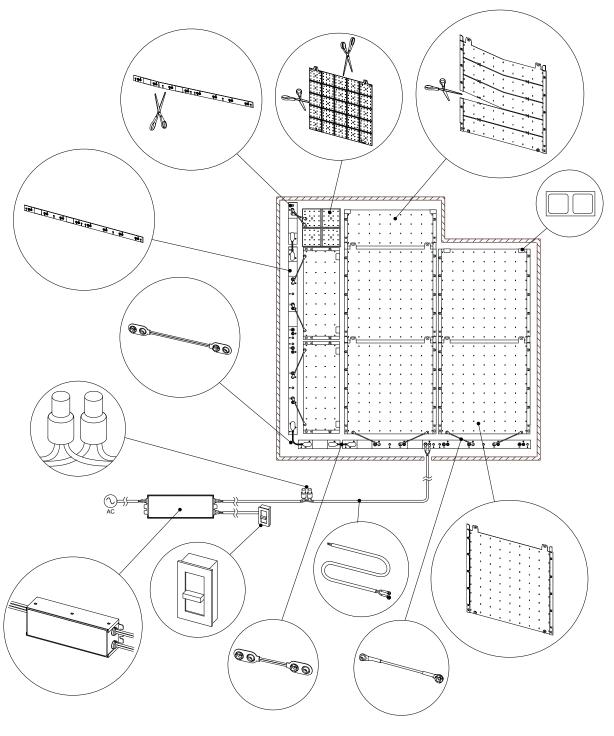
# COOLEDGE TILE INTERIOR INSTALLATION INSTRUCTIONS







Caution: Observe precautions for handling electrostatic sensitive devices.







**RoHS** 



5 Year Limited Warranty: Parts and workmanship

EN 60598 Compliant (as a system)

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## Please read instructions prior to installation

Installation must be completed by a qualified electrician in accordance with all national and local electrical and construction codes.

Ensure power is off prior to installation.

TILE Interior products are dry location rated only.

TILE Interior must be powered by a Cooledge approved constant voltage Class 2 or LPS LED Driver.

Using a non-approved power source could damage the system and will void the warranty.

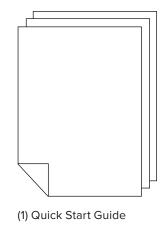


DO NOT DISCARD the contents of the Installation Kit. All components will be needed to perform the installation.

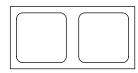
#### 2.0 SYSTEM CONTENTS

A. Installation Kit:	A bag that contains this document, a spacer bar, and a set of clear insulating patches that are required when cutting TILE Interior.
B. TILE Interior:	Packaged in cardboard containing 1–10 pieces.
C. TILE Interior Connector Kits:	Packaged in bags each containing one (1) strip, enough wire jumpers to connect the strips to two (2) TILE Interior and one adjacent Connector Strip.
D. TILE Interior Corner Kit (optional):	A bag that contains a Cooledge TILE Interior with adhesive backing strips, and an additional Connector kit with a longer "double jumper" connector.
E. LED Drivers:	Boxes containing LED drivers
F. TILE Interior Starter Cables:	10' (3m) length shielded 16AWG (1.5mm²) cables with two (2) snap connectors (positive and negative) at one (1) termination for connection to the Connector Strip and stripped conductors at the other termination for connection directly to the LED driver or to an Extension Cable.
G. TILE Interior Extension Cables (optional):	Shielded 16AWG (1.5mm²) cables cut to the length ordered with a set of two (2) crimp connectors for making a connection between a Starter Cable and LED Driver when the remote mounting distance of the driver exceeds 10' (3m).  Note: installer to supply appropriate two (2)-conductor wire that meets local
	electrical code requirements when wire size required is other than 16AWG (1.5mm²) noted. For example when the remote mounting distance exceeds the capacity of 16AWG (1.5mm²) conductors.

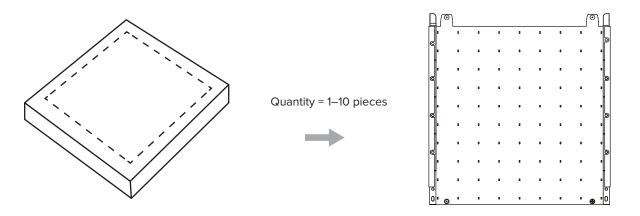
## A. INSTALLATION KIT (DO NOT DISCARD)



