



Aperture w/ EcoPlus Installation Instructions

Installation Packet Includes:

Aperture w/ EcoPlus Installation Instructions

Drop Ceiling and Hard Ceiling Cross-Sections included

One of three Custom EcoPlus Electrical Packets

Custom EcoPlus Electrical Packet (24PS HLG)

Custom EcoPlus Electrical Packet (HLG)

Custom EcoPlus Electrical Packet (Fixture Only)

Luminous SkyTile Installation

SkyTile Layout

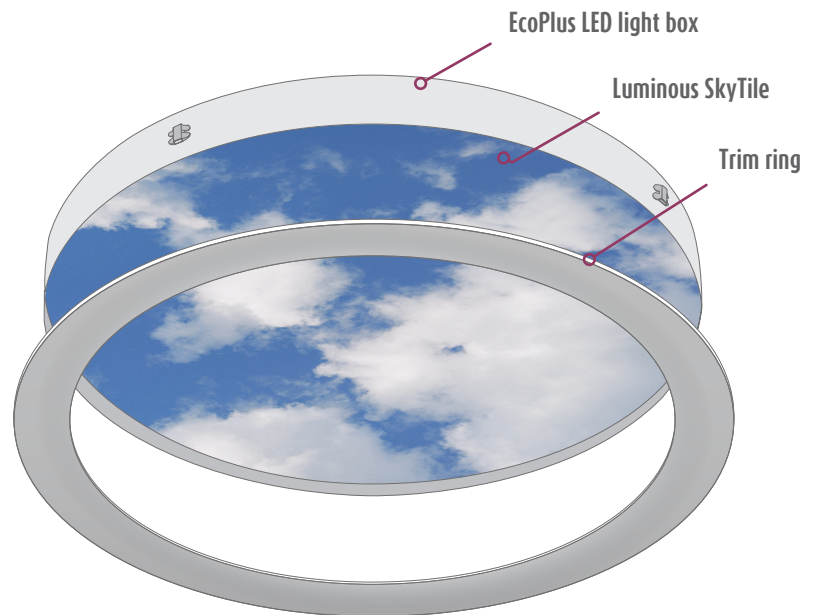
Grid Plan GR1

Suspension Layout SP1

Electrical Layout EL1

Electrical Layout EL2

Grid Detail DE2-4



If any of these documents are missing, please contact the Sky Factory for replacements before beginning installation.

Important: All subcontractors involved must have a copy of these specifications. All specifications must be followed in all stages of on-site manufacture or installation or warranty may be voided. Any deviation in the installation specifications may alter the final product and could result in a major increase in cost. Please review all documents enclosed before installation.

For technical support at any time during the installation, please call us **toll free at 866-759-3228**.

We want your installation to go as smoothly as possible. Thank you for choosing Sky Factory.

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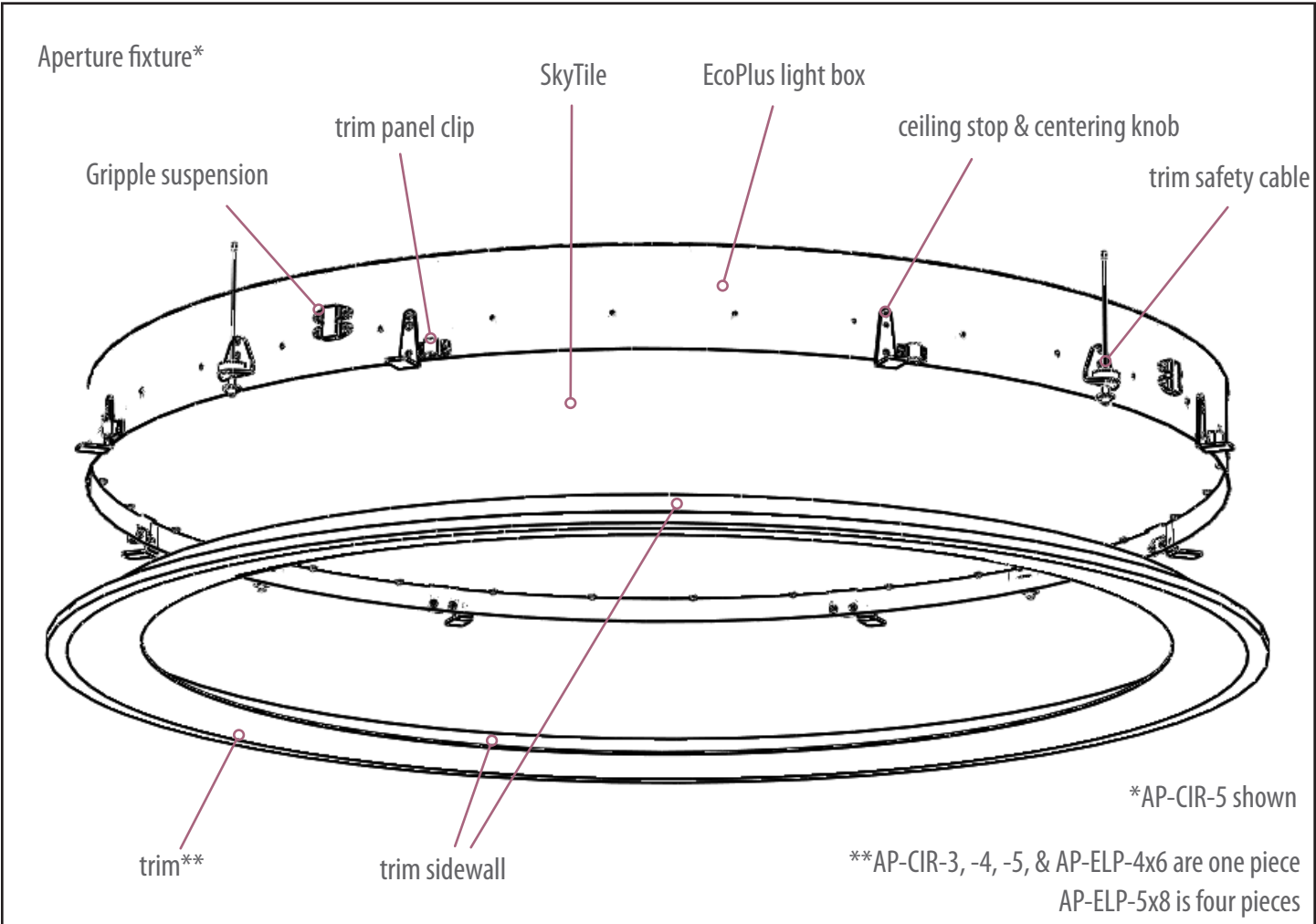
Installation Requirements

