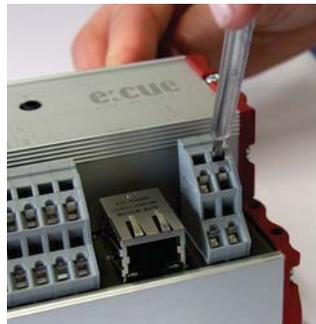
Butler XT terminals



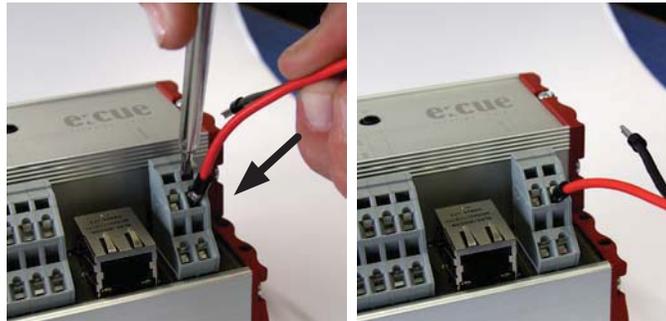
Use an electrostatic sensitive screw driver



Put the screw driver into one of the small slots above the contact you want to connect.



Push the screw driver into e slot and pull it upwards. The slot should open.



While holding the slot open, put the cable in. Once the cable is secured in the slot, release the screw driver.

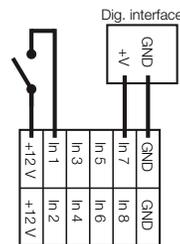
Check to make sure the cable is secured. The Butler XT is now ready to use.

Digital inputs

The Butler XT offers eight configurable optically isolated digital inputs for connectivity to separate systems/sensors. See connection diagram on the right below for details.

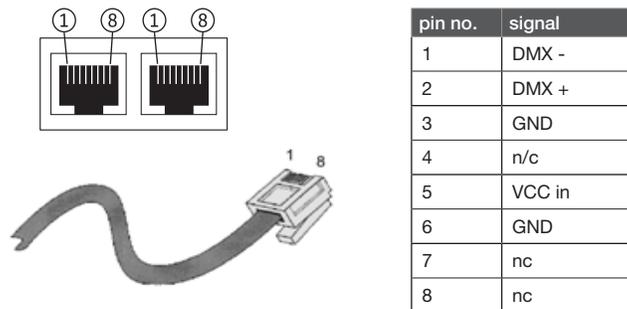


The input voltage range for the digital inputs is 9 to 24 V DC.



DMX

The DMX output is taken from the RJ45 connectors labeled „DMX1“ and „DMX2“ or via clamp contacts. To connect DMX using a XLR type plug, please use the adaptor cable item no. 40005 available as accessory or contact your nearest e:cue distributor for a suitable adaptor cable.



e:bus

The e:bus is a 2-wire bus system using clamp/screw terminal connectors to attach the wires safely and robust. The wiring between the devices is extremely flexible. In addition to the free topology design, you do not need to pay attention to polarities. As long as the two e:bus connectors of a user terminal are connected to the master unit's connectors, everything will work fine. The two e:bus connectors of a user terminal can be connected to the master unit's connectors either way. The terminal devices will recognize the polarity and configure themselves the proper way. Please refer to the "e:bus short introduction", available at www.ecue.de for more details about e:bus.

RS-232

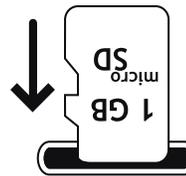
For communication between different systems the Butler XT offers an RS-232 interface (configuration: 9600 baud, 8 databits, no parity, 1 stopbit) The following commands are allowed:

Play cue list:	PCxx<CR>	xx = cue list number ¹
Pause/play:	PP<CR>	
Next cue:	NX<CR>	
Previous cue:	PV<CR>	
Set intensity:	INxxx<CR>	xxx = intensity in %

¹ e.g. PC02<CR> play cue list no. 02, PC10<CR> play cue list no. 10

Micro SD card

The Butler XT comes with a micro SD card and supports cards up to 2 GB. The Butler XT cannot operate if no micro SD card is present. As a typical show file and configuration files do not take up more than a few MB space, it is generally not necessary to replace the provided micro SD card with a bigger one.



If the micro SD card has been removed during operation and is restored, the show may be continued by pressing the system button on the device – otherwise you need to reboot.



Do not remove the SD card while the Butler XT is in operation!

Interface elements

Buttons

Keep the system button pressed only or in combination with button a or b until a function is displayed. When the button is released after the message begins to blink fast, the displayed function is executed.

Function	Key	Display message	Description
RESET	SYS	reS	Perform a system reset
DEFAULT	SYS+a	dEF	Set parameter to default
SELFTEST	SYS+b	SLF	Start the self test

Status LEDs

LED	Description
power	Butler XT is ready
e:bus power	e:bus power ok
error	System error
link	LAN link
act	LAN traffic

Display messages

Display	Message
	The Butler XT is in bootloader mode for firmware update.
	Butler XT plays cuelist #09 on output #1 Butler XT plays cuelist #13 on output #2 A = master mode, B = slave mode
	Butler XT is up, no cuelist available or startup event defined.
	e:bus power over current or over/under voltage, check e:bus and power supply, press system button to resume.
	e:bus error, check e:bus connections or call support office.
	SD card error, no SD card present, check CD card, press system button to resume.

