

ALW

CATENARY SPEC & DESIGN GUIDE

CORE | TUBE

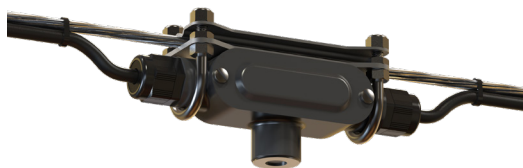


AVAILABLE PRODUCTS



| Family | Size [diameter] | Wet Location |
|-------------|-----------------|--------------|
| CORE/WL 4 | 4.5" [300mm] | ✓ |
| CORE/WL 6 | 6.0" [400mm] | ✓ |
| TUBE 300 LX | 4.5" [300mm] | ✓ |
| TUBE 400 LX | 6.0" [400mm] | ✓ |

BRINGING HIGH-QUALITY, ALW LED LIGHTING TO MODERN CATENARY APPLICATIONS



Offered in stealth black, the ALW catenary mounting accessory is a robust, weatherproof solution for mounting ALW luminaires on your catenary system to create inviting spaces.

ALW catenary mounting accessories support line voltage wiring with 0-10V dimming, phase dimming, or non-dim. The catenary mounting accessory is compatible with all CORE/WL and TUBE pendants, extending the mounting capabilities of our high-performance, wet-listed luminaires.

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STRUCTURAL ENGINEERING

Catenary cables and their associated fittings, attachment, anchors along with masts, poles, or other structural elements, are provided by others. The safe design of these products requires an analysis of many factors that are unique to your building, site and project goals and should be done by a licensed structural engineer.

ALW does not provide structural engineering services nor do we sell the main catenary cable or fittings.

ALW's Catenary Mounting System is designed to allow the installation of certain ALW luminaires and their required wiring on a catenary cable.

This guide will help you determine what components to order from ALW as well as what details to provide to your structural engineer.

TERMINOLOGY

Catenary Cable

A wire rope (aircraft cable) typically suspended between two horizontal points. The required diameter of the catenary cable and the amount of sag in the curve is determined by the horizontal span, load, cable tension and desired aesthetic. This will be calculated by your structural engineer.

Provided by others

Power Cord

18/3 or 18/5 feeder cord that runs in parallel with the catenary cable and powers the luminaires that are attached to the catenary cable.

Can be provided by ALW - order in bulk

Catenary Mounting Body

The device that provides both a means of mechanical attachment of the luminaire to the catenary cable and a wiring compartment to connect the luminaire wiring to the power cord.