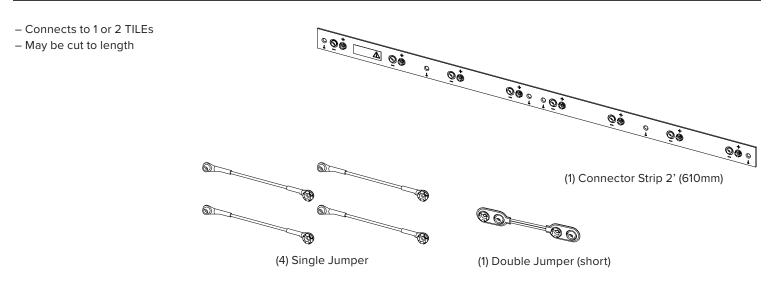




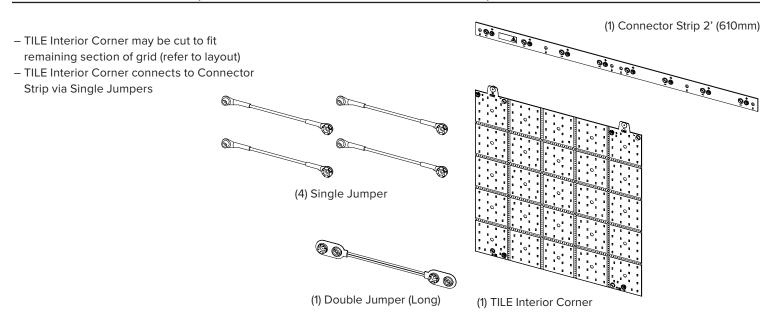
(1) Set of 12 Insulating Patches



## C. TILE INTERIOR CONNECTOR KIT (REQUIRED)

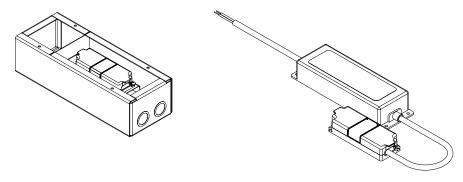


## D. TILE INTERIOR CORNER KIT (OPTIONAL DEPENDING UPON DESIGN LAYOUT)



## E. LED DRIVER (MAXIMUM 90W)

 Connects to Starter Cable or Extension Cable on low voltage side (inside enclosure in North America)



\*In some cases, a 3rd party LED driver may be required. A voltage booster unit (VB-90-XX) is REQUIRED when not using a 58V constant voltage driver supplied by Cooledge. Please refer to project documents.

**UL Listed Version** 

**CE Compliant Version** 

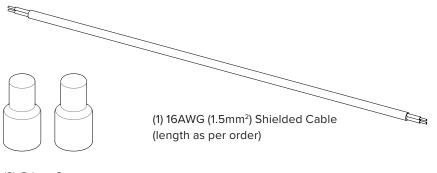
\*includes UL approved enclosure in North America

## F. TILE INTERIOR STARTER CABLE 10' (3M) (MAXIMUM 90W)

Connects to Connector Strip and Enclosed Driver or Extension Cable
May be cut shorter if required
(1) 16AWG (1.5mm²) Shielded Cable 10' (3m)

## G. TILE INTERIOR EXTENSION CABLE (OPTIONAL)

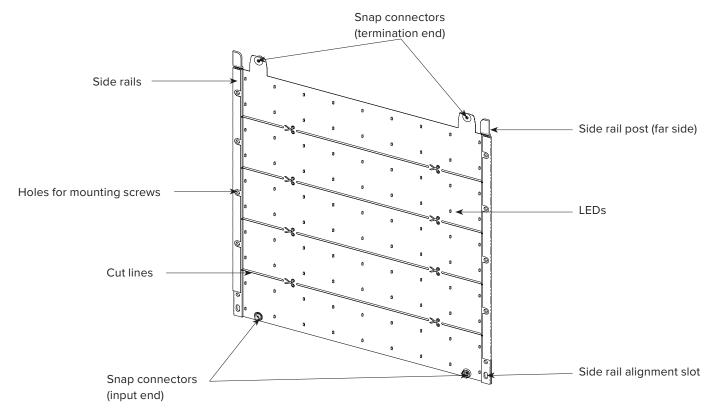
- Connects to a Starter Cable and Enclosed Driver



(2) Crimp Connectors

TILE Interior provides a flexible means of illuminating large areas.

TILEs can be connected in series using snap connectors and can be installed on both flat and curved surfaces.



### 4.0 CARE AND HANDLING GUIDELINES

Always handle TILE Interior by the plastic rails running the length of the sheet on both sides.

Avoid handling, scraping, rubbing or wiping the front surface of the sheet. Although the LEDs and drive components are bonded strongly to the plastic base material, it is possible to remove them or damage the electrical connection if not handled with care.

Avoid penetrating the active area of the sheet for any reason.

As with all electronics, light sheets are susceptible to damage from Electrostatic Discharge (ESD). Where possible avoid situations that are conducive to creating static.

Avoid creasing or repeated flexing of TILE Interior as this may cause separation in the traces of the electrical circuits located on the surface of the sheets.

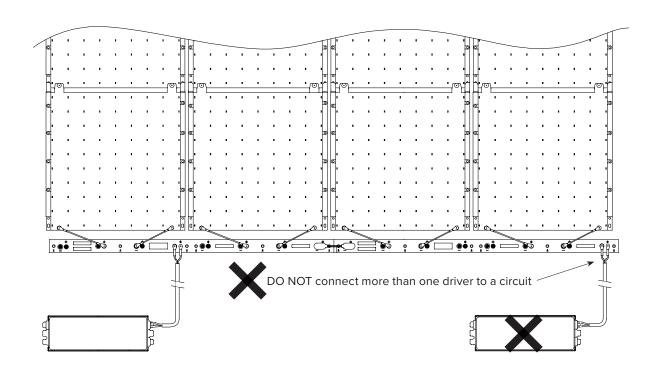


BEFORE STARTING installation carefully consider your system layout (refer to project shop drawings if available):