Configuration

Basic configuration

Connect the Butler XT via a switch to a system running e:cue's Lightning Application Suite; start the Programmer. Select the Network tab in the status window in the upper left. Any Butler XT devices which are connected to the network should appear in the list. If they do not show up in the list, check if the IP address settings for your computer are correct and the network range is 192.168.123.*, the default address of any new Butler XT is 192.168.123.1. Please also make sure your fire wall does not prevent communication between the computer and the Butler XT. The Butler XT should become visible. Click on the Butler XT in the Network display, this opens the device configuration dialog:

Setup Manual - Butler XT

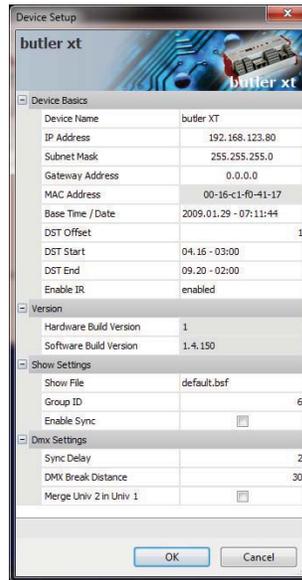
Here you can set all driver properties of the Butler XT, use the tabs to select the proper parameter range.

- Click the IP address – typically this should read 192.168.123.1 at this stage, when the Butler XT is still set to factory defaults. Assign a new IP address e.g. 192.168.123.11.
- Use the same procedure for the remaining network parameters:
Subnet Mask - usually 255.255.255.0
Gateway – not necessary
- Give the Butler XT a unique name.
- Set the base time, this is the time without DST correction, add shift and dates for DST begin and end.
- Do not modify DMX settings except you know what you are doing.
- See the following table for a complete overview of network parameters.
- Apply the changes with the Ok button

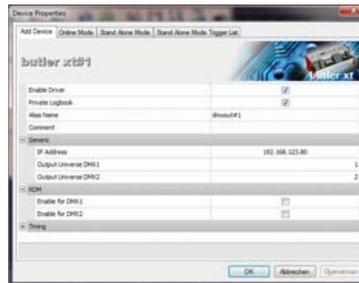
To add the Butler XT to the Programmer configuration start the Device Manager and execute the Automatic Setup Wizard. The Butler XT will be found and displayed:

Set the checkmark for the Butler XT to add it to your setup. Clear the checkmark for the e:bus scan if there are no e:bus components.

To set the driver properties for the Butler XT double-click the Butler XT in den device overview of the Device Manager.



Using this device setup dialog you can set the DMX universes as well as the required actions for standalone and online mode, additionally trigger conditions. One important trigger you should always define is the playing conditions when the Butler XT is switched on or when entering standalone mode.all parameters for the Butler XT.



When finished close the device setup dialog with Ok.

Connecting more than one Butler XT

In case you have several Butlers XT they need to be configured one at a time. Do not connect all of them to the network immediately! This is due to the fact that the devices all come with the same IP-address by factory default. If they are connected simultaneously an IP-address conflict will occur and configuration is not possible.

Instead, connect the Butlers XT one at a time. Connect the first Butler XT and assign a new IP-address to the device (e.g. 192.168.123.11). Repeat this sequence until all devices have been assigned with an individual IP-address. In a next step all devices can be hooked up to the connecting network.

Network parameters

Device Name	Description
Device Name	The device will be displayed with this name in the e:cue programmer.
IP address	The IP address of the device (Default: 192.168.123.1)
Subnet Mask	The netmask of the device (Default: 255.255.255.0)

Setup Manual - Butler XT

Gateway address	The default gateway of the device (Default: 192.168.123.100)
MAC address	The physical address of the device (read only)
Base Time / Date	The base time and date of the device. This is the time to which the Daylight Saving Time offset is added
DST Offset	Daylight Saving Time offset in hours
DST Start	The date and time when daylight saving starts
DST End	The date and time when daylight saving ends
Hardware Build Version	The hardware version (read only)
Software Build Version	The software version (read only)
Show File	The name of the showfile that contains the offline DMX data. (Default: default.bsf)
Group ID	The Butler XT group ID – used for master slave configuration
Enable Sync	Allow timecode output for group master in offline mode
Sync Delay	Delay in ms for master timecode output to compensate network latency.
DMX Break Distance	The distance between two DMX frames (Break to Break) in ms in offline mode

Firmware update

To update the firmware of the Butler XT proceed the following way:

- Start the Patchelore in the e:cue Lighting Application Suite
- In the list of found devices select the appropriate Butler XT.
- Press the right mouse button and select “Firmware”
- Select the file with the new firmware (*.bxt)
- After the download is complete the Butler XT will restart.
- The new firmware is available now.

Technical specifications

General specifications

The Butler XT is certified according to

- EN 55022, EN 55024, EN 60950



Item numbers	
Butler XT	160098
Butler XT accessory pack	160162
General specifications	
Dimensions	175 x 60 x 75 mm/6.89 x 2.36 x 2.95 inch
Weight	0.4 kg/0.88 lbs
Power	12-24 V DC/AC via terminals, PoE over RJ45
Operating / storage temp.	0 ... 40 °C/32° ... 104°F
Operating / storage hum.	0-80%, non-condensing
Protection class	IP20, SELV
Housing	Aluminium, plastic
Mounting	35 mm DIN rail
Certifications	CE
Max. start up time after voltage interruption	10 seconds
Engine specifications	
User interface	Buttons IR
System link	e:bus (clamp terminals) e:net (RJ45 Ethernet)
Outputs	DMX (RJ45, clamp terminals) e:bus (clamp terminals) e:net (RJ45) RS232 (clamp terminals)