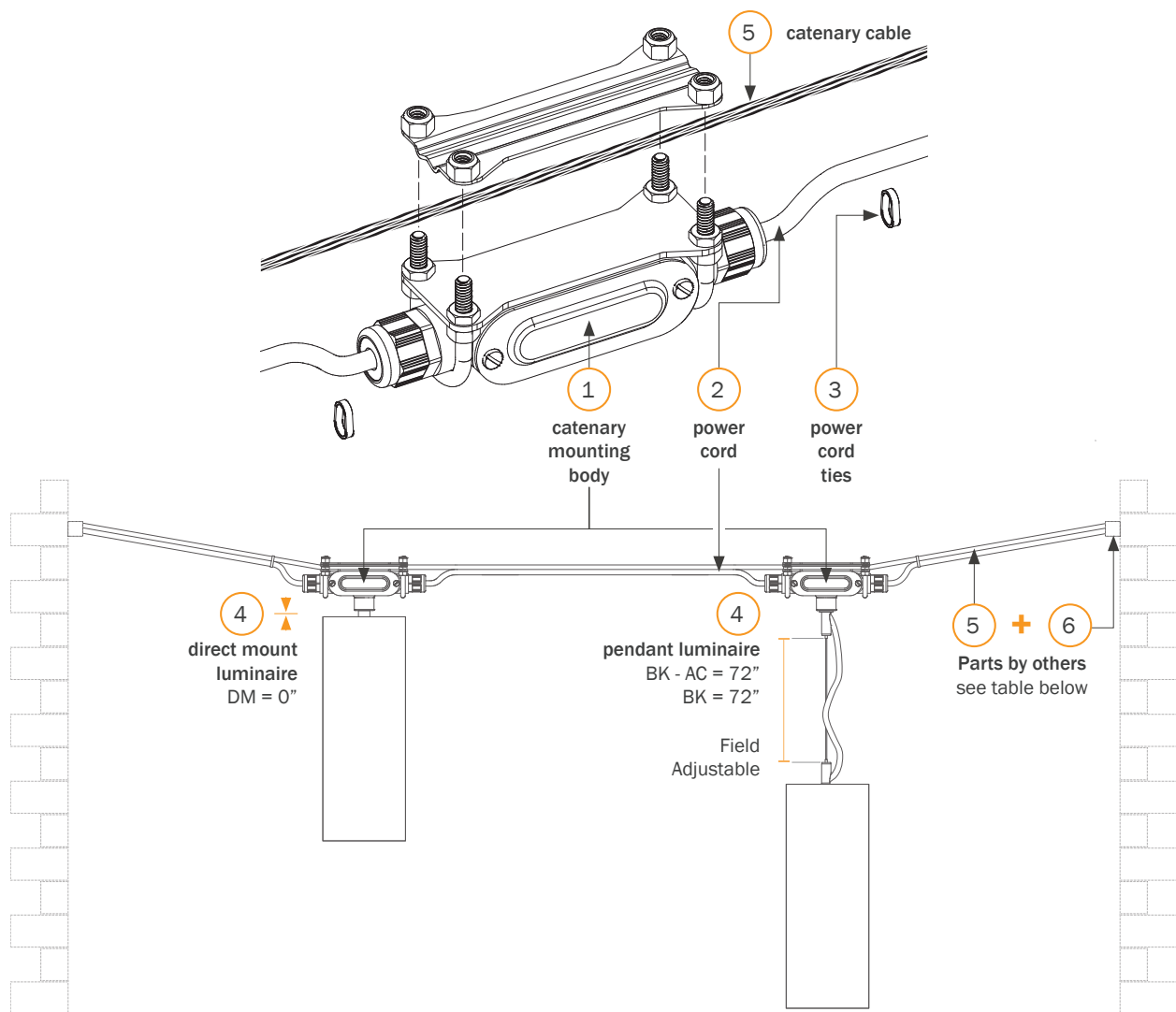
Provided by ALW - included with each fixture

Luminaire

The complete lighting fixture. Luminaires may be attached to the Catenary Mounting Body either directly, or as pendants with an aircraft cable suspension of up to 72" (field adjustable).

Provided by ALW

CATENARY SYSTEM COMPONENTS



Parts provided by ALW

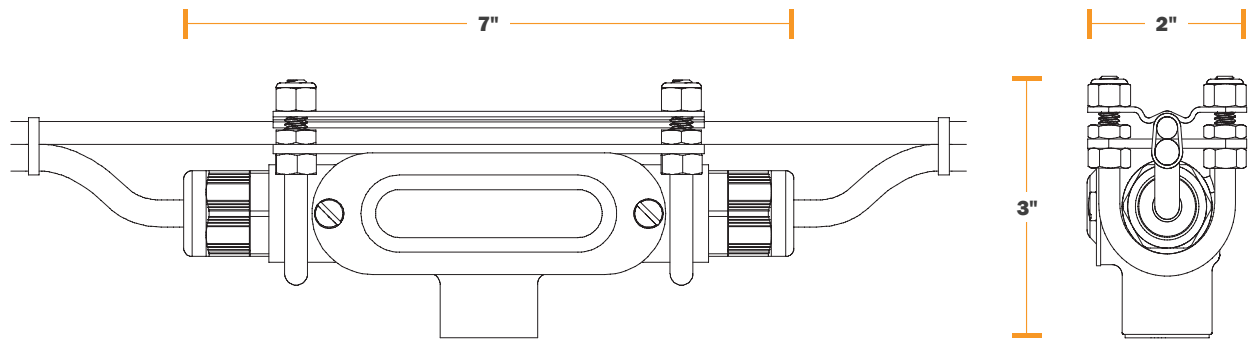
| Item# | Part Name | Description |
|-------|------------------------|--|
| 1 | Catenary Mounting Body | Quick connect, UL listed wiring compartment to attach ALW fixtures |
| 2 | Power Cord | Black, UV-stable, wet location, 18/3 or 18/5 (optional - order separately) |
| 3 | Power Cord Ties | Stainless steel or nylon (optional - order separately) |
| 4 | Direct Mount Luminaire | Directly connected to the Catenary Mounting Body |
| | Pendant Luminaire | Suspended w/ aircraft cable to the Catenary Mounting Body, length = 72" (field adjustable) |