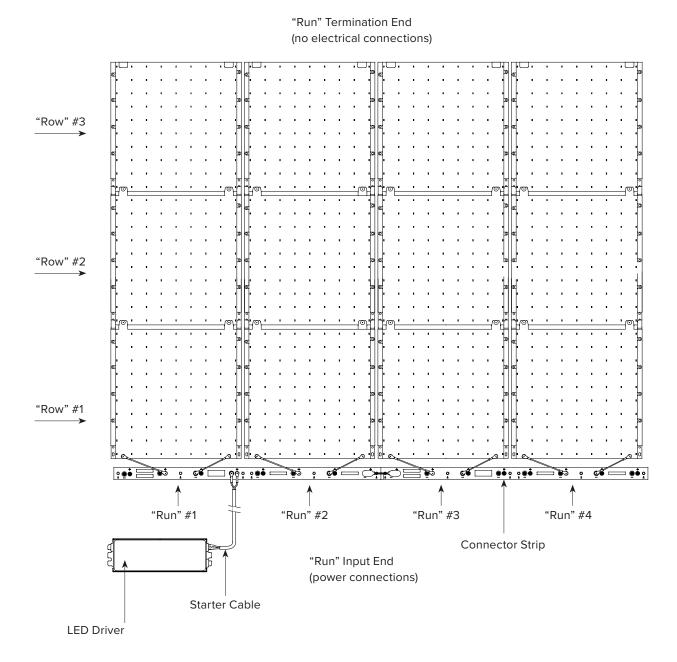
- A maximum of eighteen (18) 600lm or thirty-six (36) 300lm TILEs may be powered from a 90W driver. (Note: Some CCTs may have lower values - check the project drawings to confirm)
- No more than nine (9) 600lm rated or thirteen (13) 300lm rated light sheets may be connected in series (e.g. in a single "run")
- Each TILE Interior illuminates a 12"x12" (30cm x 30cm) area.
- The side rails of TILE Interior sheets hook together for alignment. TILEs are joined electrically by attaching the two (2) sets of snap connectors.



DO NOT CONNECT more than one (1) LED Driver to one (1) electrical circuit. An electrical circuit includes any Connector Strips that are in electrical contact with each other. Circuits must be 90W maximum.



The installation below shows four (4) runs of TILE Interior. Each run consists of three (3) TILE Interior sheets connected in series. The Driver is connected to the system via Connector Strips that utilize Single Jumpers to contact the input end of the runs of TILE Interior.

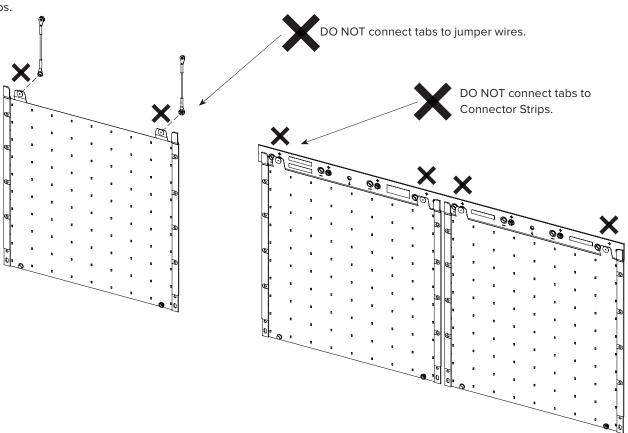


NOTE: Some layouts will require a TILE Interior to be cut at the termination end of the run to fit into the area provided for mounting. Additionally, if runs are required that are less than the width of a TILE Interior, the layout will require that the TILEs be cut and rotated to fill the space. Please refer to Section 7.3: "Cutting TILE Interior" for detailed instructions on how to do this.



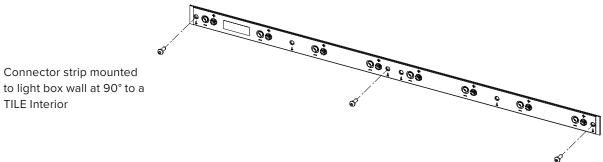
DO NOT CONNECT TILE Interior tabs to Connector Strips with the snap connectors. Do not connect tabs to jumper wires.

Single Jumpers MUST ALWAYS be used to connect TILE Interior to Connector Strips.



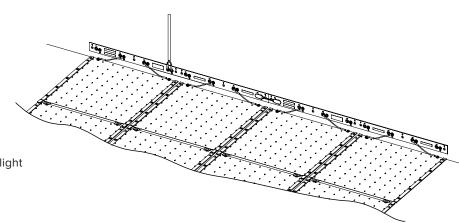
#### 7.1 INSTALL THE CONNECTOR STRIPS

- 1. If available, refer to the project shop drawings to locate the input end of the TILE Interior runs. Connector Strips are to be mounted adjacent to the input end of the sheets.
- 2. Connector Strips are shipped with an adhesive backing. To attach the strips to the mounting surface, remove the adhesive liner from the back of the strip, position the strip in correct location and stick the strip onto the surface avoiding folds and wrinkles. The strips MUST be oriented in the same direction (e.g. all the labels face the same way) so that the jumper connections can be made correctly.
  - Connector Strips have been designed so that they can be installed very close to the TILE Interior and in some cases, it may be required that the input end of the TILEs overlaps the strips.
- 3. Once attached in the correct location, the Connector Strip should be secured with fasteners appropriate for the mounting surface. Connector Strips may be cut at the end of a series of runs where <2' (610mm) of space remains. Cutting can be done anywhere on the strips except at the snap connectors.</p>



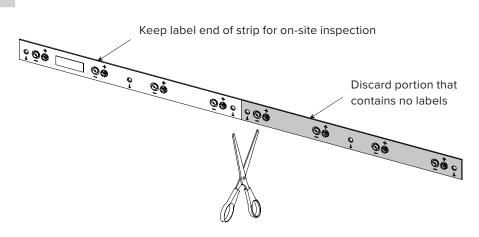
to light box wall at 90° to a TILE Interior

TIP - Connector Strips may be mounted to the inside walls of an enclosure if preferred as shown.