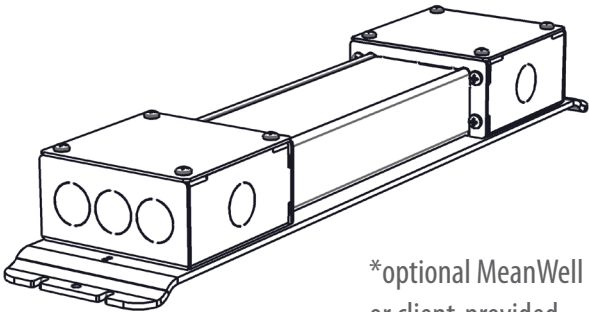
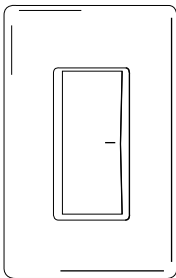
Tools and Parts

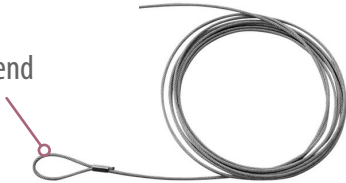
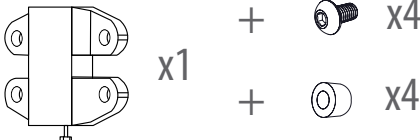

Tools Needed:

- Tools to attach suspension system to building structure
- Needlenose pliers, measuring tape, level and other hand tools
- Tools for installing electrical and running conduit (where required)

Parts Provided:

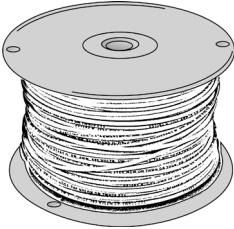
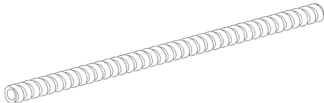
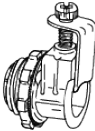

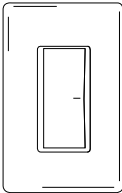


<p>Sky Factory 24PS HLG Power System*</p>  <p>*optional MeanWell HLG or client-provided</p>	<p>Dimmer switch (optional)</p>  <p>*Lutron Diva (North America) or Lutron Lyneo & relay (International)</p>
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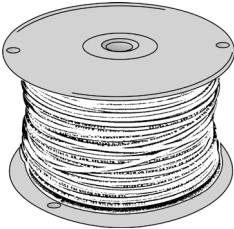
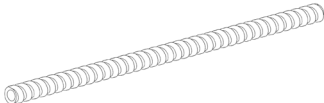
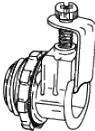
<p>Gripple suspension cable</p>  <p>loop type end</p> <p>* 5' (1.5m) cable length</p>	<p>Gripple Butterfly Trapeze kit (backup only)*</p>  <p>* Gripple Butterfly Trapeze + 10-32 fastener + 1/4" spacer</p>	<p>Trim safety cable*</p>  <p>* 2 - 8 depending on model</p>
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Parts Needed:

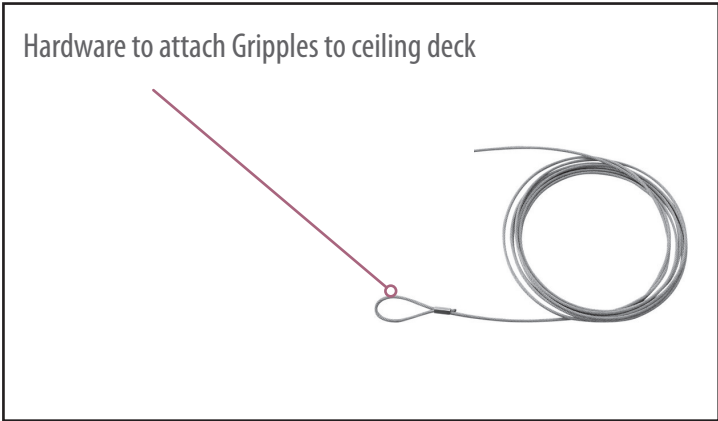
for AC Source power

<div>Electrical wire</div> <div></div>	<div>Conduit</div> <div>* where required</div> <div></div>
	<div>1/2" trade size box connector*</div> <div>*as per application and code</div> <div></div>
<div>Standard 2x4 wall box</div> <div></div> <div>+</div> <div>and in-line switch where no dimmer is specified</div> <div></div>	

for DC power

<div>Electrical wire</div> <div></div>	<div>Conduit</div> <div>* where required</div> <div></div>
	<div>1/2" trade size box connector*</div> <div>*as per application and code</div> <div></div>

Suspension



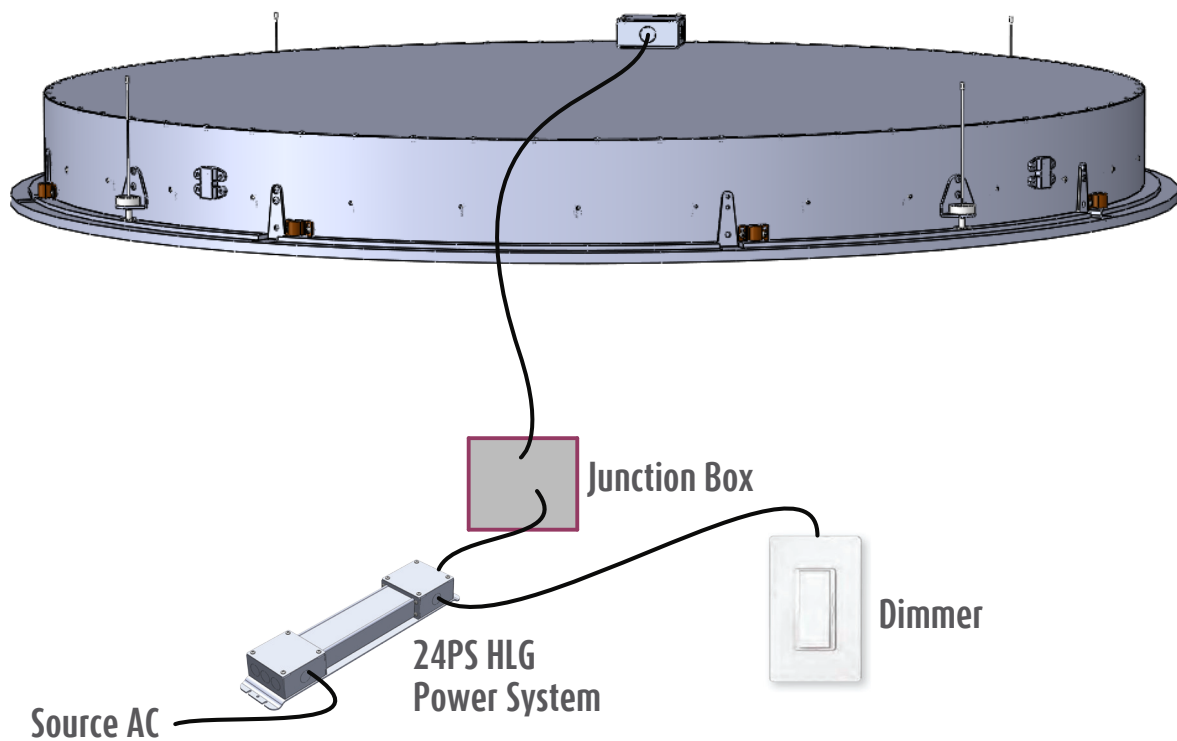
Location Requirements

Aperture SkyCeilings require selecting a location for the following components:

- SkyCeiling
- Dimmer or in-line power switch
- AC to DC power supply

SkyCeiling

- suspension anchor points must meet local and national codes
- must be dry and accessible for periodic cleaning
- can be installed in ceiling grid or imbedded in finished ceiling



Power system

- must be dry, dust-free and accessible for periodic cleaning
- SkyFactory 24PS HLG shown

Dimmer

- wall box not provided
- Lutron Diva dimmer shown

Suspension Requirements

Fixture Suspension

Gripple Butterfly Trapeze suspension system (provided)

5' (152cm) stainless steel cable with loop end anchored to building structure

- Suspension anchor points not provided and must meet local and national codes

See drawing SP1 for suspension locations

Trim Suspension

Sugatsune suspension system (provided)

Panel clips secure trim to fixture

Safety cables with 5" reach help secure trim during installation and provide backup once trim is fully secured

SkyCeiling Dimensions and Weights

AP-CIR-3

7 3/8" high

32 1/2" EcoPlus light box outside dia.

36" trim outside dia.

23 lbs ; 5.8 lbs per suspension point

AP-CIR-3-M

18.8cm high

81cm EcoPlus light box outside dia.

90cm trim outside dia.

10.5kg; 2.7kg per suspension point

AP-CIR-4

7 3/8" high

44 1/2" EcoPlus light box outside dia.

48" trim outside dia.

40 lbs; 10 lbs per suspension point

AP-CIR-4-M

18.8cm high

111cm EcoPlus light box outside dia.

120cm trim outside dia.

18.2kg; 4.6kg per suspension point

AP-CIR-5

7 3/8" high

56 1/2" EcoPlus light box outside dia.

60" trim outside dia.

63 lbs; 15.8 lbs per suspension point

AP-CIR-5-M

18.8cm high

141cm EcoPlus light box outside dia.

150cm trim outside dia.

28.6kg; 7.2kg per suspension point

AP-ELP-4X6

7 3/8" high

44 1/2" x 68 1/2" EcoPlus light box outside dim.

48" x 72" trim outside dim.

61 lbs; 15.3 lbs per suspension point

AP-ELP-4X6-M

18.8cm high

111cm x 171cm EcoPlus light box outside dim.

120cm x 180cm trim outside dim.

27.7kg; 7.0kg per suspension point

AP-ELP-5X8

7 3/8" high

56 1/2" x 80 1/2" EcoPlus light box outside dim.

60" x 84" trim outside dim.

101 lbs; 16.9 lbs per suspension point

AP-ELP-5X8-M

18.8cm high

141cm x 231cm EcoPlus light box outside dim.

150cm x 240cm trim outside dim.

45.9kg; 7.7kg per suspension point

Electrical Requirements

At 24V DC:

AP-CIR-3 Series @ 01.6A, 37.4W

AP-CIR-4 Series @ 2.9A, 69W

AP-CIR-5 Series @ 4.7A, 112.1W

AP-ELP-4X6 Series @ 4.8A, 115W

AP-ELP-5X8 Series @ 8.2A, 195.5W

See one of three electrical packets:

Custom EcoPlus Electrical Packet (24PS HLG),

Custom EcoPlus Electrical Instructions (HLG), or

Custom EcoPlus Electrical Instructions (Fixture Only)

Electrical work must be performed by a qualified electrician who is familiar with DC lighting systems and must conform to all local and national codes.

Fixture and SkyTile Orientation

Fixtures MUST be installed so the SkyTile fits the SkyTile Layout.

SkyCeiling images are composed with a head/foot orientation.

See **SkyTile Layout** included.

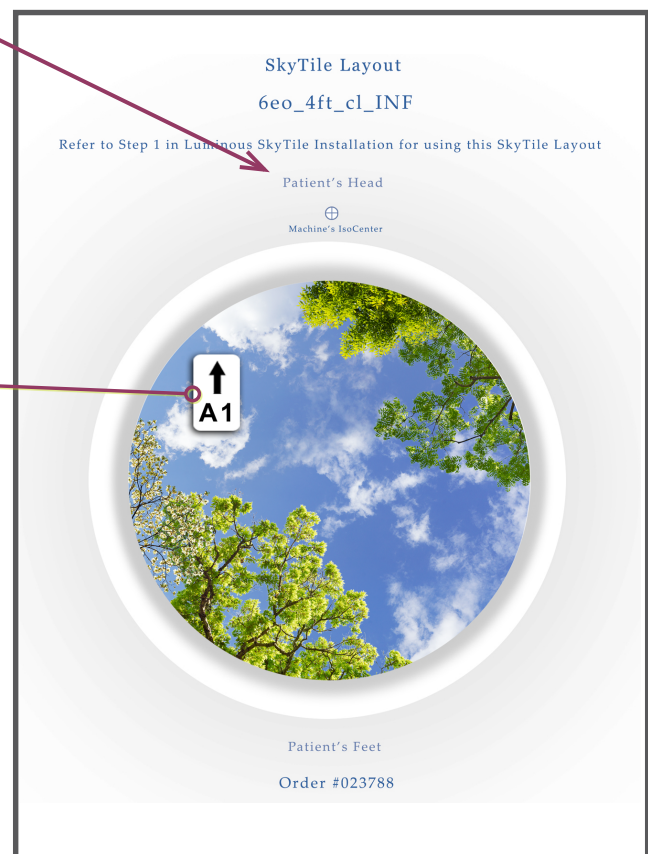


Important:

Quick release label is for installation purposes only.

It orients the location and direction of tile in the ceiling.

Label MUST be removed once the SkyCeiling is fully installed and checked for proper orientation.

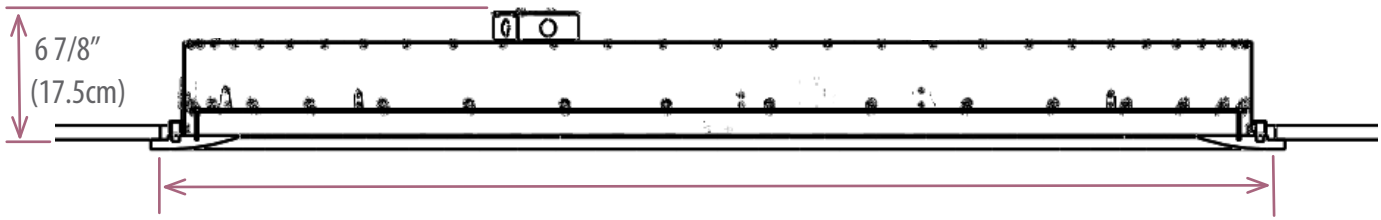


Installation Instructions

Step 1: Create ceiling opening

Frame opening or prepare grid in accordance with all local and national codes.

