COOLEDGE™

PROJECT		REFERENCE TYPE	
SPECIFIED BY		QUANTITY	
DATE		NOTE	For Luminous Surfaces

SYSTEM OVERVIEW
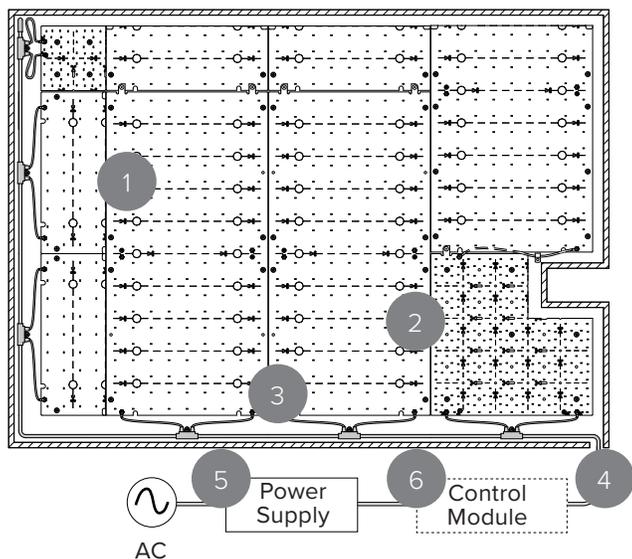
Replicate natural light both in scale and through dynamic changes in color temperature

1	TILE Tunable White
2	TILE Tunable White Cut-out Kit *(optional)*
3	TILE Tunable White T-Cable
4	TILE Tunable White Starter Cable*
5	Power Supply
6	Control Module

Included in TILE Tunable White Starter Kit

GENERAL

Location	Indoor, dry location only
Operating Temp.	0-40°C (32-104°F)
Storage Temp.	-40-85°C (-40-185°F)
Relative Humidity	90% max (non-condensing)
Input Voltage (to power supply)	120-277 VAC
Electrical Connections	Tool-less snap connectors
Mounting Surface	Non-conductive* (drywall, plywood, etc)

Mounting to a conductive surface may void warranty. Please contact Cooledge if this is required

SPECIFICATION

UL Listed lighting system inclusive of flexible light emitting sheets, connectors, low voltage cables, and power & controls. Light output from the system must be +/- 10% of the specified luminous flux value across the total illuminated area post-installation.

The lighting system must have a Color Rendering index (CRI) >90 and provide constant lumen output for all CCTs between 2700K-5700K/2200K-3500K and for all dimming levels. Electrical connections between cables and light emitting sheets must be tool-less and allow more than one connect/disconnect iteration. System must be configurable on-site and include the capability to accommodate obstacles, angles, and curves. System warranty is a minimum of 5 years.

FEATURES

– Unique tunable white system design provides constant lumen output at all CCTs in the range 2700K-5700K or 2200K-3500K and at all dimming levels
– Dim-to-warm option provides smooth dimming along the CCT curve to 0.10% from 3500K to 2200K
– Cooledge Control Modules are available with inputs for 0-10V, DALI, DMX, and wireless (Casambi or Athena) protocols
– Uniquely suited for installations requiring high CRI such as retail and hospitality
– Cut-to-fit means systems are adaptable to any size installation and can accommodate obstacles and shapes

PHOTOMETRICS[1]

Light Output (lm/sqft)	900, 600, 300, 150 , 465[3], 225[3], 100[3]
Correlated Color Temperature (CCT)	Tunable White = 2700K-5700K, 2200K-3500K Dim-to-Warm = 3500K-2200K
Color Rendering Index (CRI)	≥ 90 (except 2200K, CRI88)
Color Uniformity	2 SDCM (typical)
Lumen Maintenance[2]	L80 = 75,000hr

1 Photometric files available from cooledgelighting.com
2 Based on LM80 data & TM-21 calculations
3 Available for Tunable White 2700K-5700K only