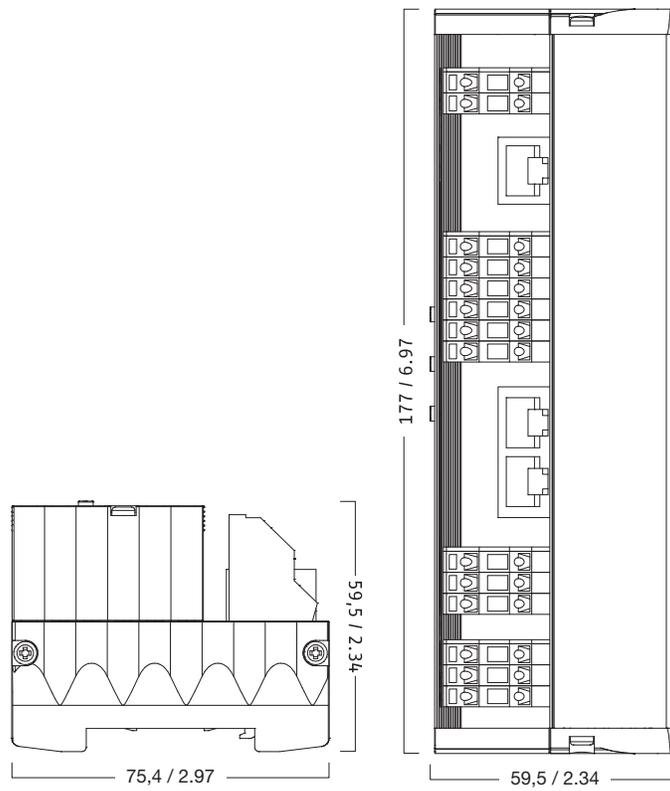
Setup Manual - Butler XT

Inputs	e:bus (clamp terminals) e:net (RJ45) RS-232 (clamp terminals) RDM (RJ45, clamp terminals) optically isolated digital inputs
Display	7-segment LED
Data storage	on micro SD card

e:net specification	
Connection	RJ45, 8P8C
Speed	100 MBit
POE capability	yes
DMX output specification	
Number of outputs	2 DMX universes, 1024 channels
Short circuit protection	yes, reversible
Over-voltage protection	yes
DMX operation	Acc. DMX 512A standard
Optical isolation	yes, 3 kV max.
e:bus specification	
Number of outputs	1 x clamp terminals
Short circuit protection	yes, reversible
Over-voltage protection	yes
Max. output current	800 mA
Max. # Glass Touches	8
Optical isolation	no
Digital inputs specification	
Number of inputs	8x clamp terminals
Optical isolation	yes, 3 kV max.
Max. voltage	24 V
Max. current per channel	10 mA
Short circuit protection	yes, reversible
Over-voltage protection	yes
RS-232	
Transfer rate	9600 baud
Configuration	8 bits, no parity, 1 stopbit
Optical isolation	yes, 3 kV

Dimensions

All dimensions in mm/inch



Published by e:cue control GmbH
Karl Schurz-Strasse 38
Paderborn, Germany

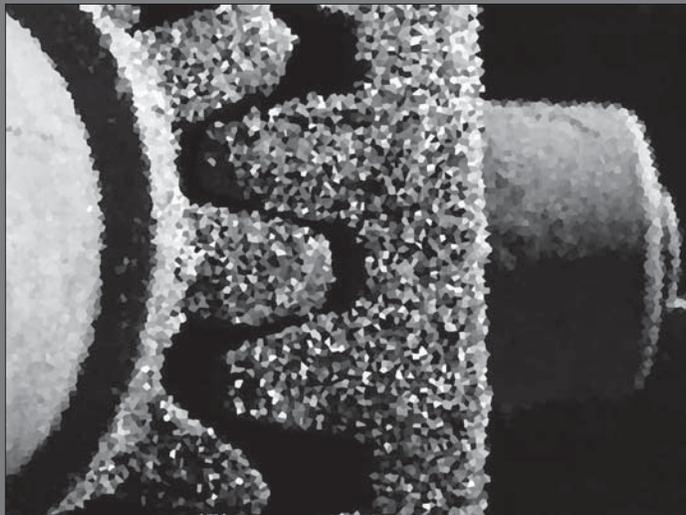
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traxone:cue



The e:bus system

User Manual

**Published by Traxon Technologies Europe GmbH
Karl Schurz-Strasse 38
Paderborn, Germany**

**e:bus User Manual
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Introduction

This document gives a short introduction to the e:bus system. e:bus is a bus system developed by Traxon Technologies Europe for secure, bi-directional and fast system link between e:bus enabled user terminals.

Advantages of the e:bus system

The e:bus networking platform offers several features for a simple installation and great reliability in real installations.

- e:bus is a self-organizing network. This simplifies configuration by a plug & play - like behaviour. The addressing happens automatically.
- Link power. User interfaces are directly powered over e:bus. Fewer wires make the hardware installation much easier.
- The connections are a very reliable and a stable communication basis with polarity-independent wiring.

At the end of this document, you can find a short comparison of e:bus with DALI and DMX based communication.

General information

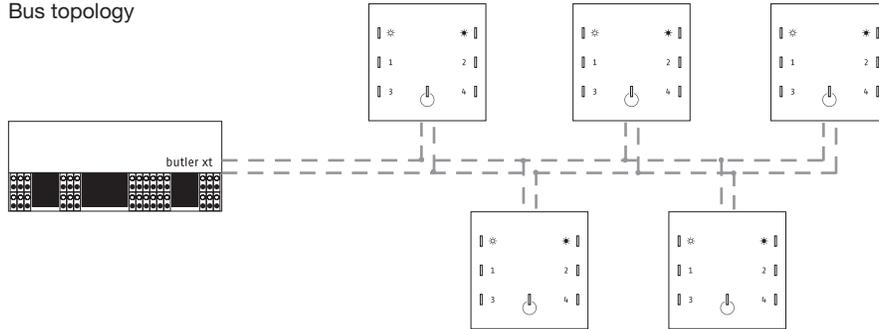
- Up to eight devices can be connected to the e:bus, organized by an additional master device.
- Free topology architecture allows the devices to be connected in combination of star, bus and tree structures.
- e:bus is designed for cable lengths of up to 400 meters, depending on cable type, topology and number of connected devices. A bus topology allows the largest cable length.
- Interfaces are powered via e:bus.
- Interfaces will be automatically registered and addressed.
- Defective units will not affect the communication between other devices.
- The maximum supply current of the Butler XT is 800 mA. All devices in one e:bus segment may not draw more than 800 mA in total.
- A maximum of two e:cue Glass Touchscreens is allowed.