See also Suspension Requirements on page 6, cross sections on pages 16-17, and installation specific drawings GR1, SP1 and DE2-4 provided



IMPORTANT: TRIM OVERLAP IS MINIMAL. OPENING MUST BE +/- 1/4" (0.64cm)

TEMPLATE PROVIDED FOR ELLIPSES

finished openings:

AP-CIR-3

35" sidewall to sidewall or
15/16" grid on 3' center

AP-CIR-4

47" sidewall to sidewall or
15/16" grid on 4' center

AP-CIR-5

59" sidewall to sidewall or
15/16" grid on 5' center

AP-ELP-4X6

47" x 71" sidewall to sidewall or
15/16" grid on 4' and 6' center

AP-ELP-5X8

59" x 95" sidewall to sidewall or
15/16" grid on 5' and 8' center

AP-CIR-3-M

87.5cm sidewall to sidewall or
2.5cm grid on 90cm center

AP-CIR-4-M

117.5cm sidewall to sidewall or
2.5cm grid on 120cm center

AP-CIR-5-M

147.5cm sidewall to sidewall or
2.5cm grid on 150cm center

AP-ELP-4X6-M

117.5 x 177.5cm sidewall to sidewall or
2.5cm grid on 120 x 180cm center

AP-ELP-5X8-M

147.5 x 237.5cm sidewall to sidewall or
2.5cm grid on 150 x 240cm center

Step 2: Plan for electrical

See:

- **Location Requirements** on page 5
- **Step 7: Connect Power**
- **Custom EcoPluS Electrical Packet** provided

Step 3: Determine SkyTile orientation

- See page 7
- **IMPORTANT:** Be sure to orient the fixture following the **SkyTile Layout** sheet. If the SkyTile is improperly oriented, the fixture will have to be removed from the SkyCeiling and re-installed in the proper orientation.

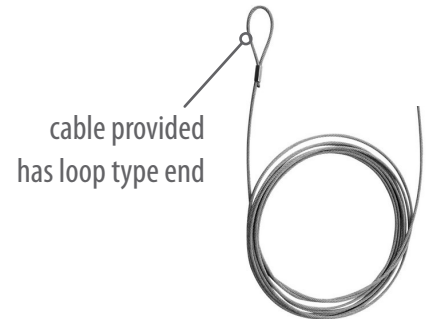
Step 4: Attach suspension cables to building structure

See:

- **SP1** for SkyCeiling suspension points
- "Suspension Requirements" on page 6 for SkyCeiling weights

Attach cables to building structure following all local and national codes

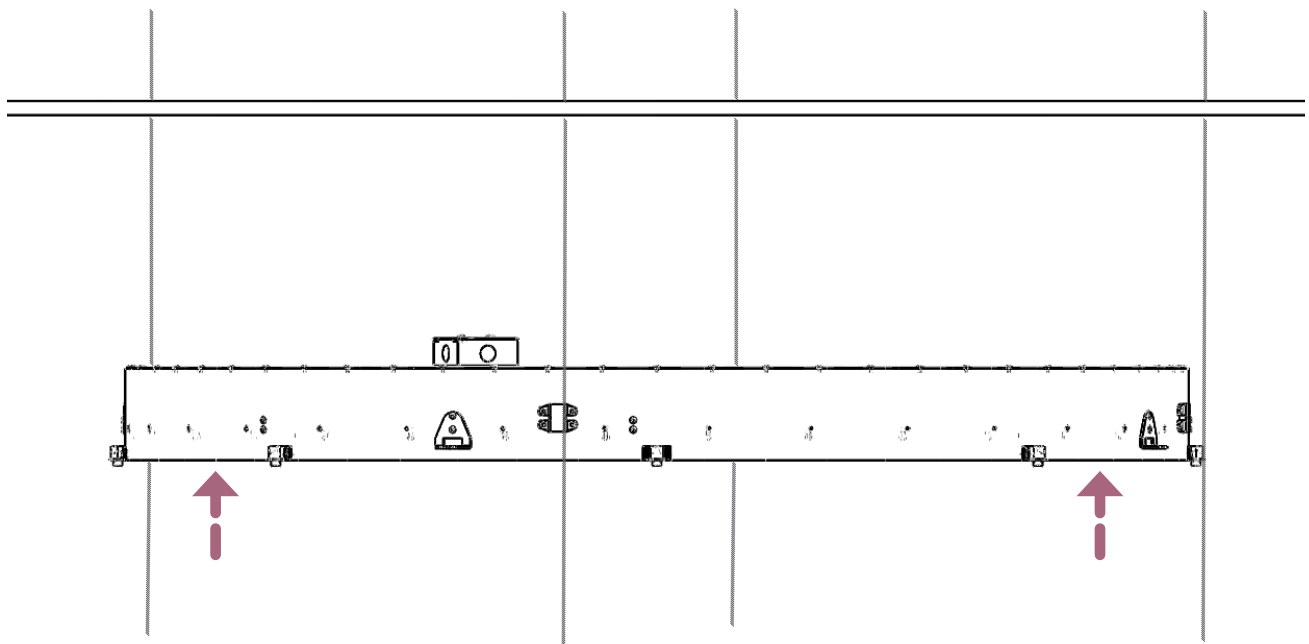
Ensure cables extend at least 3" (8cm) below Gripper when fully installed.



Step 5: Lift fixture into position

IMPORTANT: Lift fixture by sidewall or ceiling stops. **DO NOT LIFT AGAINST SKYTILE.**

Do not overflex fixture when positioning. Too much flexion could crack SkyTile.



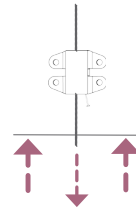
Step 6: Secure fixture to suspension cables

Operating the **Gripple Butterfly Trapeze** suspension system

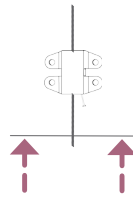
- See also Gripple installation sheet on page 14.

To adjust load upward:

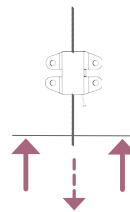
Thread cable down through Gripple, then lift fixture and pull on tail



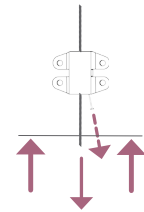
To adjust load downward:



Lift up on fixture to remove load



Pull on cable tail to release internal wedge

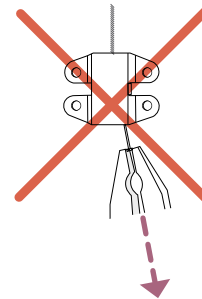


Pull down on pin to free cable

IMPORTANT: DO NOT FORCE PIN

Gripple safety mechanism – release pin will break loose if forcefully pulled under load.