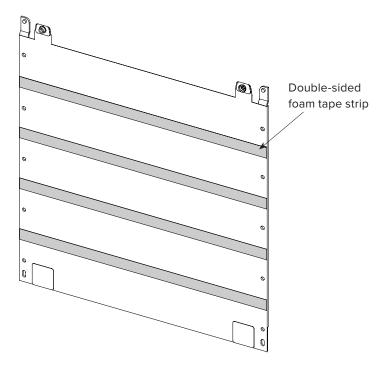


TILE Interior mounted to light box back surface

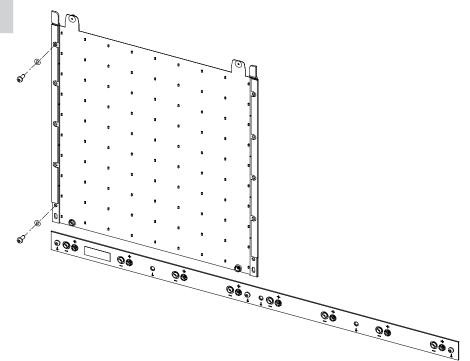
Connector Strips may be cut at the end of a series of rungs where <2' (610mm) of space remains. Cutting can be done anywhere on the strips, except at snap connectors.



For ceiling mounted applications or where flatness is critical it is recommended to use tape applied to the back of the sheets in addition to mechanical fasteners.



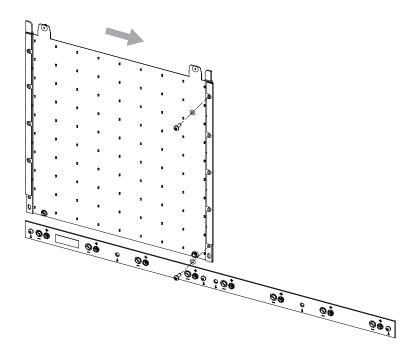
1. Beginning at the input end of a run, position the first TILE Interior where required, with the posts in the rails pointing to where the second TILE Interior will be located. Fasten the sheet to the mounting surface along one (1) rail using two (2) #6 (or M4) fasteners appropriate for the mounting surface. It is recommended to use nylon washers to allow for expansion and contraction of the rails and prevent damage to TILE Interior.



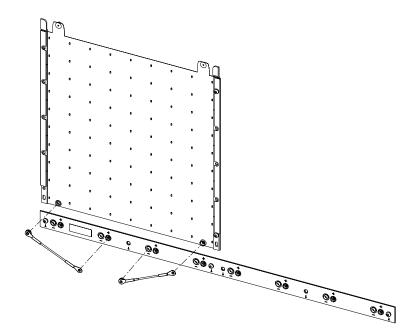
TIP - Securing the first rail with tape will help hold the TILE Interior in place while attaching with fasteners.

2. Stretch the TILE Interior until it lies flat against the mounting surface. Fasten the second rail to the mounting surface.

TIP - In some situations, it may be easier to attach several TILEs (e.g. 3-5) in a run together using the snap connectors (see Step 5) prior to attaching them to the mounting surface.



3. Use two (2) Single Jumpers to connect the snap connectors on the input TILE Interior to the Connector Strip. The jumpers have been designed to ensure that correct polarity is maintained. The jumper can be secured to any mating snap connector on the strip that is within its reach.



TIP - It is generally best to select the innermost mating snap connector on the strip to attach the jumper leaving the end snaps for Double Jumper connections.

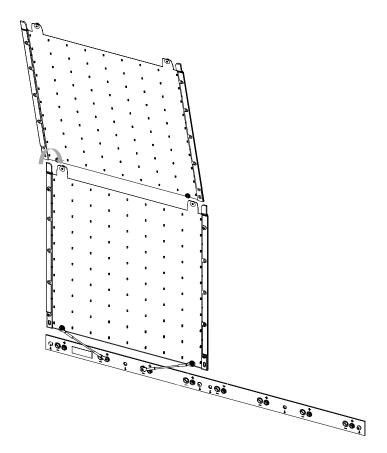


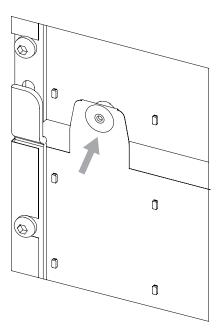
CAUTION: Disconnecting and reconnecting jumpers may damage the connectors on the sheets or Connector Strips if repeated more than 3 times.

(See Section 7.8 for recommended method)

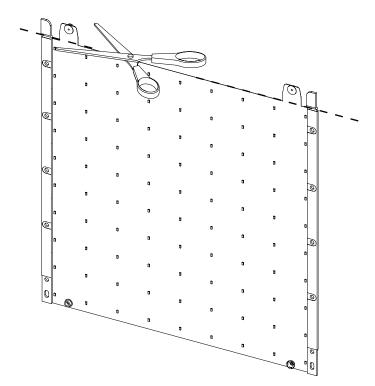
4. Slide the next TILE Interior under the rails of the first until the posts of the first TILE Interior engage the slots in the rails of the second TILE Interior. Ensure that the flexible tabs on the first TILE Interior sit on top of the second. The correct spacing is set with the two (2) TILE Interior as far apart as the slots allow. The slots allow a small degree of rotation to correct for misalignment.

Make the electrical connection between the two (2) TILE Interior by gently pressing the snap connectors on the overhanging tabs down until they click together.

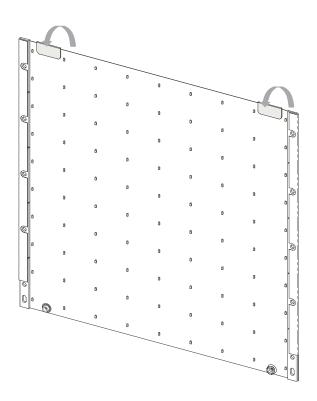




- **6.** Once the second TILE Interior is aligned correctly, attach it in place as in Steps 1 and 2.
- 7. Repeat steps 4, 5 and 6 until the run is complete. For runs that terminate in a full length TILE Interior, please refer to Steps 8 and 9. For runs where the TILE Interior at the termination end must be cut to fit into the allowable space, please refer to Section 7.3: Cutting TILE Interior.
- 8. At the termination end of the run, cut the tabs and the unused rail hooks off of the top row of the TILE Interior product as shown below.