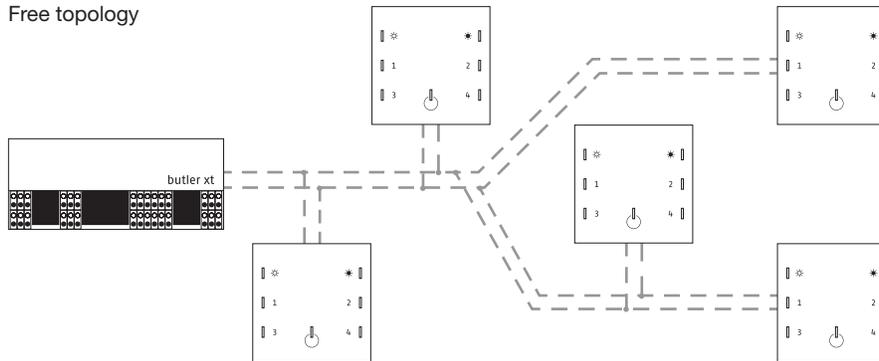
To remove an e:bus client it is not sufficient to just disconnect it. The Butler XT will try to poll it and ignores another device, connected in place. Instead, remove the client in the Programmer's Device Manager and run a Quick Update. Now the Butler XT will recognize another/new device.

Possible bus topologies

Bus topology



Free topology

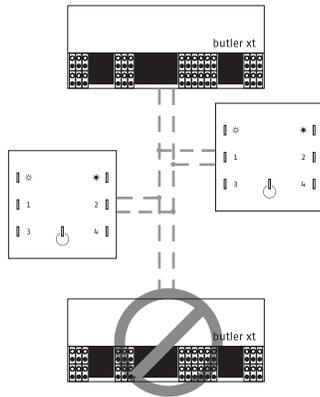


Wiring

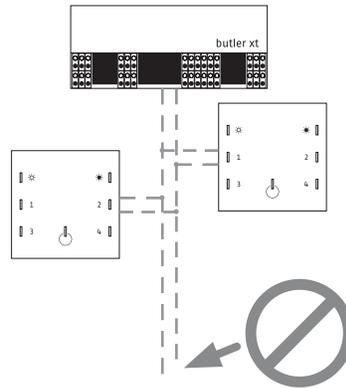
The e:bus is a 2-wire bus system using screw terminal connectors to attach the wires safely and robust. The wiring between the devices is extremely flexible. In addition to the free topology design, you do not need to pay attention to polarities. As long as the two e:bus connectors of a user terminal are connected to the master unit's connectors, regardless if a cable goes from + to + or from + to -, everything will work fine. The two e:bus connectors of a user terminal can be connected to the master unit's connectors either way. The terminal devices will recognize the polarity on their own and configure themselves the proper way.

Invalid configurations

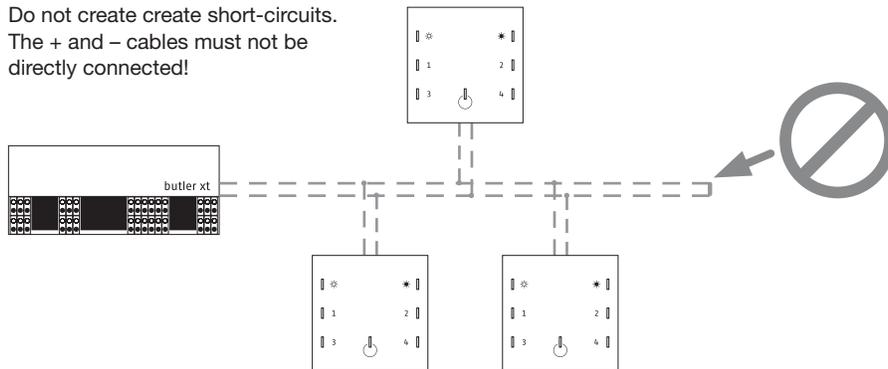
Do not add a second master to an e:bus network!



Do not leave any wires open! Open wires will cause signal reflections and therefore disrupt communication.



Do not create create short-circuits. The + and - cables must not be directly connected!



Cable types and lengths

Cable types

The maximum cable length is greatly dependent on device count, topology and cable types as well. Approved cable types for e:bus are AWG 16 (1.3 mm/0.051") twisted pair and AWG 24 (0.511 mm/0.02") Cat5 cables. The following table shows valuable key facts:

General run lengths

device count	AWG 16 (1,3 mm / 0.051") Twisted-Pair Cable		AWG 24 (0,511 mm / 0.02") Cat5 Cable	
	bus topology	free topology	bus topology	free topology
1	400 m/1312 feet	100 m/328 feet	400 m/1312 feet	100 m/328 feet
2	400 m/1312 feet	100 m/328 feet	268 m/879 feet	100 m/328 feet
4	400 m/1312 feet	100 m/328 feet	133 m/436 feet	100 m/328 feet
6	400 m/1312 feet	100 m/328 feet	88 m/288 feet	82 m/269 feet
8	400 m/1312 feet	100 m/328 feet	66 m/216 feet	61 m/200 feet

Special cabling conditions

Glass Touchscreen

For the Glass Touchscreen the values above are not valid. Instead, watch these requirements:

- Use 2 x 0.5 sqmm
- Use a direct connection from Butler XT to Glass Touchscreen, no branching.
- Maximum cable length is 100 m.

e:bus, DALI and DMX

DALI

Digital Addressable Lighting Interface (DALI) is a standard for control lighting in buildings. It was established as a successor for 0 ... 10 V lighting control systems, and as an open standard alternative to Digital Signal Interface (DSI), on which it is based. The DALI standard, which is specified in the IEC 60929 standard for fluorescent lamp ballasts, encompasses the communications protocol and electrical interface for lighting control networks.