Parts provided by Other Vendors

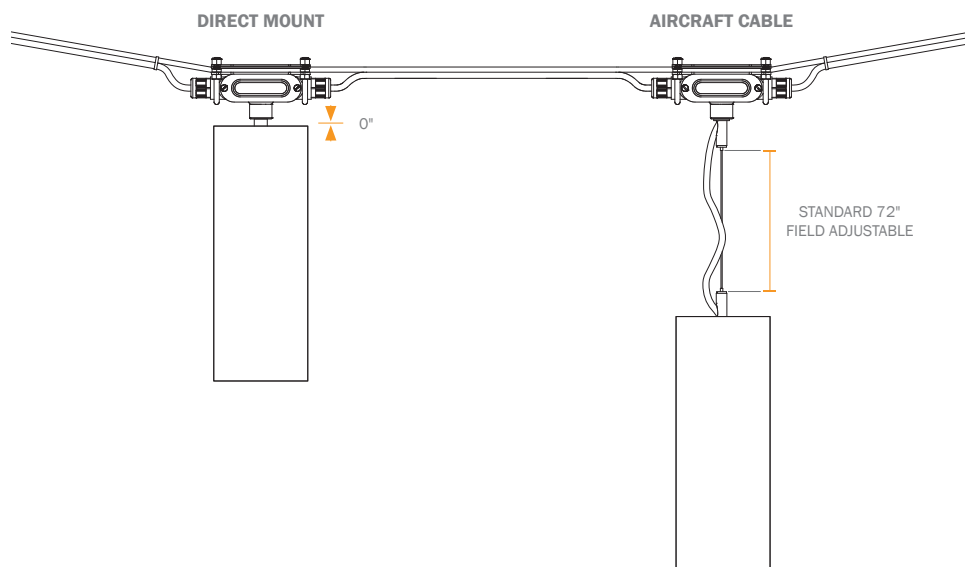
| Item# | Part Name | Description |
|-------|------------------------|--|
| 5 | Catenary Cable | Metal, structural support cable |
| 6 | Catenary Cable Anchors | Fittings for attachment to the building or structural mast |

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CATENARY MOUNTING SPECIFICATIONS



- Dimensions: 7" x 3" x 2"
- Weight: 1 lb. [0.45 kg]
- UL Listed wiring compartment
- Standard finish: BK = Stealth Black
- Die-cast copper-free aluminum with epoxy powder coating.
All stainless steel hardware.
- Compatible with Catenary cable diameter range: 1/8" - 5/16" [3 - 8mm].
Larger cable diameters upon request.
- Power cord diameter clamping range: 0.2 - 0.47" [5 - 12mm].
(power cord supplied by customer or purchased from ALW)
- Compatible with CORE/WL and TUBE luminaires
- Supports Direct Mount & Aircraft Cable suspension



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FAQ

Q: Can I use the Catenary Mounting System with any lighting fixture?

A: ALW's Catenary Mounting Solution is only ETL Listed for use with the specific ALW luminaires shown in this guide.

Q: Can ALW design the catenary cable system for us?

A: No. The safe design of these products requires an analysis of many factors that are unique to your building, site and project goals and should be done by a licensed structural engineer.

Q: Can I buy the catenary cable components from ALW?

A: No. The catenary cable and its required fittings should be specified by your structural engineer and sourced locally, typically from a wire rope supplier.

Q: What information do I need to provide to my structural engineer?

A: At a minimum, your structural engineer will need to know:

- The location of the catenary system.
- The support structures at each end of the catenary cable (building, pole, etc.)
- The acceptable amount of sag in the catenary cable.
- Worst case wind loading and other environmental factors.
- The number, size, weight and location of luminaires on the catenary cable.
- The EPA (Effective Projected Area) for the luminaires.

Q: Where can I find the size and weight information for a specific fixture?

A: Refer to the specification section on most current data sheet for that fixture.

Q: Where can I find the EPA (Effective Projected Area) for the luminaires?

A: $EPA = (\text{Maximum Cross Sectional Area, in square feet}) \times (\text{Drag Coefficient})$. The maximum cross sectional area is simply the maximum width x the maximum height of the fixture, expressed in square feet. The worst-case Drag Coefficient is 1.2.

Example:

Calculate the EPA for a CORE/WL 6

Fixture height = 15" (shell) = 1.25'

Fixture width = 6" = 0.5'

$EPA = 1.25' \times 0.5' \times 1.2 = 0.75$ square feet

Q: What's the maximum number of fixtures I can put on a single catenary cable?