 Place insulating patches over region of exposed TILE Interior where tabs were cut, as shown below.





TRIM ONLY ALONG THE CUT LINES SHOWN ON THE TILE Interior.

TILE Interior may be cut to shorter lengths if required. The cut TILE Interior must always be placed at the termination end of a run as they can no longer be connected to additional TILE Interior. Cut TILEs before mounting.

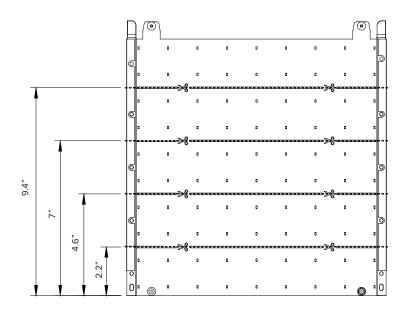
To cut the TILE Interior, use sharp scissors or snips to carefully cut along the white line indicated by the scissor symbol. The plastic rails are notched at these points to aid cutting.

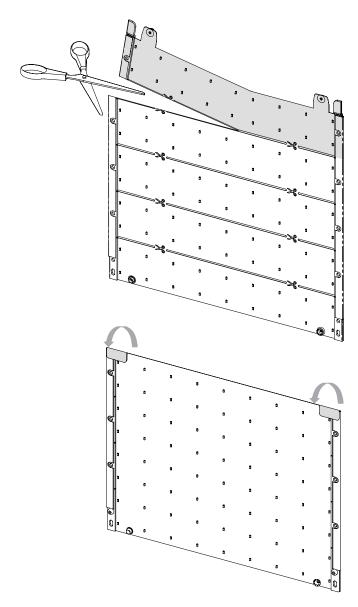
A TILE Interior can be cut to give 12" (30cm) wide x lengths of approximately 2.2" (56mm), 4.6" (117mm), 7" (178mm) or 9.4" (239mm) as shown.



DISCARD the trimmed piece of sheet (with tabs as shown in grey above) as it can no longer be used.

After cutting, the exposed edges of the electrical conductors must be insulated with the supplied insulating patches. These must be wrapped around both cut edges of the TILE Interior as shown below:



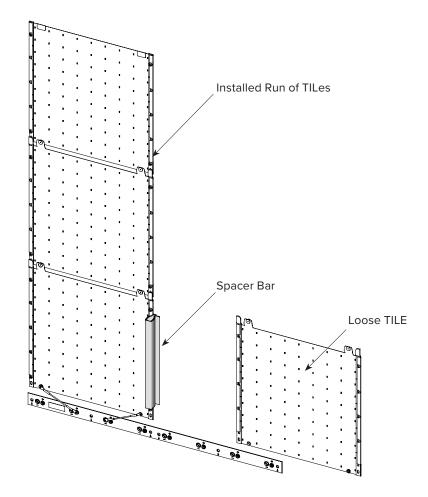


NOTE: The following procedure assumes that runs of TILE Interior are to be mounted on 12" (305mm) center-to-center spacing to ensure optimal uniformity of illumination. If the design requires different spacing, other methods of alignment may be required.

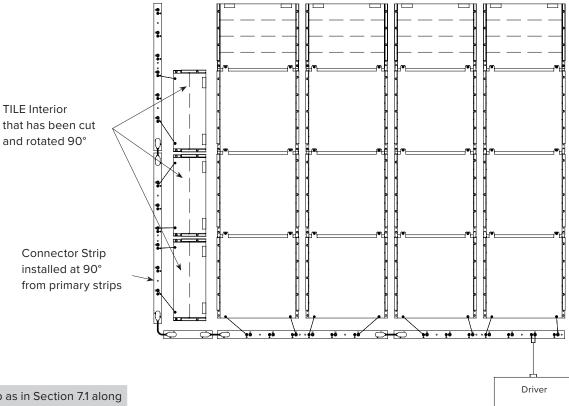
1. You will require the Spacer Bar located in the Installation Kit. Place the Spacer Bar over top of the rail on the TILE Interior that is already attached to the mounting surface with the rubber edge facing toward the "loose" TILE Interior that will be installed. Slide the rail of the loose TILE Interior under the Spacer Bar until it rests firmly against the bar.

TIP - If the mounting surface allows the sheet to slide, the Spacer Bar can be used to hold and slide the loose sheet into position by placing the rubber edge over the rail, pressing down, and sliding the sheet into place.

- 2. By pressing down on the Spacer Bar, the rubber edge will grip the loose TILE Interior and hold it in the correct position while you attach the rail to the mounting surface with the appropriate #6 (or M4) fasteners.
- 3. Once the first rail is attached, stretch the TILE Interior until it is flat and attach the second rail with fasteners as done for the TILEs in the first run.
- 4. Repeat Steps 1-3 until the run has been completed.
- **5.** Repeat until all of the runs have been installed.
- 6. Some designs will require a run with a width that is less than 12" (305mm) (e.g. smaller than the width of a full sheet). For these layouts, follow the procedure described in Sections 7.5 and 7.6.