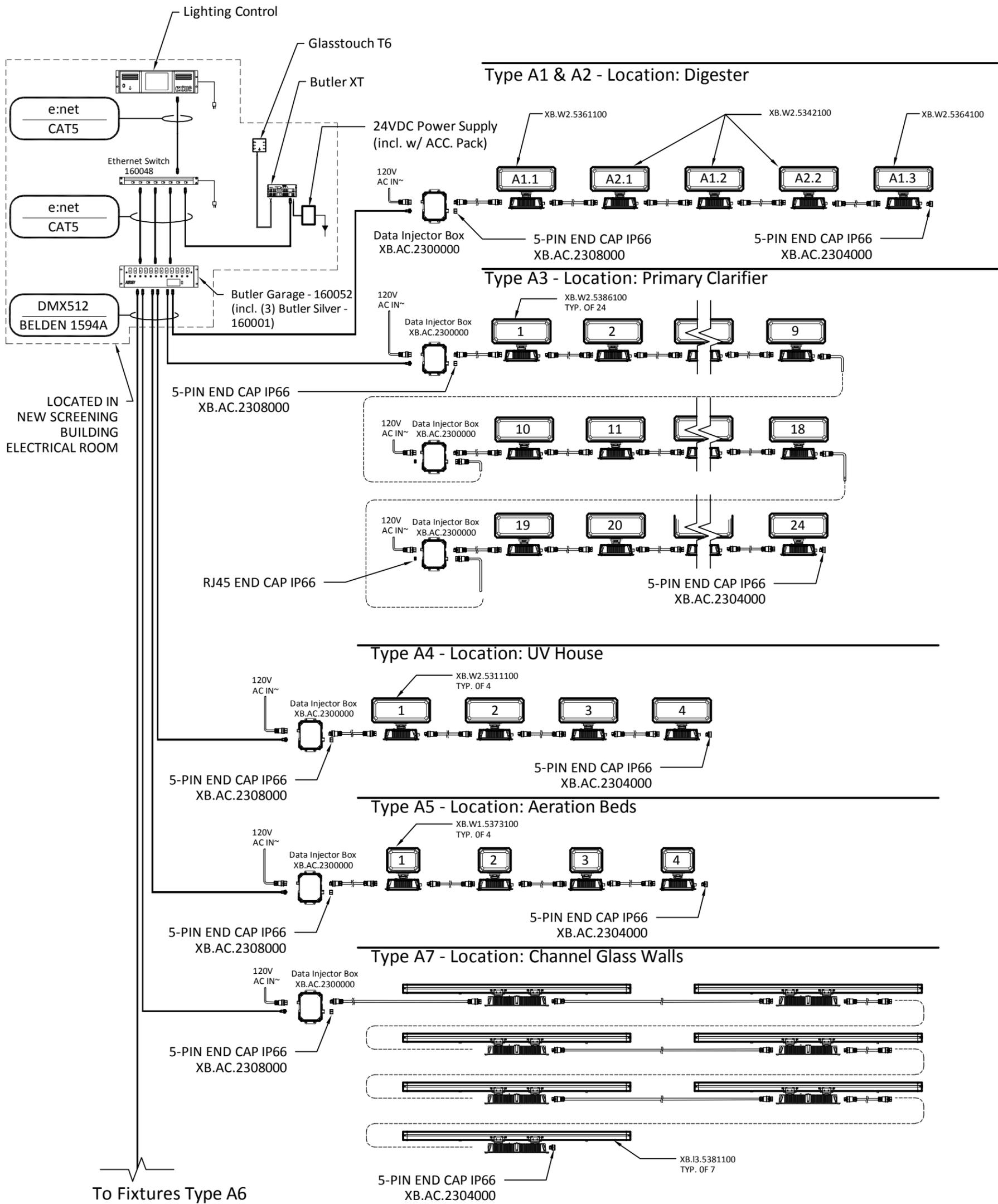
DMX

DMX512 (Digital Multiplex) is a standard for digital communication networks to control stage lighting and effects such as fog machines and moving lights. DMX512 employs EIA-485 differential signaling at its physical layer, in conjunction with a variable-size, packet based communication protocol at 250kBit/s. It is unidirectional and does not include automatic error checking and correction. DMX is the most used connection type in lighting control.

Feature	e:bus	DALI	DMX
Includes protocol	Y	Y	Y
Self-organizing network	Y	-	-
Free topology wiring	Y	Y	-
Link power	Y	-	-
Polarity-insensitive	Y	-	-
High-Speed signaling	Y	-	Y