A: Physically, it depends on the design of the catenary cable. Please confer with your structural engineer.

Electrically, It is limited by the size of the power cable, it's branch circuit, and your local AHJ. Refer to Sec. 400.5(A) and (B) of the NEC for guidance on the ampacity of flexible cords.

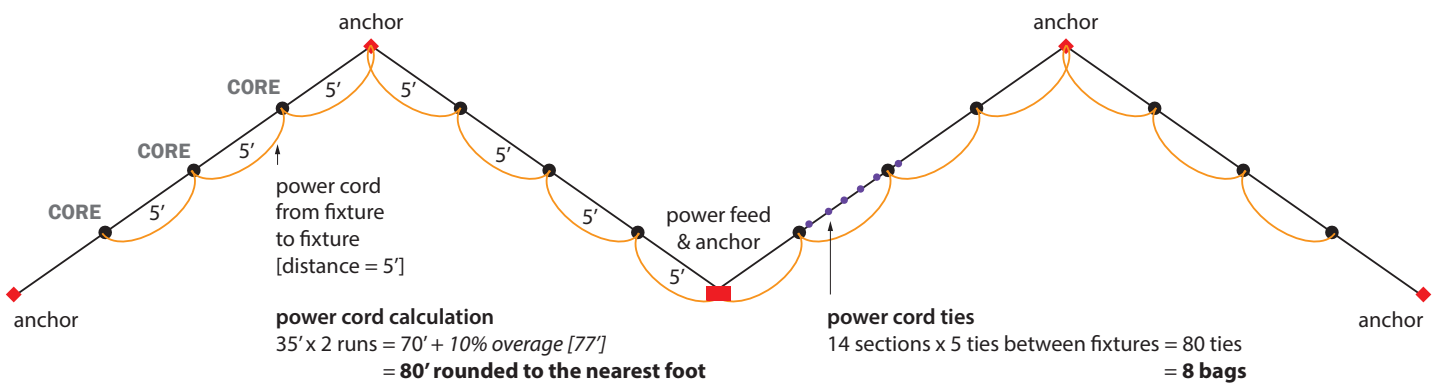
Specifically, NEC Table 400.5(A)(1) shows a maximum ampacity of 7A for the 18/3 or 18/5 power cord that ALW supplies with a catenary system.

The maximum power consumption for any ALW fixture can be found on it's data sheet.

EXAMPLE: TUBE W/ 12" DIFFUSER



1 draw schematic of layout



2 specify fixture count & ordering logic

CORE/WL 4 [4.5" DIAMETER]

| Product Code | Output | CRI | CCT | Reflector | Optical Accessory | Driver Location | Dimming | Shell Height | Shell Color | Suspension | Suspension Option | Catenary Mounting Solution |
|------------------|---|--------------------|--------------------------|----------------------------------|--|-----------------|-------------------------|-----------------|-------------------------------------|-------------------------------|---------------------|----------------------------|
| CRP4/WL | 20 | 83 | 40 | 20 | NN | N | N | L | TB | BK | AC | CAT |
| CRP4/WL = Round | 07 = 700lm 10 = 950lm | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K | 10 = 10° 20 = 20° | NN = None HL = Honeycomb Louver | N = Internal | N = None P10 = Phase | L = 12.2" Shell | XX = Standard finish ZZ = Custom | BK = 72" DM = Direct Mount | AC = Aircraft Cable | |
| CSP4/WL = Square | 13 = 1300lm 20 = 2000lm 30 = 3000lm | | 35 = 3500K 40 = 4000K | 40 = 40° 60 = 60° 80 = 80° | DF = Diffusion Lens LS = Linear Spread Lens | | V10 = 0-10V | | | | | |
| | | | | | WW = Wall Wash | | | | | | | |

3 calculate power cord & ties for entire system

POWER CORD

| FT. | Part #: | Details: | Specs: |
|----------------------|----------|---------------------------------|----------------------|
| <input type="text"/> | 202-0033 | 18/3, non-dim and phase dimming | 1.2 oz./ft [112 g/m] |
| <input type="text"/> | 202-0034 | 18/5, 0-10V dimming | 1.7 oz./ft [157 g/m] |

We recommend you add 10% to your total power cord length when ordering. Included in quote as separate line item.

