

# COVELUM™ LED COLORS

Architectural design quality LED modules for use with Covelum™ LED, create color specific illumination for recessed applications.

CAT:		FEET:	
TYPE:	PROJECT:		

## FEATURES

- For color specific applications to create precise colors correlated to the Pantone color chart
- Flexible field cuttable dual wire system bends 90° easily to fit concave and convex curves without special hardware
- Designer quality LED modules create color specific illumination
- Low maintenance, energy efficient lighting for high or low ambient light interior applications
- More information on Tivoli Designer Series Colormix available at [www.TIVOLICOLORMIX.com](http://www.TIVOLICOLORMIX.com)
- Full range dimming available

## SPECIFICATIONS

COVELUM LED DESIGNER COLORS	EFFICACY LM/WT	LM/FT	LM/MODULE	WT/FT	WT/MODULE
Blue at 2.5" O.C.	15.8	57	11.4	3.6	0.75
Green at 2.5" O.C.	<b>75.8</b>	273	54.6	3.6	0.75
Yellow at 2.5" O.C.	33.3	120	24	3.6	0.75
Orange at 2.5" O.C.	<b>55.8</b>	201	40.2	3.6	0.75
Red at 2.5" O.C.	<b>44.2</b>	159	31.8	3.6	0.75

Items in bold denote Title 24 High efficacy rating. Measurements are based on 12V DC power and 0.75W design calculations will vary based on power supply and run lengths.

LED DATA RATED TO LM80 STANDARDS	WATTAGE	LED LIFE* / COLOR TEMP	VIEWING ANGLE
LED Superflux module with 6 Triple Chip LEDs	0.75W per PCB	<b>40,000 hrs.</b> Cool Hues	150°
		<b>80,000 hrs.</b> Warm Hues	

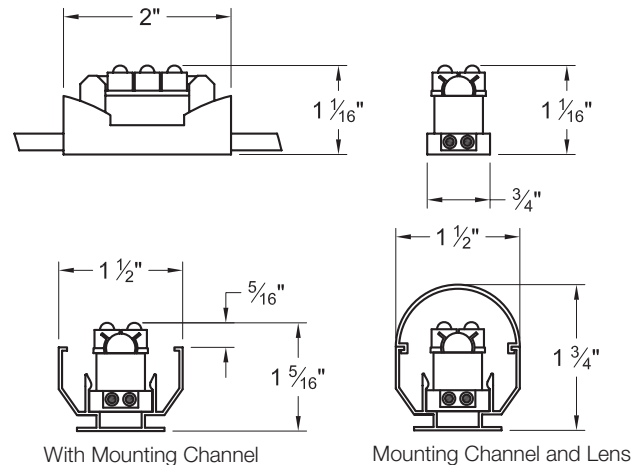
\* Ultra Bright Triple Chip LEDs are manufactured on fuse style PCB modules in 2 each 3 LED series orientation and operate at 52% of LED manufacturers maximum current spec rating.

1. **Spacing** - Lamp spacing: 2.5", 3", 4" O.C.
2. **LED PCB** - Uses 0.75W, 12VDC LED modules in fuse style envelope
3. **Adjustability** - +/-45° Directional LED modules (90° total adjustability) offer the ability to manually set the angular throw of light individually, distributing light over a 150° beam spread
4. **Colors** - Designed static colors available by Pantone number. 48 different colors available, and counting!
5. **Mounting** - Aluminum mounting channel for linear mounting or mounting clamps (2 per foot) for curved or arched applications
6. **Lens** - Linear lens mounts in channel to protect LEDs from direct contact
7. **Max run length** - Continuous: 50' (215 PCB's per 15A circuit)
8. **Power Supply** - Listed Class I or II 12V DC power supply required
9. **Listing** - ETL dry listed for indoor Class I or II applications
10. **Warranty** - 3 Year Warranty



Covelum™ LED with 2.5" O.C. Super Flux Modules

## PROFILES



## COVELUM LED ORDER SPECIFICATION GUIDE

Example: CLL-DS-2.5-M-3265-12

PRODUCT CODE	LED TYPE	LED SPACING	COLOR TYPE	LED COLOR	VOLTAGE	REQUIRED POWER SUPPLY
CLL	DS	-	-	-	12	PSU
COVELUM™ LED	Designer Series	2.5 = 2.5" O.C. 3.0 = 3" O.C. 4.0 = 4" O.C.	S = Standard Colors M = Colormix	See Page 3 for Design Series color selection	12 = 12VDC	See power supply specsheets