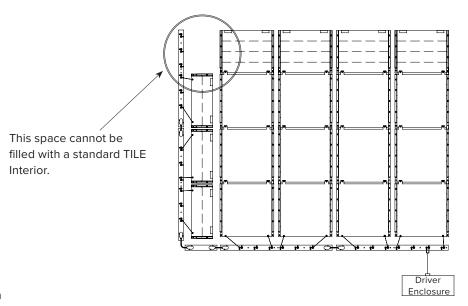
TILE Interior may not be cut in both directions without breaking the electrical circuits that provide power to the LEDs. For this reason, when installing a run that is <12" (305mm) in width, it is necessary to cut the sheets to the required width along the cut line identified in Section 7.3 that corresponds with the required run width, and then rotate the TILEs 90° so that the input end facing the outer edge of the run.



- 1. Install the Connector Strip as in Section 7.1 along the outer edge of the mounting surface parallel to the previously installed runs (i.e. At 90° to the Connector Strip already installed).
- 2. The number of TILE Interior that will need to be cut is equal to the number of rows of full-sized TILEs already installed (e.g. if there are six (6) rows of uncut light sheets in the runs already installed, six (6) sheets will need to be cut and rotated to make up the last run.)
- Determine the required cut increment (Section 7.3) that will fit into the width remaining.
- 4. Cut the TILE Interior so that each sheet is equal to or slightly smaller than the required width and retains the snap connectors.
- 5. Starting at the input end of the previously installed runs, rotate one (1) of the cut TILE Interior 90° ensuring that the snap connectors are adjacent to the Connector Strip, and fasten using appropriate #6 (M4) fasteners as in Section 7.2.
- 6. Repeat Steps 7.4 and 7.5 until the run has been completed or there is one (1) remaining space that is <12" (305mm) in both dimensions.

If a space remains upon completion of Section 7.5, a TILE Interior Corner that can be cut in two (2) directions is required: proceed to Section 7.6.

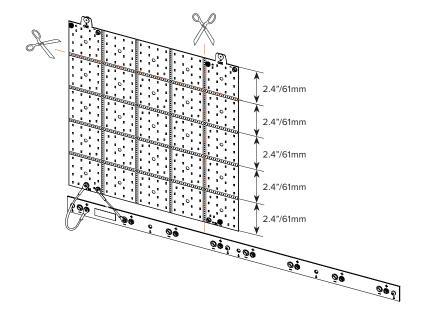
For design layouts requiring runs that include end TILE Interior that are cut short and where the last run is less than 12" (305mm) in width, there will be a space remaining – the "last corner" – that cannot be filled by cutting a standard TILE Interior.

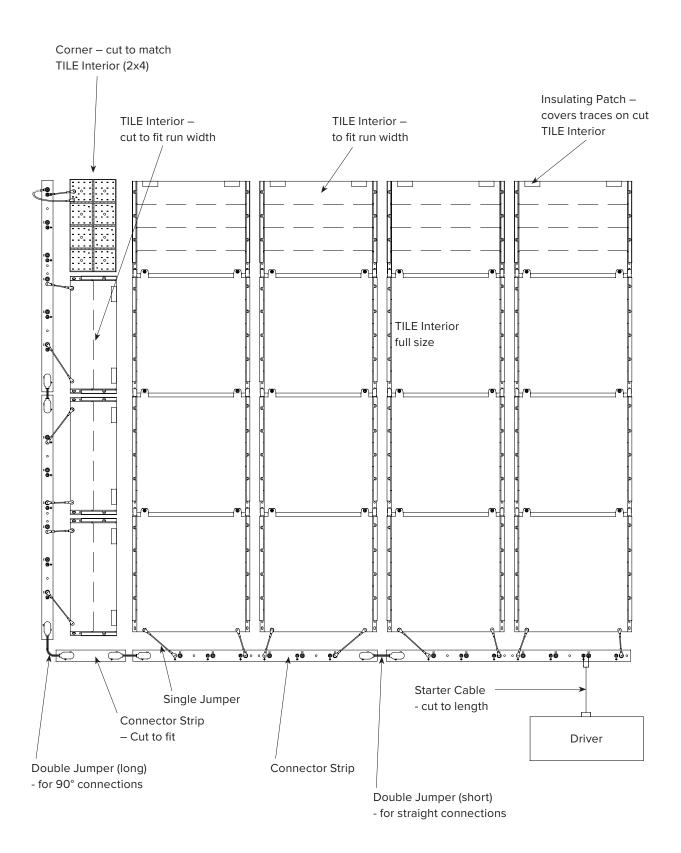


A TILE Interior Corner is used to fill in this last corner in any square or rectangular layout. This sheet has been designed to be cut in both directions.

- 1. Determine the size of TILE Interior Corner required. The sheets are sized to correspond to the allowable cut sizes of the standard sheet (each Corner is 5 x 5 cut increments).
- 2. Cut the TILE Interior Corner to the required size by cutting only along the clear areas between the smaller white square sections. The square section with the snap connectors must always remain as it is the point of electrical connection.
- 3. Peel the adhesive backing from the TILE Interior Corner and stick it to the mounting surface with the snap connectors adjacent to the Connector Strip. Appropriate #6 (M4) fasteners may be added using the holes located in the center of each small square section.

NOTE: For rough surfaces such as plywood or drywall (e.g. sheetrock, gypsum board) mechanical fasteners must be used.