CORD TIES

| FT. | Part #: | Details: |
|----------------------|----------|--|
| <input type="text"/> | 408-0031 | Stainless Steel (1 bag = bundles of 10) |
| <input type="text"/> | 408-0032 | Nylon, Black, UV-Resistant (1 bag = bundles of 10) |

We recommend 1 bag per 10 FT. when ordering. Included in quote as separate line item.

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Job Name _____

PO # _____

Type _____

CATENARY ORDERING LOGIC: CORE WET LOCATION

CORE/WL 4 [4.5" DIAMETER]

| Product Code | Output | CRI | CCT | Reflector | Optical Accessory | Driver Location | Dimming | Shell Height | Shell Color | Suspension | Suspension Option | Catenary Mounting Solution |
|------------------|--|--------------------|--------------------------|-------------------------------------|--|-----------------|-------------------------|-----------------|-------------------------------------|---|----------------------------------|----------------------------|
| | | | | | | N | | L | | | | CAT |
| CRP4/WL = Round | 07 = 700lm 10 = 950lm | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K | 10 = 10° ^{2,3} 20 = 20° | NN = None HL = Honeycomb Louver | N = Internal | N = None P10 = Phase | L = 12.2" Shell | XX = Standard finish ZZ = Custom | BK = 72° ⁴ DM = Direct Mount ⁷ | AC = Aircraft Cable ⁵ | |
| CSP4/WL = Square | 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ | | 35 = 3500K 40 = 4000K | 40 = 40° 60 = 60° 80 = 80° | DF = Diffusion Lens LS = Linear Spread Lens WW = Wall Wash | | V10 = 0-10V | | | | | |

CORE/WL 6 [6.0" DIAMETER]

| Product Code | Output | CRI | CCT | Reflector | Optical Accessory | Driver Location | Dimming | Shell Height | Shell Color | Suspension | Suspension Option | Catenary Mounting Solution |
|------------------|--|--------------------|--------------------------|-------------------------------------|--|-----------------|-------------------------|-----------------|-------------------------------------|---|----------------------------------|----------------------------|
| | | | | | | N | | L | | | | CAT |
| CRP6/WL = Round | 07 = 700lm 10 = 950lm | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K | 10 = 10° ^{2,3} 20 = 20° | NN = None HL = Honeycomb Louver | N = Internal | N = None P10 = Phase | L = 12.2" Shell | XX = Standard finish ZZ = Custom | BK = 72° ⁴ DM = Direct Mount ⁷ | AC = Aircraft Cable ⁵ | |
| CSP6/WL = Square | 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ 40 = 4000lm ¹ | | 35 = 3500K 40 = 4000K | 40 = 40° 60 = 60° 80 = 80° | DF = Diffusion Lens LS = Linear Spread Lens WW = Wall Wash | | V10 = 0-10V | | | | | |

CORE/WL 4 CUTOUT [4.5" DIAMETER]

| Product Code | Output | CRI | CCT | Reflector | Optical Accessory | Driver Location | Dimming | Shell Cutout | Heat Sink Finish | Shell Color | Suspension | Suspension Option | Catenary Mounting Solution |
|--------------|--|--------------------|--------------------------|---|---|-----------------|--|--|-------------------------------------|-------------------------------------|---|----------------------------------|----------------------------|
| CCP4/WL | | | | | | N | | | | | | | CAT |
| | 07 = 700lm 10 = 950lm 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K | 10 = 10° ^{2,3} 20 = 20° 40 = 40° 60 = 60° 80 = 80° | NN = None HL = Honeycomb Louver DF = Diffusion Lens LS = Linear Spread Lens BF = Baffle WW = Wall Wash | N = Internal | N = None P10 = Phase V10 = 0-10V | R = Round S = Square D = Dual Z = Custom ⁶ | XX = Standard finish ZZ = Custom | XX = Standard finish ZZ = Custom | BK = 72° ⁴ DM = Direct Mount ⁷ | AC = Aircraft Cable ⁵ | |