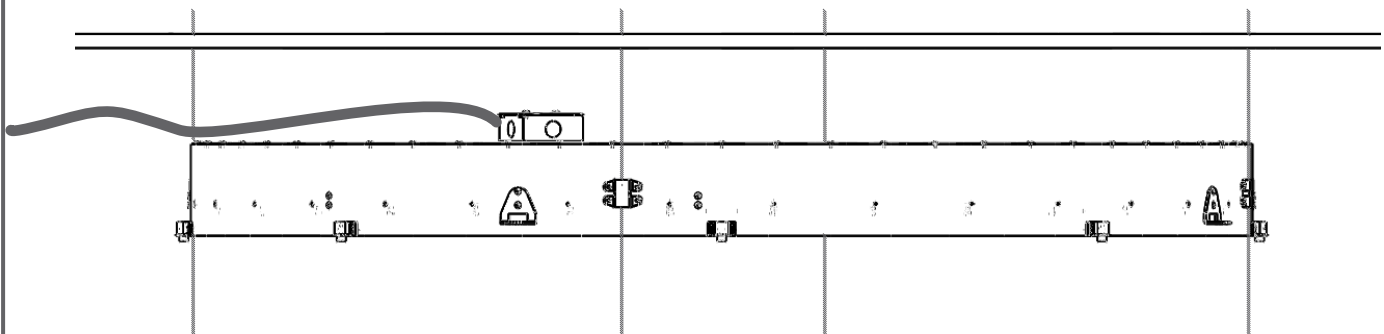
If cable is wedged too tight and won't release, see Appendix A: How to Free Stuck Gripple Cables



Step 7: Connect power

See **Custom EcoPlus Electrical Packet** provided for wiring details

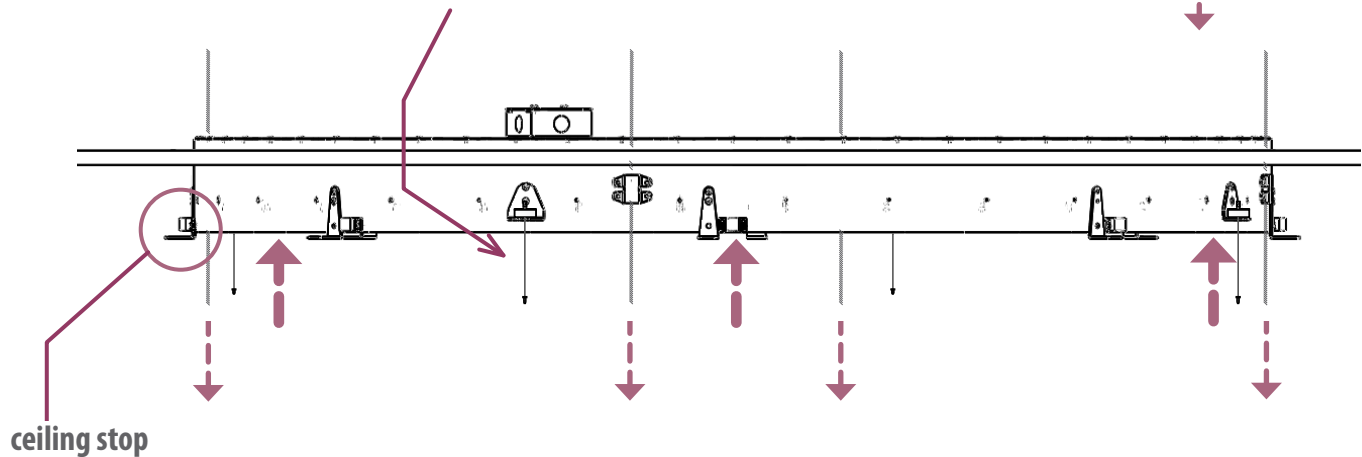
- Must conform to all local and national codes
- Test electrical before Step 8



Step 8: Draw fixture up against grid or finished ceiling

Do not overflex fixture when snugging up cables. Work from Gripple to Gripple lifting fixture 3-4" (7-10cm) at a time

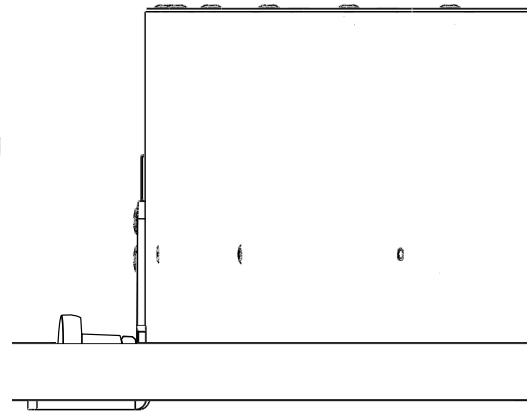
NOTE: Install trim safety cables before seating fixture against finished ceiling. Cables will hang from bracket, and push up once attached to trim.



- sets height of fixture in relation to bottom of grid or finished ceiling so trim will seat properly
- in finished ceiling applications only, stops fixture from lifting when trim is snapped into place. See SP1 and GR4.

IMPORTANT: Stop needs to be snug only against ceiling.

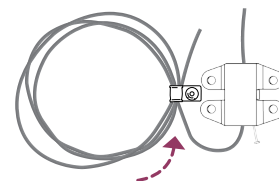
If Gripple is pulled too tight, it can be hard to release. See Step 6 and Appendix A.



IMPORTANT: Bottom edge of fixture must sit in same plane for trim to secure properly.

Once fixture is firmly seated against ceiling or grid,
stow loose suspension cables out of the way above the ceiling

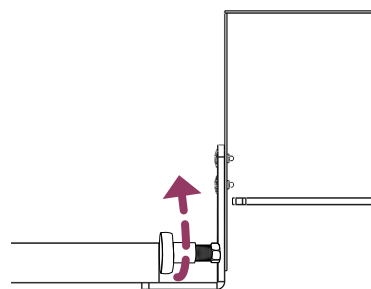
DO NOT CUT CABLES! LEAVE FOR FUTURE MAINTENANCE, IF NEEDED!