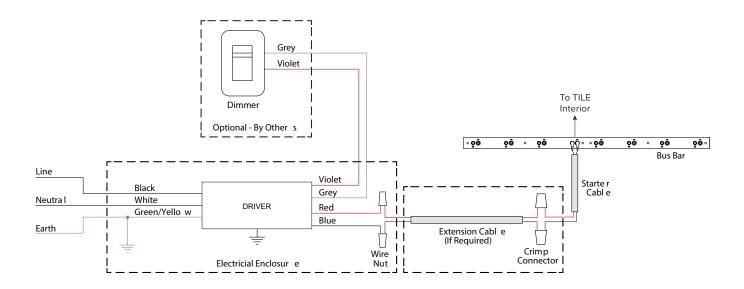




WARNING - DO NOT CONNECT the AC power directly to the TILE Interior or Connector Strip. All AC connections are to be made within the LED driver enclosure.



WARNING - DO NOT CONNECT positive (white) wires to negative (black) wires when wiring Starter Cables to the LED Driver. Permanent damage will occur.





DISCONNECT POWER TO THE SYSTEM before starting the following steps.

- 1. Mount the Enclosed Driver at the required location using appropriate fasteners. If enclosure is to be recessed in a wall or ceiling, ensure proper access is available during installation to enable correct installation.
- 2. Connect the Starter Cable to the Connector Strip using the snap connectors. Guide the Starter Cable until end reaches the driver housing. If the drivers are located >10' (3m) from the Connector Strip, the Starter Cable should be connected to an Extension Cable using the crimps provided, or to an appropriate cable (supplied by others) that is sized to ensure voltage drop limits are not exceeded, please reference the project shop drawings.
- Cut the Starter Cable to length and strip the termination, or if the correct length, connect the bare conductors of the Starter Cable to the red and black conductors on the LED Driver inside the enclosure using wire nuts (or other method approved by local electrical codes).

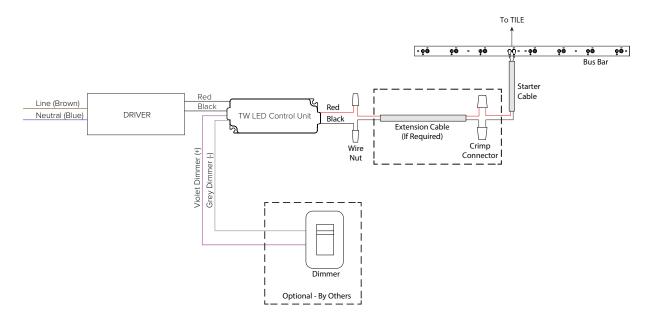
- **4.** Make the AC connection to the LED Driver within the enclosure using a method approved by local electrical codes.
- 5. If connecting a 0-10V or 1-10V dimmer, ensure that the grey and violet wires from the dimmer are connected to the corresponding wires on the driver.



WARNING - DO NOT CONNECT the AC power directly to the TILE Interior or Connector Strip. All AC connections are to be made within the LED driver enclosure.



WARNING - DO NOT CONNECT positive (white) wires to negative (black) wires when wiring Starter Cables to the LED Driver. Permanent damage will occur.

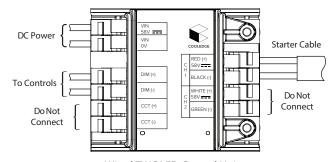




DISCONNECT POWER TO THE SYSTEM before starting the following steps.

- 1. Mount the Enclosed Driver at the required location using appropriate fasteners. If enclosure is to be recessed in a wall or ceiling, ensure proper access is available during installation to enable correct installation.
- 2. Connect the bare conductors of the Starter Cable to the indicated terminals on the TWC LED Control Unit. If required, shorten the cable to the appropriate length and strip the termination. Make sure the strain relief clamps the cable jacket in the TWC. Guide the Starter Cable until the end reaches the driver housing. If the drivers are located >10' (3m) from the Connector Strip, the Starter Cable should be connected to and Extension Cable using the crimps provided, or to an appropriate cable (supplied by others) that is sized to ensure voltage drop limits are not exceeded, please reference the project shop drawings.
- 3. Cut the Starter Cable to length and strip the termination, or if the correct length, connect the bare conductors of the Starter Cable to the red and black conductors on the LED Driver inside the enclosure using wire nuts (or other method approved by local electrical codes).

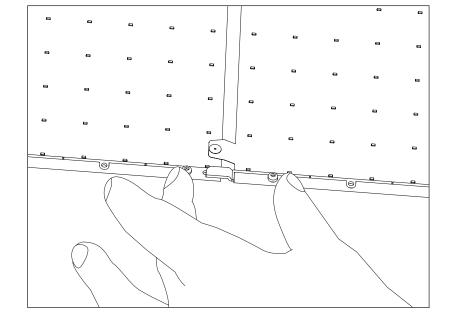
- **4.** Make the AC connection to the LED Driver within the enclosure using a method approved by local electrical codes.
- If connecting a 0-10V or 1-10V dimmer, ensure that the grey and violet wires from the dimmer are connected to the corresponding wires on the driver.



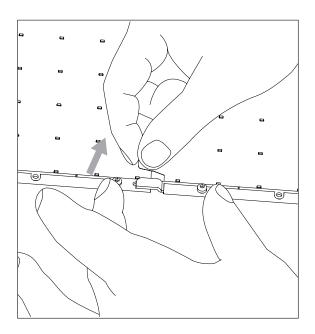
Wired TWC LED Control Unit



Caution - the snap connectors are not intended for repeated connections. If it is necessary to separate the sheets after the snap connectors have been mated together, it can be done as follows:



I. Grip the tab between the thumb and index finger. Gently separate the sheets while keeping the side rails restrained.



2. Similarly, when disconnecting Jumper Wires from the sheets or Connector Strips, the plastic material should be restrained while gently separating the connectors.

TILE Interior array configuration limitations and remote LED driver distances.