Section 3

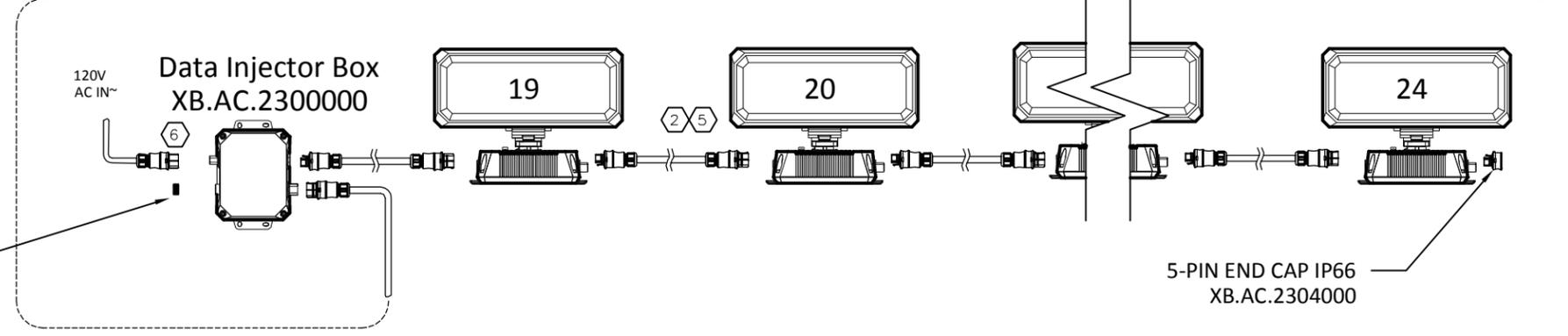
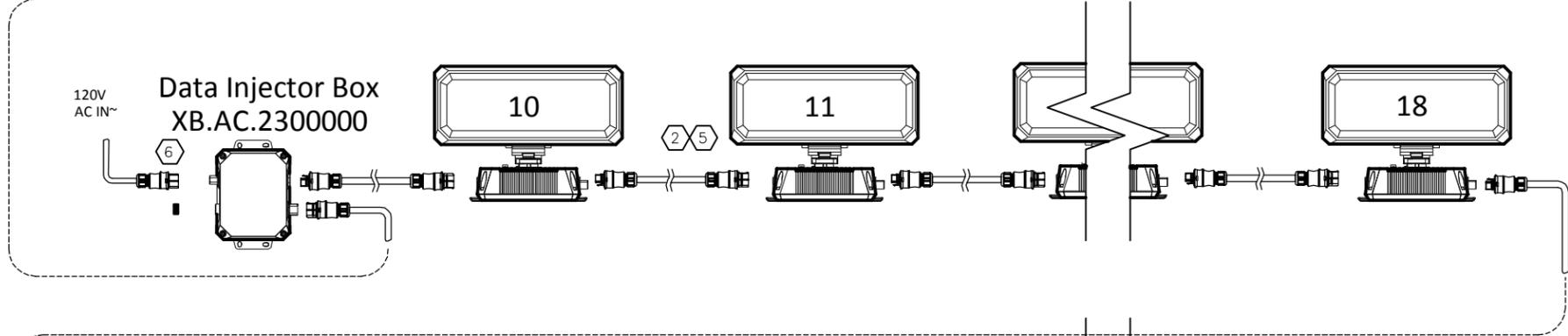
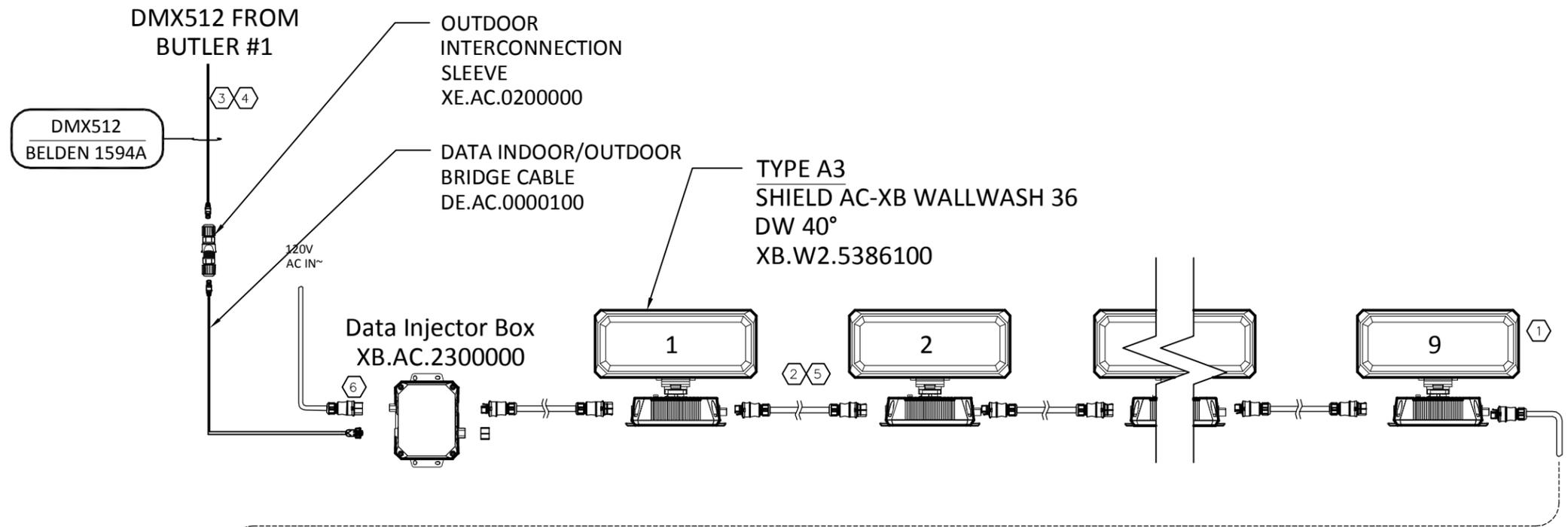
Submittal Package



SHEET NOTES

- ① Maximum number of 36-LED fixtures per run depends on AC IN voltage. Please refer to fixture documentation.
- ② Maximum distance between fixtures is 100m.
- ③ Maximum distance between Butler Silver and first fixture is 300m.
- ④ All CAT5 data cable to be furnished, installed, terminated and tested by the electrical contractor.
- ⑤ Fixture interconnection cable and connectors provided by Traxon. Cables assembled and installed by Electrical Contractor.
- ⑥ AC Input connector and cable supplied by Traxon. Cables assembled and installed by Electrical Contractor.