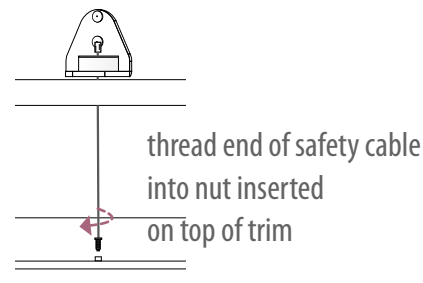
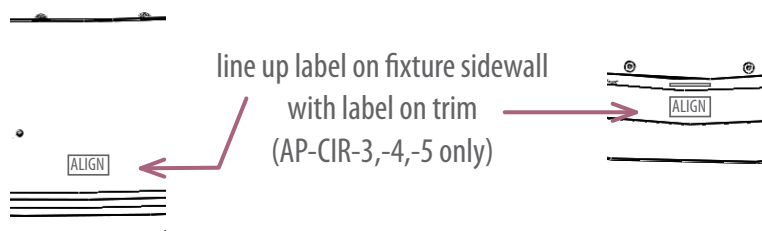
Step 9: Center fixture in opening

adjust knobs on ceiling stops to center fixture.

in ceiling grid applications, knob may ride against grid
or against cut acoustical tiles



Step 10: Align trim and attach safety cables

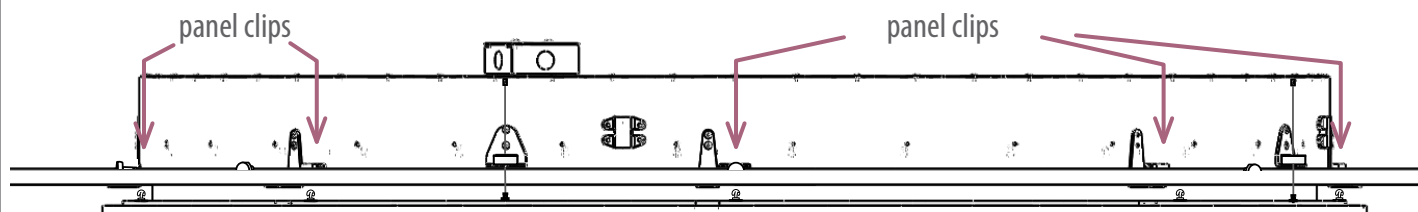


Step 11: Attach trim

NOTE: Make sure all suspension cables are stowed out of the way

Make sure fixture sits in a single plane. If panel clips do not engage,
fixture height may need adjusted.

AP-CIR-3, -4, -5, & AP-ELP-4x6 are one piece
AP-ELP-5x8 is four pieces –
for 5x8 trim alignment, see Step 12



to engage clips:

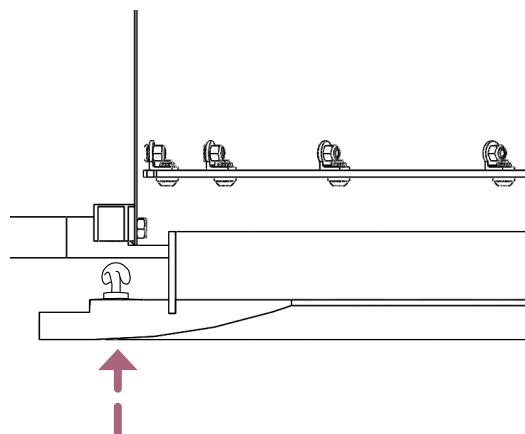
- line up male clip on trim to female clip on fixture
- push up firmly on trim right below clip

IMPORTANT: In ceiling grid applications, fixture must
be manually held down when engaging clips

to disengage clips:

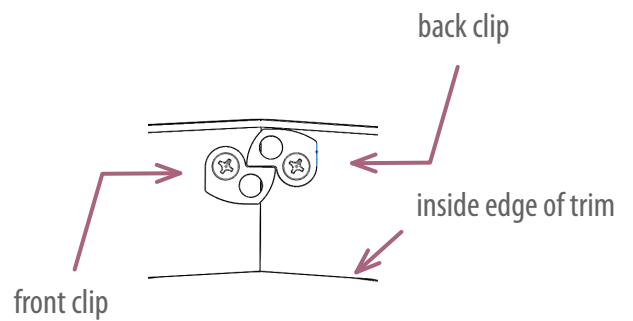
- pull down firmly on trim in clip location

NOTE: Grid applications may require final height adjustment after trim is installed

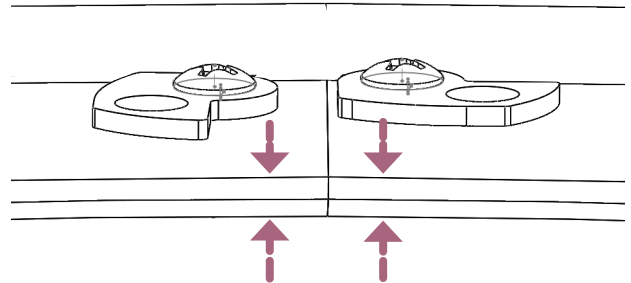


Step 12: Trim joint alignment (5x8 only)

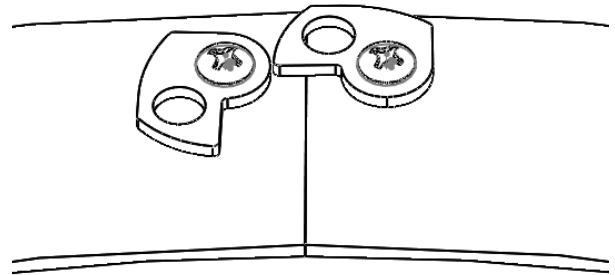
Alignment clips sit on inside ledge of trim and lock together



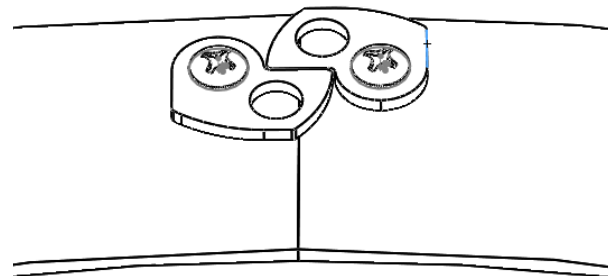
Pinch joint so two sides line up horizontally



Rotate back clip into position first – straight leg should be perpendicular to joint



Then rotate front clip into position – straight leg should be perpendicular to joint



Final Inspection List

Is the trim seated up against the grid flange or finished ceiling?

- If not, make sure all panel clips are engaged.
- Height of fixture in relation to finished ceiling or grid may need to be adjusted.

If Ap-Elp-5x8, have trim joint alignment clips been adjusted?

- If not, make sure all alignment clips are engaged and trim lines up at joints.

In grid ceiling applications, does the fixture sit evenly in the grid?

- If not, fixture alignment may need adjusting.
- If grid is not installed square, fixture may sit unevenly in the opening. If so, adjust grid so it is square.

Is the image evenly lit?

- If not, contact Sky Factory.

Does the SkyCeiling image match the SkyTile Layout image?

- If the SkyTile Layout has a head location, make sure the SkyCeiling is properly oriented in the room. If not, it should be reinstalled.

Has the arrow-label been removed once the image has been verified? If not, remove it now.

- Quick release label MUST be removed once the SkyTile is fully installed and checked for proper orientation.

Care and Maintenance

- Avoid scratching SkyTile and Trim when cleaning.
- Once installed, SkyTile and Trim can be cleaned in place.
- Use a mild soap and water solution, and a soft, damp-only, non-abrasive cloth.
- DO NOT wet edges of SkyTile. Water may cause image film to de-laminate.