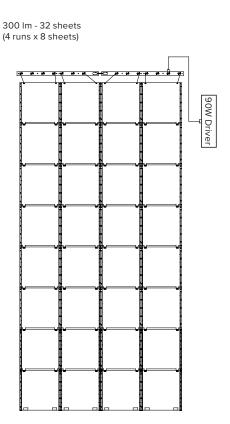
## TILE INTERIOR CONFIGURATION LIMITS

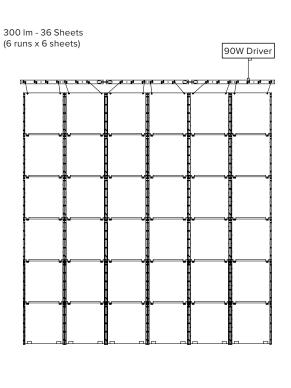
Table 1. TILEs Per Run

	600lm	600lm	300lm	150lm
# of Runs	(2700K & 3000K*)	(3500K, 4000K, & 5700K*)		
1	12	13	20	30 (Premium=28)
2	8	9	16	28
3	5	6	11	22
4	4	4	8	16
5	3	3	6	13
6	2	3	5	10
7	2	2	4	8
8	2	2	3	7

For 600lm TILE Premium use 2700K column

# **CONFIGURATION EXAMPLES**





#### REMOTE LED DRIVER DISTANCES - TILE INTERIOR

The tables below show the cable conductor size (AWG/mm) vs. the distance (ft/m) from the TILEs that a remote LED driver may be located as a function of the configuration (#Runs x #TILEs per Run).

#### TILE INTERIOR: 150LM (VALUES IN FT)

Conductor Size (AWG)	1x30	2x28	3x22	4x16	5x13	6x10	7x8	8x7
18	10	6	9	13	13	14	15	13
16	16	10	14	21	20	22	24	21
14	26	16	23	33	32	36	38	34
12	41	25	36	53	50	57	60	53
10	65	40	58	84	80	90	95	85
8	103	63	92	133	128	143	152	135
6	164	100	146	212	203	228	241	215

### TILE INTERIOR: 150LM (VALUES IN M)

Conductor Size (mm2)	1x30	2x28	3x22	4x16	5x13	6x10	7x8	8x7
0.8	2	1	3	4	5	5	6	5
1.3	4	1	4	7	7	9	9	9
2.1	63	2	7	11	12	14	15	14
3.3	10	4	11	18	19	22	23	22
5.3	15	6	17	28	30	34	57	56
8.4	24	9	27	45	47	55	59	56
13.3	39	14	43	72	75	87	94	90

#### TILE INTERIOR: 300LM (VALUES IN FT)

Conductor Size (AWG)	1x20	2x16	3x11	4x8	5x6
18	11	11	14	16	17
16	17	18	23	25	26
14	27	28	36	40	42
12	42	45	58	64	67
10	67	71	92	102	106
8	107	113	146	162	168
6	170	180	233	257	268

### TILE INTERIOR: 300LM (VALUES IN M)

Conductor Size (mm2)	1x20	2x16	3x11	4x8	5x6
0.8	1	3	5	5	6
1.3	2	5	7	9	9
2.1	4	7	3	14	15
3.3	6	12	19	22	24
5.3	9	19	30	35	38
8.4	15	30	48	56	60
13.3	23	48	76	89	96

## TILE INTERIOR: 600LM (VALUES IN FT)

Conductor Size (AWG)	2x8	3x5	4×4
18	6	12	9
16	9	18	14
14	15	29	22
12	24	46	35
10	38	74	56
8	60	115	85
6	95	185	140

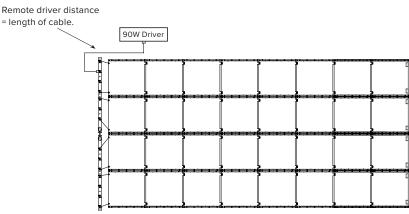
### TILE INTERIOR: 600LM (VALUES IN M)

Conductor Size (mm2)	2x8	3x5	4x4
0.8	5	6	6
1.3	8	10	10
2.1	13	16	16
3.3	21	26	25
5.3	33	42	40
8.4	53	66	63
13.3	84	105	101

## **COOLEDGE CABLES**

- Cooledge supplies Starter Cables 16AWG (1.3mm2) with all LED Drivers of length = 10ft (3m)
- Cooledge offers optional Extension Cables 16 AWG (1.3mm) in lengths = 10ft (3m), 20ft (6m), and 50ft (15m)
- Other cable sizes (if required) supplied by installer

#### Remote driver distance



#### 9.0 TROUBLESHOOTING

If the TILE Interior does not illuminate when power is applied:

- Check to ensure all electrical connections have been made.

If a single LED or one (1) section of LEDs on a TILE Interior does not illuminate:

 The circuit for those LEDs has likely been damaged and the TILE Interior should be replaced.

#### **10.0 PRODUCT SUPPORT**

Contact Cooledge Technical Support at:

E: apps.engineering@cooledgelighting.com

O: +1.604.273.2665

T: 1.844.455.4448 (toll free - North America)

#### 11.0 WARRANTY

Cooledge warrants that the products manufactured, distributed or sold by it will:

- **1.** Be free of any claim of ownership by third parties
- Be conforming to the Specifications and free from defects in materials and workmanship under normal use, handling, warehousing and service.

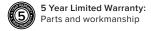
The warranty period specified in the Cooledge Warranty Terms and Conditions for the products will be for a period of five (5) years from the shipment date of any products sold by Cooledge.







**RoHS** 



EN 60598 Compliant (as a system)