IESNA TM-30-18 DATA

CCT	Rf	Rg
2200K	91	99
2700K	91	100
3500K	88	97
5700K	87	97
DTW*	90	100
TNW*	89	100

* Denotes both channels @50% (TNW = 2700K-5700K)

POWER

Light Output (lm/sqft)	CCT	Power (W/sqft)	EcoDesign Class
900	2200K	7.7	E
	2700K	6.9	D
	3500K	6.2	D
600	2200K	5.0	E
	2700K	4.6	E
	3500K	4.1	D
300	2200K	2.5	E
	2700K	2.3	E
	3500K	2.0	D
150	2200K	1.2	E
	2700K	1.1	E
	3500K	1.0	D

Light Output (lm/sqft)	CCT	Power (W/sqft)
465	2700K	3.6
225		1.7
100		0.8

Notes:
TNW 2700-5700K >> for determining load, 2700K has the maximum power rating

1 Photometric files available from cooledgelighting.com
2 Based on LM80 data & TM-21 calculations
3 Available for Tunable White 2700K-5700K only

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BUILD-TO-ORDER

For applications that require a more precise selection of flux/power combinations than is offered by standard TILE Tunable White, Cooledge offers a "Build-To-Order" (BTO) program that allows you to choose a non-standard flux/power combination to optimize for power density while still meeting the required illuminations levels for your design.
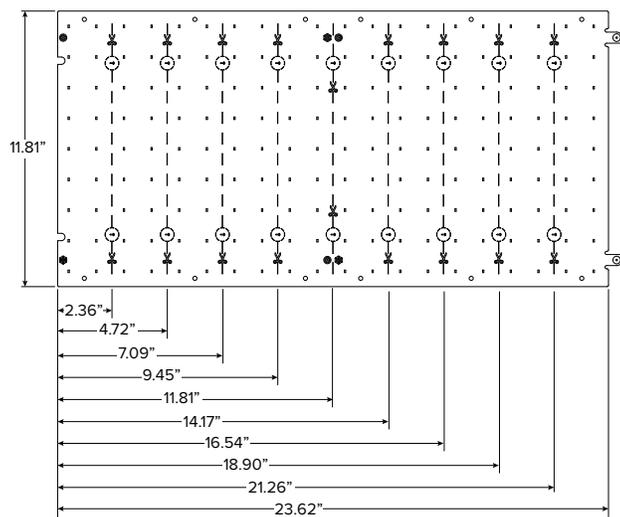
Refer to the table below and select either a desired power level with corresponding light output level, or conversely, choose the minimum flux level that delivers the required illumination to determine the power level.