Butterfly Trapeze Hanger



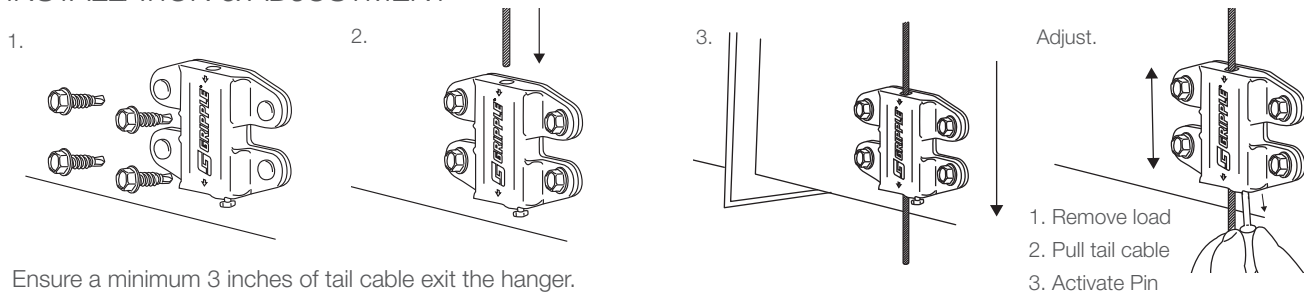
Cable hanger with one-way fastener or the fast suspension of rectangular duct and similar equipment in an indoor stationary setting. NOT suitable for use in chlorinated / swimming pool environments.

FEATURES / BENEFITS

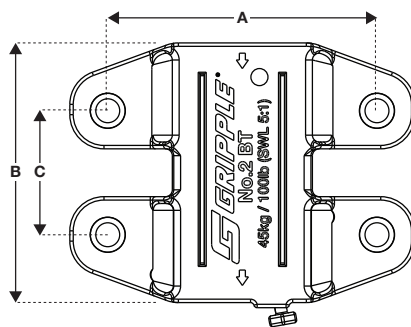
- Attaches to side of duct with self-drilling screws (not provided)
- Rubber pad prevents air leakage and dampens vibration
- Simple height adjustment using the built-in release pin prior to applying load
- Conforms to DW144 Class D
- Ideal for rectangular duct suspended close to the ceiling; can also be used for multi-tiered installations
- Supplied as a ready-to-use kit comprising a length of cable with pre-attached end fixing



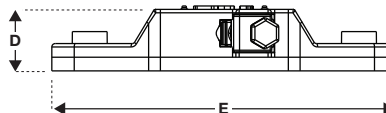
INSTALLATION & ADJUSTMENT



SIZE SPECS



Dimension	(inches)
A	1.54
B	1.50
C	0.71



Dimension	(inches)
D	0.35
E	2.00

AVAILABLE END FIXINGS



For more options on available end fixings please contact us or visit www.grippl.com

CABLE SPECS

Galvanized high tensile steel cable to EN12385. Standard lengths from 5ft-30ft, other lengths can be made to order.

	No.2
Cable Diameter	5/64"
Strand Configuration	7x7
Min. Breaking Load	500 lbs
Max. Safe Working Load	100 lbs
Tensile Strength (lbs/sq.in.)	256,700

FASTENER SPECS

Housing - Type ZA2 Zinc

Wedge - Sintered steel hardened to min. 56 Rockwell C

Spring - Stainless Steel (Type 302)

End Cap - UV stabilized homopolymer propylene

Rubber Pad - EPDM 40±5 SHORE A

Pin - A2 Stainless Steel

Safe Working Load:

No.2 - up to 100 lbs @5:1 safety factor

PI-BTRAPEZE-US

www.grippl.com

GripPle's policy is one of continuous development and innovation. We therefore reserve the right to alter specifications, etc. without notice.

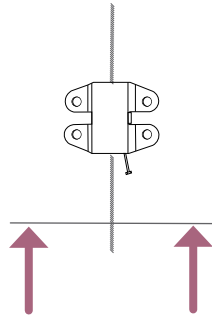


GripPle Inc | 1611 Emily Lane | Aurora, IL 60502 | USA

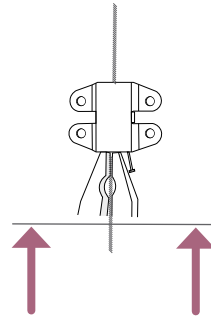
Tel +1 866 474 7753 Fax +1 800 654 0689 Email gripplinc@grippl.com

Appendix A: How to Free Stuck Gripple Cables

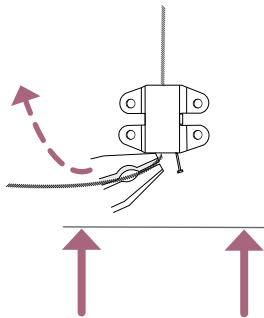
If cable is wedged too tightly and won't release::



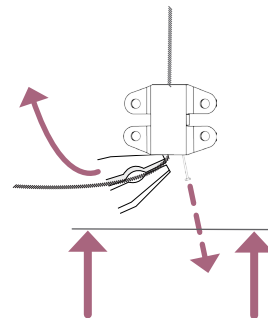
Step 1:
Support fixture
so cable is not carrying load