PROJECT: WENATCHEE WASTEWATER TREATMENT PLANT	LOCATION: WENATCHEE, WA	REV.	DATE 1/31/2012	BY JAS	REMARKS SUBMITTAL	<p>20 MURRAY HILL PARKWAY EAST RUTHERFORD, NJ 201.508.1570 [T] . 201.508.1589 [F] www.traxon-usa.com</p> <p><small>Traxon ecue is a solutions company. We are happy to provide whatever information and documentation is needed to clarify the system design and deepen understanding of our products. Please know, however, that our expertise is limited to our products only. Traxon ecue and its employees cannot be held responsible for decisions relating to fixture layout, lighting design, electrical wiring, structural engineering, or construction methods. In our documents, we may sometimes make suggestions or recommendations relating to the aforementioned disciplines, but they are merely suggestions. They must be reviewed by qualified professionals and incorporated into the construction documents of each relevant discipline. On that same note, we will make every effort to ensure that a system is installed and working properly. To that end, a system commissioning service may be listed on our quotations. As part of this service, a representative of Traxon ecue will ensure that our system is connected and configured correctly, and that all Traxon ecue components are functioning together properly. Declining the system commissioning service absolves Traxon ecue of any and all responsibility for the functioning of the finished system beyond the standard product warranty. It is the responsibility of the installing contractor to install all fixtures and control equipment in its intended location and to make all wire terminations. The installing contractor is also responsible for making any necessary adjustments to mounting and/or wiring as determined by the client or by Traxon ecue. Traxon ecue does not provide pre-rigging or pre-mounting of fixtures as part of its services, and cannot accurately quote third-party materials required for mounting/installation. Traxon ecue is not responsible for content (e.g. videos or lighting cues) unless it is specifically agreed upon and listed separately from standard system commissioning services in the project quotation. Traxon ecue is happy to support your team in every way we can, and we look forward to a beautiful and successful installation.</small></p> <p>© 2010 Traxon Technologies</p>
DATE: 1/31/2012	JOB NO:	FILE NAME: 2012-01-30_Wenatchee_TX101.dwg				
SHEET SIZE: ANSI B	SCALE: AS NOTED	DRAWN BY: JAS	CHECKED BY: JDB			
SHEET NUMBER: TX201	SHEET TITLE: WIRING DIAGRAM - OVERVIEW					



1 TYPE A3 WIRING
 TX203 SCALE: NTS

SHEET NOTES

- ① Maximum number of 36-LED fixtures per run depends on AC IN voltage. Please refer to fixture documentation.
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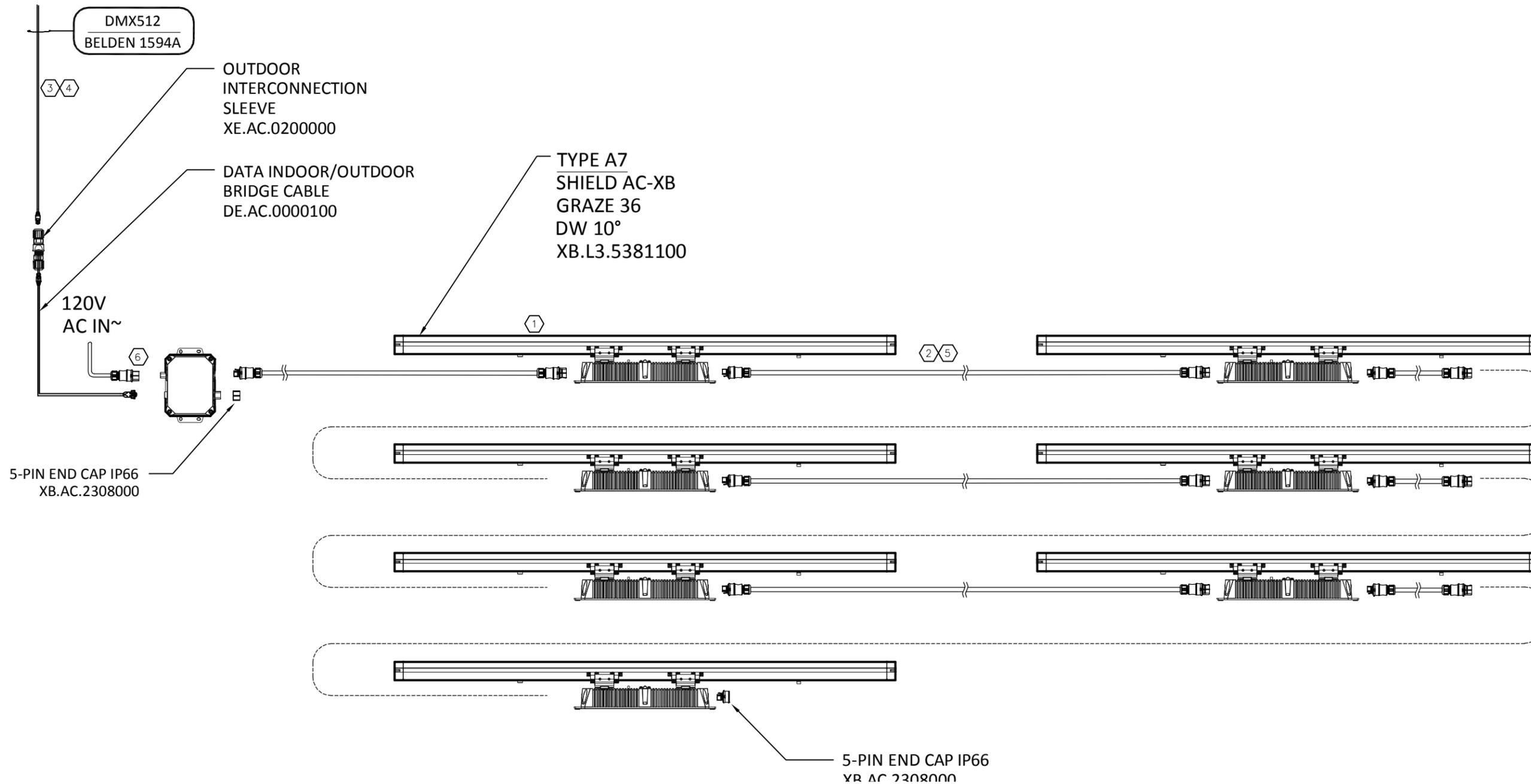
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SHEET NUMBER: TX203 SHEET SIZE: ANSIB SCALE: AS NOTED DRAWN BY: JAS CHECKED BY: JDB	SHEET TITLE: WIRING DIAGRAM - TYPE A3	