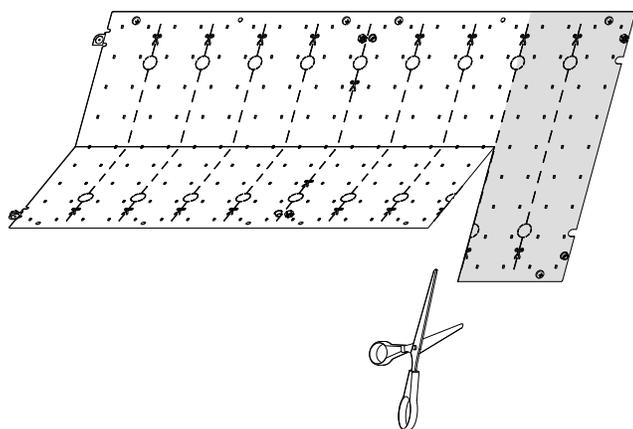| Flux (lm/sqft)	2200K	2700K	3000K	3500K	4000K	5700K	Flux (lm/sqft)	2200K	2700K	3000K	3500K	4000K	5700K
100	0.8	0.7	Standard			0.7	650	5.5	5.0	4.6	4.5	4.5	4.5
125	1.0	0.9	0.9	0.8	0.9	0.9	675	5.7	5.2	4.8	4.6	4.7	4.7
150			Standard				700	5.9	5.4	5.0	4.8	4.8	4.9
175	1.4	1.3	1.3	1.2	1.2	1.2	725	6.2	5.6	5.2	5.0	5.0	5.0
200	1.6	1.5	1.5	1.4	1.4	1.4	750	6.4	5.8	5.4	5.2	5.2	5.2
225	1.9	1.7	Standard			1.6	775	6.6	6.0	5.5	5.3	5.4	5.4
250	2.1	1.9	1.8	1.7	1.7	1.7	800	6.8	6.2	5.7	5.5	5.5	5.6
275	2.3	2.1	2.0	1.9	1.9	1.9	825	7.0	6.4	5.9	5.7	5.7	5.7
300			Standard				850	7.2	6.6	6.1	5.8	5.9	5.9
325	2.7	2.5	2.3	2.2	2.3	2.3	875	7.5	6.7	6.2	6.0	6.0	6.1
350	2.9	2.7	2.5	2.4	2.4	2.4	900			Standard			
375	3.1	2.9	2.7	2.6	2.6	2.6	925	7.9	7.1	6.6	6.4	6.4	6.4
400	3.4	3.1	2.9	2.7	2.8	2.8	950	8.1	7.3	6.8	6.5	6.6	6.6
425	3.6	3.3	3.0	2.9	2.9	3.0	975	8.3	7.5	6.9	6.7	6.7	6.8
450	3.8	3.5	3.2	3.1	3.1	3.1	1000	8.5	7.7	7.1	6.9	6.9	7.0
465	3.9	3.6	Standard			3.2	1025	8.8	7.9	7.3	7.0	7.1	7.1
500	4.2	3.8	3.6	3.4	3.5	3.5	1050	9.0	8.1	7.5	7.2	7.2	7.3
525	4.4	4.0	3.8	3.6	3.6	3.6	1075	9.2	8.3	7.7	7.4	7.4	7.5
550	4.7	4.2	3.9	3.8	3.8	3.8	1100	9.4	8.5	7.8	7.6	7.6	7.7
575	4.9	4.4	4.1	3.9	4.0	4.0	1125	9.6	8.7	8.0	7.7	7.8	7.8
600			Standard				1150	9.8	8.9	8.2	7.9	7.9	8.0
625	5.3	4.8	4.5	4.3	4.3	4.3	1175	10.0	9.1	8.4	8.1	8.1	8.2

Notes:

1 Power levels shown are for TILEs only. Power consumption calculations should include consideration of power supply efficiency, and any electrical losses associated with a specific circuit design.

2. Luminous flux values are based on calculations with a tolerance of ±5% of the value shown.

3. BTO products are subject to longer lead times and increased prices compared to standard TILE Tunable White light output options.

4. BTO is available for Tunable White 2700K-5700K.

Power values should be selected for 2700K.

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1 TILE TUNABLE WHITE

11.81"

2.36"
4.72"
7.09"
9.45"
11.81"
14.17"
16.54"
18.90"
21.26"
23.62"