Step 2:
Grip cable with pliers
against bottom of Gripple

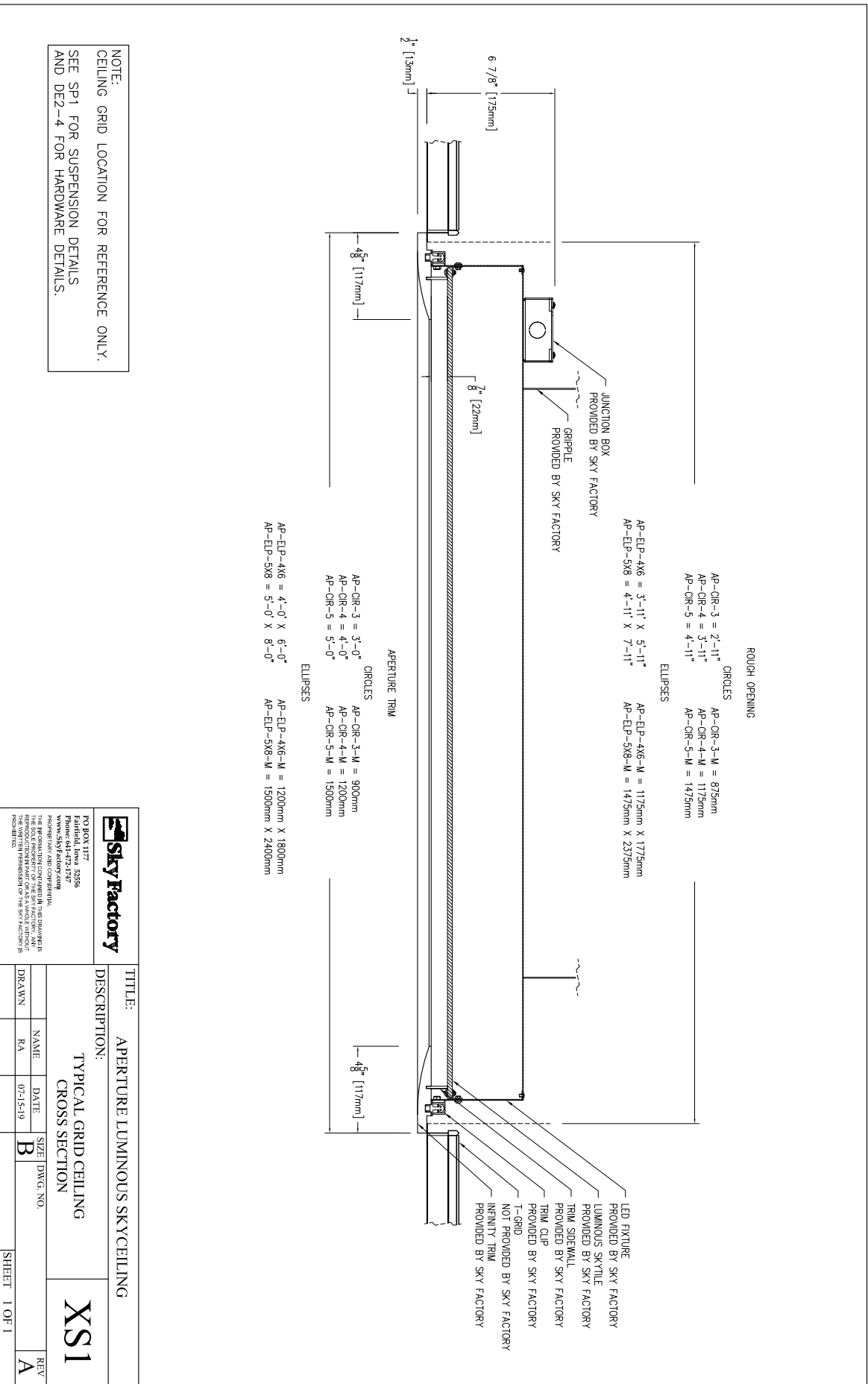


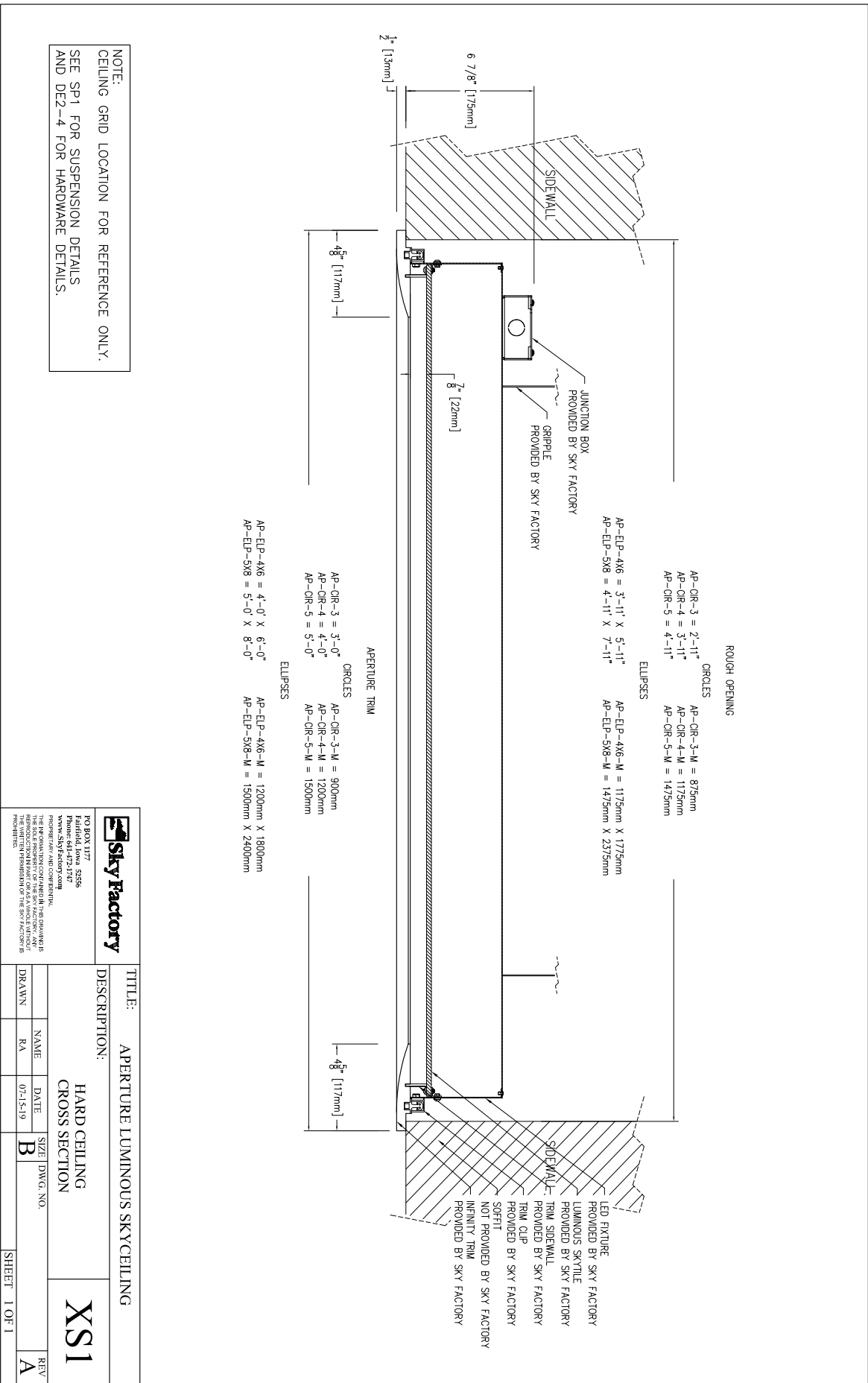
Step 3:
Gently roll cable sideways
while wedging pliers against Gripple



Step 4:
When cable is loosened
pull down on pin

**NOTE: If a Gripple is damaged beyond repair,
an extra Gripple with stand-offs and machine screws is included**





NOTE:
CEILING GRID LOCATION FOR REFERENCE ONLY.
SEE SP1 FOR SUSPENSION DETAILS
AND DE2-4 FOR HARDWARE DETAILS.

sky Factory PO BOX 1177 Fairfield, Iowa 52504 Phone: 319.336.5555 Fax: 319.336.5556 www.skyfactory.com		TITLE: APERTURE LUMINOUS SKYCELLING DESCRIPTION: HARD CEILING CROSS SECTION XS1	
DRAWN	NAME	DATE	SIZE
RA	RA	07-15-19	B
DWG. NO.			REV
SHEET 1 OF 1			A