## REQUIRED POWER SUPPLY OPTIONS

- ADUL-300-5-5-12-D
- ADUL-200-3-5-12-D
- ADUL-200-1-15-12-D
- ADUL-75-1-5-12-D
- QT-200-1-15-12-D
- QTH-200-1-15-12-D
- QT-400-2-15-12-D
- QTH-400-2-15-12-D
- QT-600-3-15-12-D
- QTH-600-3-15-12-D
- JT-240-4-5-12-D
- JTH-240-4-5-12-D
- JT-60-1-5-12-D
- JTH-60-1-5-12-D
- MT-60-1-5-12-D

## OPTIONAL DIMMERS

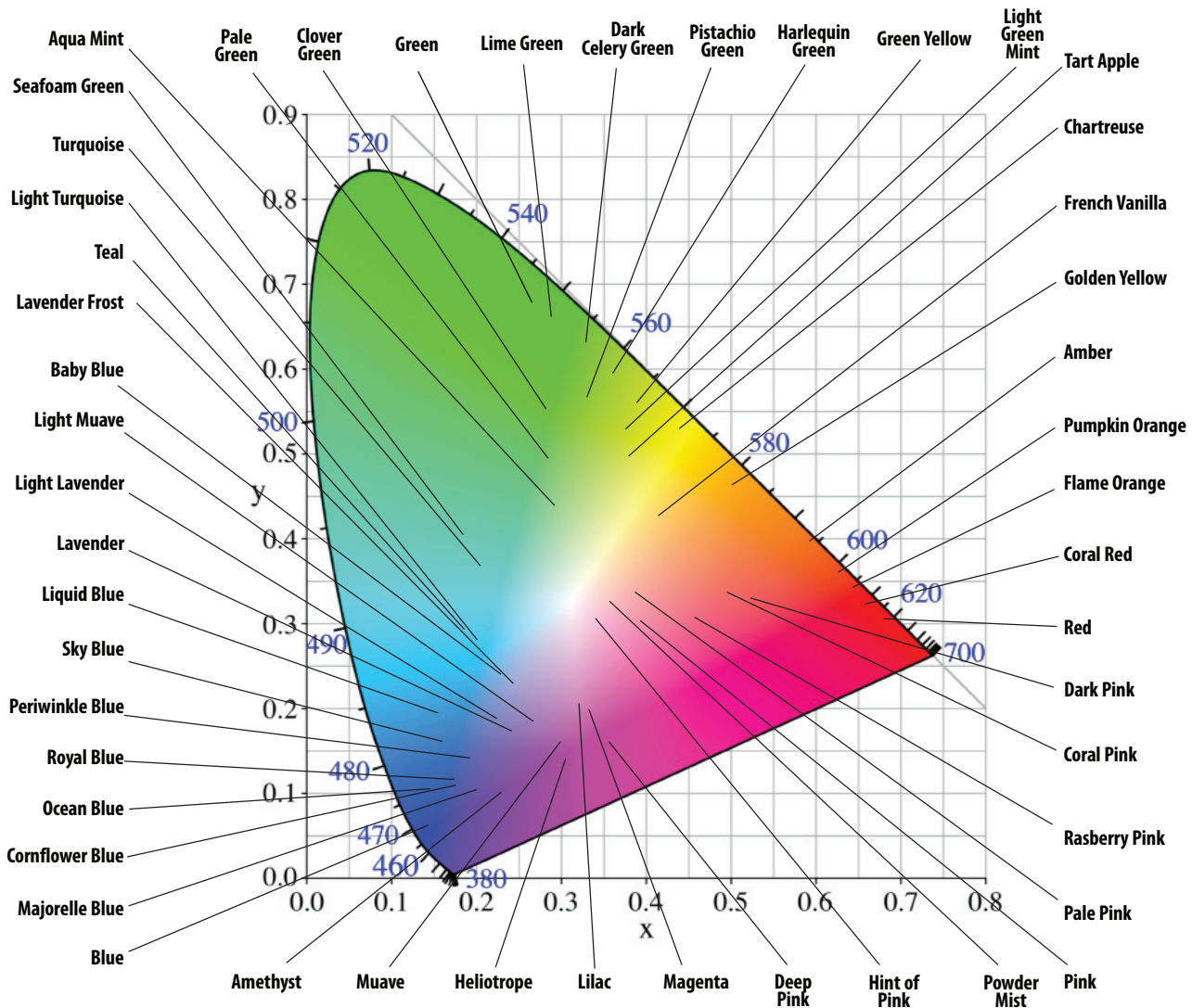
- N-600
- N-1000
- N-1500
- NH-600
- NH-1000
- DIM-12V-8A
- DIM-OT-1-5-D

See power supply specifications for more information

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# COVELUM™ LED COLORS



## MTBF

**Mean Time Between Failures (MTBF) for LEDs:** While Tivoli utilizes LEDs provided by industry leading vendors, these are electrical components with calculated manufacturers mean time between failures (MTBF). MTBF is rated as the average point at which 1/2 of color LEDs will lose 50% of their original brightness. MTBF for White LEDs is based on when 1/2 are reduced to 70% of their original brightness.