Weight = 0.18lbs/ 82g

HOW TO ORDER

Example: TILE-TUN-600-TNW2757-R3

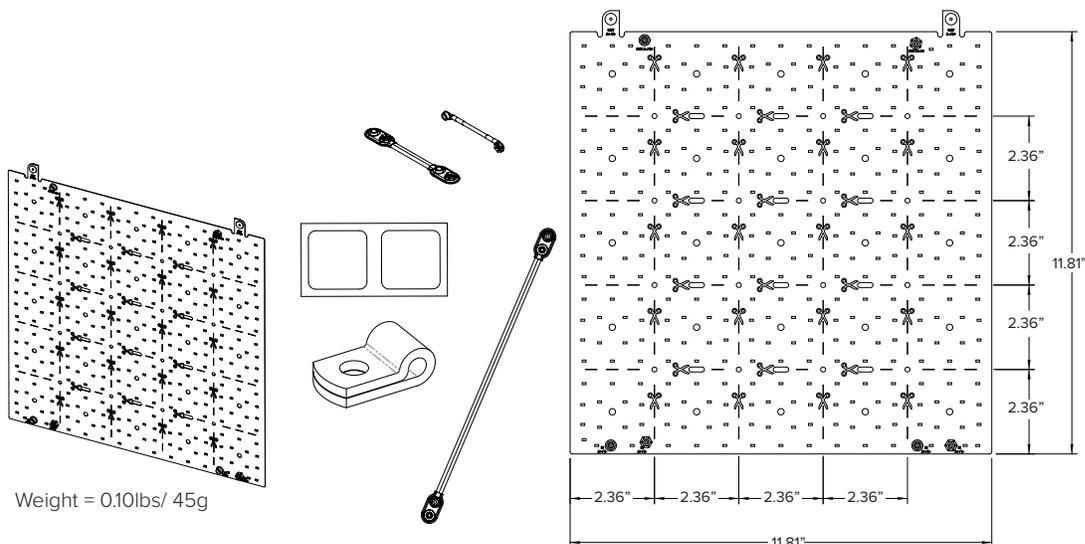| TILE	-	TUN	-		-		-	R3
PRODUCT TILE		TYPE TUN = Tunable White		FLUX 900 = 900lm/sqft 600 = 600lm/sqft 300 = 300lm/sqft 150 = 150lm/sqft 465* = 465lm/sqft 225* = 225lm/sqft 100* = 100lm/sqft BTO = Build To Order		CCT TNW2757 = 2700-5700K TNW2235 = 2200-3500K DTW3522 = 3500-2200K		Version R3 = Revision 3

*Available for TNW 2700-5700K

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2 TILE TUNABLE WHITE CUT-OUT KIT

Purpose: Cut-to-fit around obstacles located in a luminous surface such as standoffs, support cables/rods, beams, pipes, etc.; used in corners where a full TILE does not fit in the space; or to step cut along angles and curves at the edge of a luminous surface. (Optional)

INCLUDED

– (1) Cut-out TILE (11.8"x 11.8")

– (2) Insulating Patches

– (1) Cable Clamp

– (1) Single-connector Jumper Cable

– (1) Double-connector Jumper Cable

Weight = 0.10lbs/ 45g

2.36"
2.36"
2.36"
2.36"
11.81"

2.36" — 2.36" — 2.36" — 2.36"
11.81"

HOW TO ORDER

Example: TACC-TUN-CUT-600-TNW2757-K-R3

| TACC	-	TUN	-	CUT	-		-		-	K-R3
PRODUCT TACC = TILE Accessory		TYPE TUN = Tunable White		COMPONENT CUT = Cut-out Kit		FLUX 900 = 900lm/sqft 600 = 600lm/sqft 300 = 300lm/sqft 150 = 150lm/sqft 465* = 465lm/sqft 225* = 225lm/sqft 100* = 100lm/sqft BTO = Build To Order		CCT TNW2757 = 2700-5700K TNW2235 = 2200-3500K DTW3522 = 3500-2200K		KIT K = Kit Revision 3

*Available for TNW 2700-5700K

3 TILE TUNABLE WHITE T-CABLE

Purpose: Makes the electrical connection to the first TILE in each run from the Starter Cable that supplies power from the power/control components. Each "T" connects to a TILE via snap connectors. (Required)

HOW TO ORDER

Example: TCBL - TUN-T10

| TCBL	-	TUN	-	
PRODUCT TCBL = TILE Cable				TYPE T4 = 4 T-Connectors (weight = .13lb) T10 = 10 T-Connectors (weight = .66lb)