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DMX512 FROM
BUTLER #3



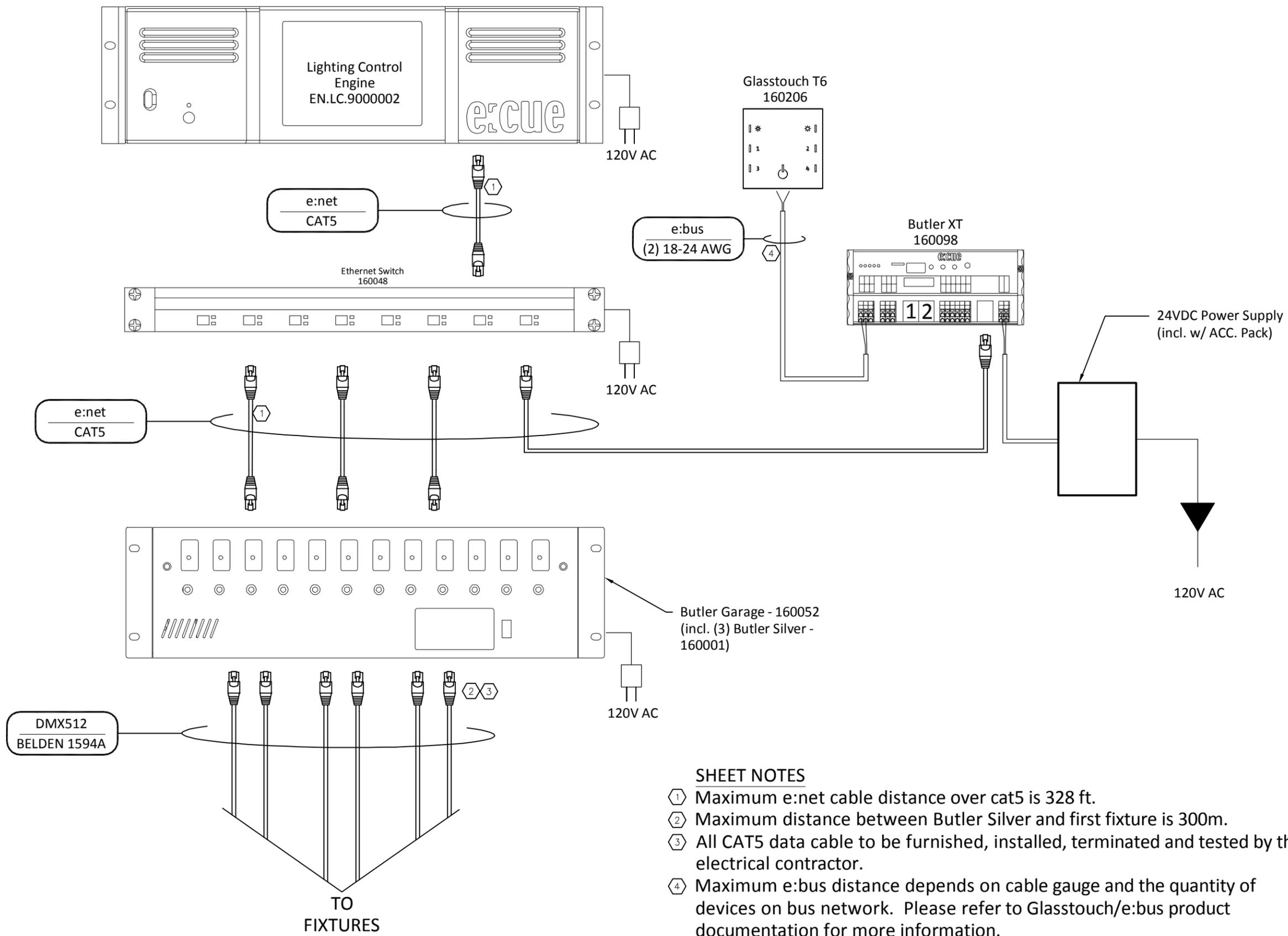
1 TYPE A7 WIRING
TX206 SCALE: NTS

SHEET NOTES

- ① Maximum number of 36-LED fixtures per run depends on AC IN voltage. Please refer to fixture documentation.
- ② Maximum distance between fixtures is 100m.
- ③ Maximum distance between Butler Silver and first fixture is 300m.
- ④ All CAT5 data cable to be furnished, installed, terminated and tested by the electrical contractor.
- ⑤ Fixture interconnection cable and connectors provided by Traxon. Cables assembled and installed by Electrical Contractor.
- ⑥ AC Input connector and cable supplied by Traxon. Cables assembled and installed by Electrical Contractor.

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DATE: 1/31/2012	JOB NO:	REV: A	REMARKS: JASXSJ00MITTAL
SHEET SIZE: ANSI B	SCALE: AS NOTED	DATE: 1/31/2012	BY: JASXSJ00MITTAL
SHEET NUMBER: TX206	DRAWN BY: JAS	FILE NAME: 2012-01-30_Wenatchee_TX101.dwg	
	CHECKED BY: JDB		
	SHEET TITLE: WIRING DIAGRAM - TYPE A7		

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- SHEET NOTES**
- ① Maximum e:net cable distance over cat5 is 328 ft.
 - ② Maximum distance between Butler Silver and first fixture is 300m.
 - ③ All CAT5 data cable to be furnished, installed, terminated and tested by the electrical contractor.
 - ④ Maximum e:bus distance depends on cable gauge and the quantity of devices on bus network. Please refer to Glasstouch/e:bus product documentation for more information.

1
TX301 **CONTROL RISER DIAGRAM**
 SCALE: NTS

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SHEET NUMBER:	TX301	CHECKED BY:	JDB
SCALE:	AS NOTED	SHEET TITLE:	CONTROL RISER DIAGRAM
REV.:	A	DATE:	1/31/2012
BY:	JAS	REMARKS:	SUBMITTAL