CORE/WL 6 CUTOUT [6.0" DIAMETER]

| Product Code | Output | CRI | CCT | Reflector | Optical Accessory | Driver Location | Dimming | Shell Cutout | Heat Sink Finish | Shell Color | Suspension | Suspension Option | Catenary Mounting Solution |
|--------------|--|--------------------|--------------------------|---|---|-----------------|--|--|-------------------------------------|-------------------------------------|---|----------------------------------|----------------------------|
| CCP6/WL | | | | | | N | | | | | | | CAT |
| | 07 = 700lm 10 = 950lm 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ 40 = 4000lm ¹ | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K | 10 = 10° ^{2,3} 20 = 20° 40 = 40° 60 = 60° 80 = 80° | NN = None HL = Honeycomb Louver DF = Diffusion Lens LS = Linear Spread Lens BF = Baffle WW = Wall Wash | N = Internal | N = None P10 = Phase V10 = 0-10V | R = Round S = Square D = Dual Z = Custom ⁶ | XX = Standard finish ZZ = Custom | XX = Standard finish ZZ = Custom | BK = 72° ⁴ DM = Direct Mount ⁷ | AC = Aircraft Cable ⁵ | |

¹Available for 83CRI only.
²Available for ≤1300lm @ 98CRI.
³Available for ≤2000lm @ 83CRI.
⁴Standard cord and cord w/ aircraft cable, field adjustable.
⁵Consult factory for custom cutout options.
⁶Available for 83CRI only.
⁷Direct Mount is specific to catenary fixtures. See page 4 for details.

CONTINUES ON NEXT PAGE →

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PROJECT INFO - page 2 of 2

Job Name _____

PO # _____

Type _____

CATENARY ORDERING LOGIC: TUBE WET LOCATION

TUBE LX 300 [4.5" DIAMETER]

| Product Code | Driver Location | Dimming | Location | Output | CRI | CCT | Tube Length | Shell Color | Suspension | Catenary Mounting Solution |
|--------------|-----------------|------------------------------------|----------|--|---------------------------------|--|---|-------------------------------------|---|----------------------------|
| T3LP | N | | W | | | | | | | CAT |
| | N = Internal | N = None P = Phase V = 0-10V | W = Wet | 07 = 700lm 10 = 950lm 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ | 83 = 83 98 = 98 ² | 27 = 2700K 30 = 3000K 35 = 3500K 40 = 4000K | 22 = 22" 46 = 46" 70 = 70" 94 = 94" ZZ = Custom | XX = Standard finish ZZ = Custom | BK = 72" ⁴ BK/AC = 72" ⁴ DM = Direct Mount ⁷ | |

TUBE LX 400 [6.0" DIAMETER]

| Product Code | Driver Location | Dimming | Location | Output | CRI | CCT | Tube Length | Shell Color | Suspension | Catenary Mounting Solution |
|--------------|-----------------|------------------------------------|----------|--|--------------------|--|---|-------------------------------------|---|----------------------------|
| T4LP | N | | W | | | | | | | CAT |
| | N = Internal | N = None P = Phase V = 0-10V | W = Wet | 07 = 700lm 10 = 950lm 13 = 1300lm 20 = 2000lm 30 = 3000lm ¹ 40 = 4000lm ¹ 50 = 5000lm ¹ | 83 = 83 98 = 98 | 27 = 2700K 30 = 3000K 35 = 3500K 40 = 4000K | 22 = 22" 46 = 46" 70 = 70" 94 = 94" ZZ = Custom | XX = Standard finish ZZ = Custom | BK = 72" ⁴ BK/AC = 72" ⁴ DM = Direct Mount ⁷ | |

CATENARY ACCESSORIES

POWER CORD

| FT. | Part #: | Details: | Specs: |
|-----|-----------------|---------------------------------|----------------------|
| | 202-0033 | 18/3, non-dim and phase dimming | 1.2 oz./ft [112 g/m] |
| | 202-0034 | 18/5, 0-10V dimming | 1.7 oz./ft [157 g/m] |

We recommend you add 10% to your total power cord length when ordering. Included in quote as separate line item.

CORD TIES

| FT. | Part #: | Details: |
|-----|-----------------|--|
| | 408-0031 | Stainless Steel (1 bag = bundles of 10) |
| | 408-0032 | Nylon, Black, UV-Resistant (1 bag = bundles of 10) |

We recommend 1 bag per 10 FT. when ordering. Included in quote as separate line item.

¹Available for 83CRI only.

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³Available for ≤2000lm @ 83CRI.

⁴Standard cord and cord w/ aircraft cable, field adjustable.

⁵Consult factory for custom cutout options.

⁶Available for 83CRI only.

⁷Direct Mount is specific to catenary fixtures. See page 4 for details.

Technical Support

Visit our website for more details: www.alwusa.com

Email: CustomerService@alwusa.com

Phone: 1.510.489.2530 (Option 4)

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