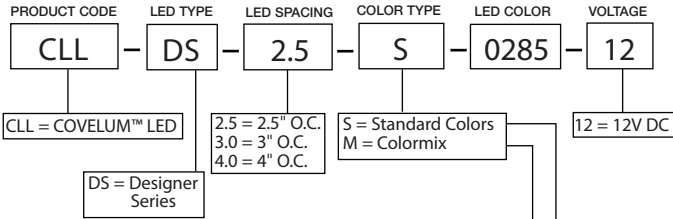
Typically, LED product failures occur within fixture construction, interdependent component failure, or operation under adverse conditions. Tivoli operates LEDs at a derated current to insure that LED MTBF values are based on product fixture construction and real application standards.

Still, conditions such as excessive voltage, vibration, heat, and other adverse conditions may negatively effect the life of LEDs.



# COVELUM™ LED COLORS

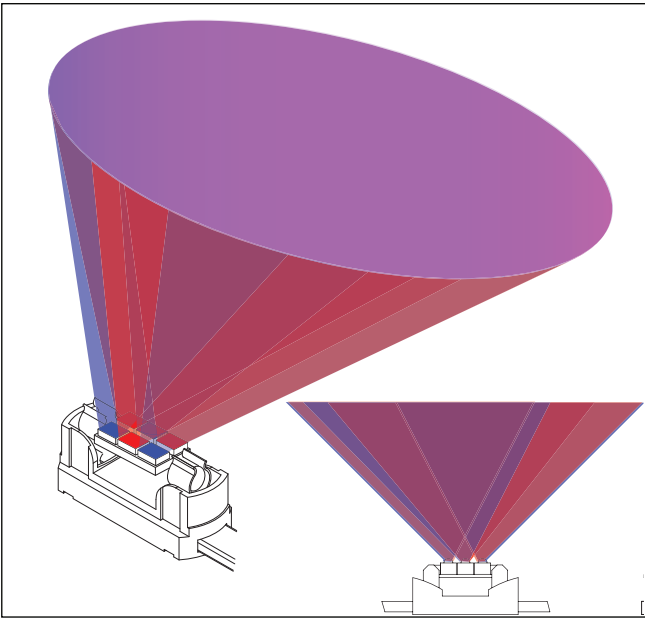
## COVELUM LED ORDER SPECIFICATION GUIDE



Standard Colors			
Pantone #	Color	X Axis	Y Axis
0285 =	Blue	0.1443	0.063
0137 =	Yellow	0.5889	0.3992
0354 =	Green	0.267	0.677
0185 =	Red	0.6802	0.3096

Colormix			
Pantone #	Color	X Axis	Y Axis
0705 =	Hint of Pink	0.3408	0.3115
0182 =	Pink	0.3937	0.3025
0217 =	Pale Pink	0.3870	0.3430
0190 =	Coral Pink	0.4899	0.3410
1777 =	Dark Pink	0.5205	0.3366
1787 =	Coral Red	0.6655	0.3233
0171 =	Flame Orange	0.6485	0.3414
1505 =	Pumpkin Orange	0.6253	0.3649
7401 =	French Vanilla	0.4170	0.4260
0108 =	Golden Yellow	0.5071	0.4608
0381 =	Chartreuse	0.4398	0.5248
0375 =	Green Yellow	0.3941	0.5650
7481 =	Lime Green	0.2797	0.6681
0360 =	Dark Celery Green	0.3283	0.6263
7488 =	Harlequin Green	0.3615	0.5942
0359 =	Pistachio Green	0.3286	0.5667
0358 =	Tart Apple	0.3780	0.4940
0366 =	Light Green Mint	0.3700	0.5290
0353 =	Pale Green	0.2780	0.4890
3385 =	Clover Green	0.2700	0.5530
0332 =	Aqua Mint	0.2960	0.4380
3252 =	Turquoise	0.2110	0.3660
3265 =	Seafoam Green	0.1840	0.4010
3262 =	Teal	0.1880	0.2920
0319 =	Light Turquoise	0.2050	0.2730
3125 =	Liquid Blue	0.1609	0.1938
2995 =	Sky Blue	0.1757	0.1630
2727 =	Royal Blue	0.1801	0.1172
0660 =	Periwinkle Blue	0.1975	0.1477
3005 =	Ocean Blue	0.1468	0.1076
0290 =	Baby Blue	0.2400	0.2460
7443 =	Powder Mist	0.3520	0.3290
2718 =	Cornflower Blue	0.1743	0.1126
2726 =	Majorelle Blue	0.2036	0.1115
0265 =	Amethyst	0.2342	0.1017
2645 =	Lavender	0.2485	0.1722
0264 =	Light Mauve	0.2697	0.1889
2707 =	Lavender Frost	0.2470	0.2280
2635 =	Light Lavender	0.2240	0.1880
0251 =	Lilac	0.3244	0.2095
0211 =	Raspberry Pink	0.4580	0.3074
0237 =	Magenta	0.3350	0.2000
2572 =	Mauve	0.3015	0.1585
0252 =	Heliotrope	0.3080	0.1370
2385 =	Deep Pink	0.3560	0.1640