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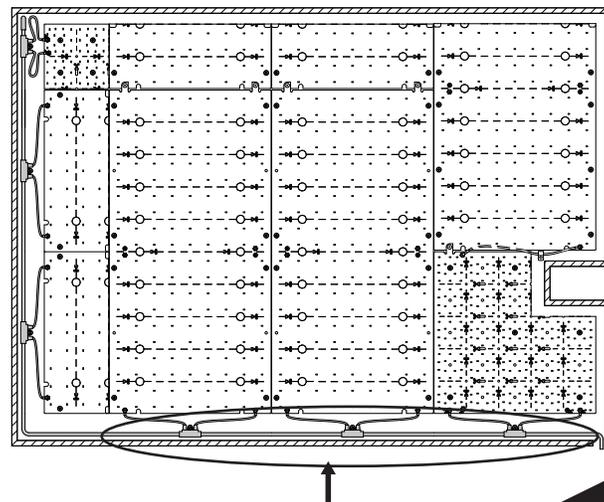
4 TILE TUNABLE WHITE STARTER KIT

Purpose: Includes the Starter Cable that makes the connection from the Control Module to the T-Cable and other accessories required for wire termination and connections. Insulation patches are required to cover areas of TILEs where cuts have been made. (Required)

INCLUDED

– (2) Single-connector Cut TILE Reuse Jumper Cables

– (2) Double-connector Cut TILE Reuse Jumper Cables

– (2) Splice Connectors

– (4) End Caps

– (10) Insulating Patches

– (1) 10ft (3m) Starter Cable with Connector

– (1) Quick Strart Guide

Quick Start Guide

Control Module
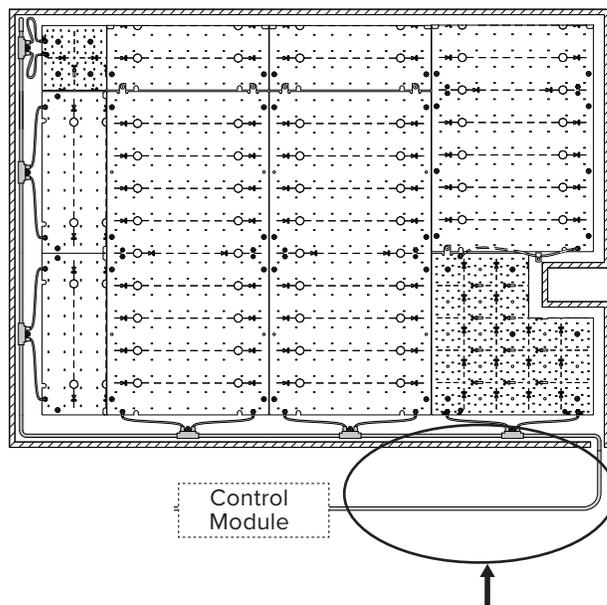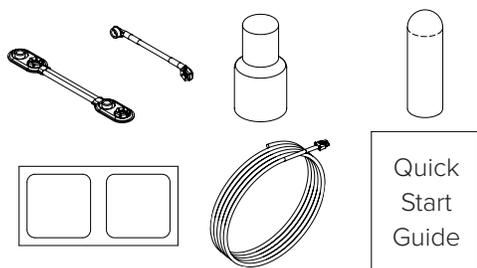
HOW TO ORDER

Example: TACC-TUN-STR-K

TACC	-	TUN	-	STR	-	K
PRODUCT TACC = TILE Accessory		TYPE TUN = Tunable White		TYPE STR = Starter		KIT K = Kit

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5 POWER AND CONTROL

Specifications for the power supplies and Cooledge Control Modules shown below are available in:
- Power and Control Specifications (UL Listed)

The models shown below are those that are compatible with TILE Tunable White Systems for regions where cUL Listed products are required.

POWER SUPPLIES (54V)

Purpose: Convert AC main (line) power to safe, low voltage DC power.

Order Code	Description	# Controller Channels*	Integrated Wiring Enclosure
EPSS-400-54V-UL	400W Power Supply, 54V (UL Listed) with integrated junction box	2 + 2**	Yes
EPSS-200-54V-UL	200W Power Supply, 54V, (UL LIsted) with integrated junction box	2	Yes
EPSS-092-54V-UL	92W Power Supply, 54V (UL Listed) with integrated junction box	1	Yes

*Class 2 (max. 90W) output
3-wire connection to TILES

**Requires 2 Control Modules

COOLEDGE CONTROL MODULES (54V)

Purpose: Receives 54VDC power from the power supply and converts it to max. 90W per channel of controlled output to drive TILE Interior sheets. Also receives input control signal to control dimming levels.

Order Code	Function	Protocols
CTR-TNW-DAL/010-48/58V	Tunable White	0-10V, DALI
CTR-TNW-DMX-48/58V	Tunable White	DMX
CTR-TNW-CAS-48/58V	Tunable White	Casambi (Wireless)
CTR-TNW-ATH-48/58V	Tunable White	Athena (Wireless)
CTR-DTW-DAL/010-48/58V	Dim-to-Warm	0-10V, DALI
CTR-DTW-DMX-48/58V	Dim-to-Warm	DMX
CTR-DTW-CAS-48/58V	Dim-to-Warm	Casambi (Wireless)

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ADDITIONAL ACCESSORIES

EXTENSION CABLES

– 16 AWG cable (non-plenum rated)

– Available in 10' & 20' lengths

Purpose: Cable between TILE Starter Cable and Control Module that extends the distance the Control Module and power supply may be remotely located away from the TILEs. Please consult Cooledge for additional information including requirements for plenum rated cables.
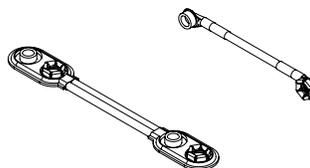
HOW TO ORDER

Example: TCBL - TUN - LNG - 10

TCBL	-	TUN	-	LNG	-	
PRODUCT TCBL = Extention Cable		TYPE TUN = Tunable White				LENGTH 10 = 10ft (3m) 20 = 20ft (6m)
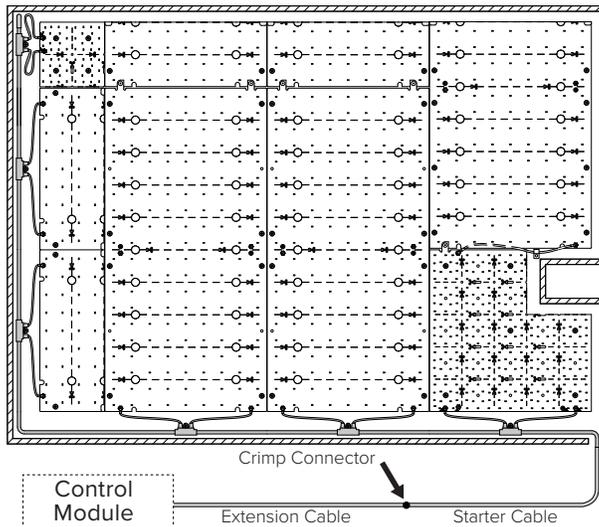
JUMPER CABLES

– 5 sets of double and single-connector jumper cables

Purpose: Allows a TILE to be cut in half and both portions connected in separate runs. Kit sufficient for 5 cut TILEs.

HOW TO ORDER

Example: TACC - TUN - JMP - 5

TACC	-	TUN	-	JMP	-	5
PRODUCT TACC = Jumper Cables		TYPE TUN = Tunable White				

Control Module · Crimp Connector · Extension Cable · Starter Cable

CERTIFICATIONS

WARRANTY

5 Year Limited Warranty:
Parts and workmanship when used with a Cooledge approved power supply.

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