## TIVOLI COLORMIX TECHNOLOGY

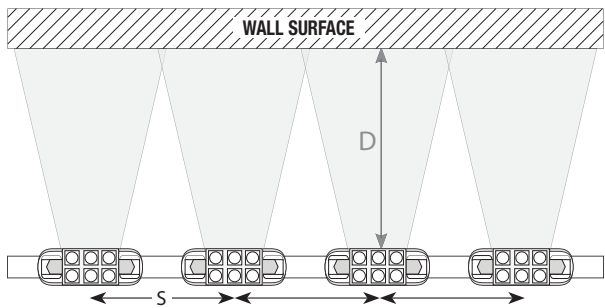


## LAMP SPACING GUIDE

D	S - RECOMMENDED SPACING
3-5"	No greater than 2.5" O.C.
5-6"	No greater than 4" O.C.
6" or greater	No greater than 6" O.C.

Different LED spacings can create dramatically varied effects. Tighter spacing is most appropriate for uniform lighting applications. The chart above is an example of uniform lighting based on spacing between module and distance to surface for even illumination.

**D** = Distance where uniform light is desired.  
**S** = On center lamp spacing.

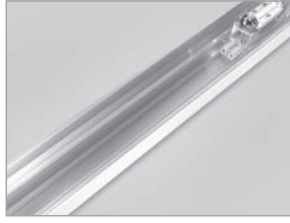


# COVELUM™ LED COLORS

## MOUNTING ACCESSORIES



**CLL-MC** Mounting Clamp  
Clear polycarbonate mounting clamp secures Covelum™ cable to surface with a single screw on each side of clamp. (Screws not provided.)



**CLL-CHAN-8** Aluminum Mounting Channel  
For straight run applications. Channel screws in place, lamp sockets fit into channel ensuring linear integrity and reducing installation time. The finish is standard satin aluminum. Comes in 8' sections.

### Lighting Effects Accessories.

Mounting clamps are recommended as a standard mounting accessory. This method is effective for curved or straight applications. Mounting clamps should be placed every 6".

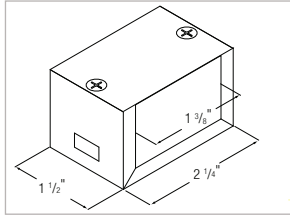
Mounting channel is recommended for uneven mounting surfaces or when applications require a cover. Clear lens covers are used to protect the Covelum LED modules from the environment without diminishing light output.

Opaque and Frosted lens covers are used to not only protect the Covelum LED module but to soften light for an even glow. Covelum LED module selection in conjunction with the opaque lens, is for low ambient or near dark light levels.

## WIRING ACCESSORIES



**CLL-JBOX** Junction Box  
Use to cover terminal block connections. One end of the terminal block screws directly into the Covelum™ LED lead wires, the other end accepts AWG # 10, 12, 14 wire from power supply. 1 each terminal block included.



**CLL-EC** End Caps  
Each length of Covelum™ LED can be terminated with PVC end caps to protect and insulate the conductors at the end of a run.

## ACCESSORIES & REPLACEMENTS



**CLL-LENS-C-8** Clear Lens  
**CLL-LENS-O-8** Opaque Lens  
**CLL-LENS-F-8** Frosted Lens  
Clear, opaque and frosted polycarbonate lens for channel, shields and protects lamps from direct contact. Comes in 8' sections (opaque lens shown).  
**CLL-CH-EC** Channel End Caps available



**REPLACEMENT PCB MODULES**  
**CLL-DS-S-XXXX-12** Standard Color\*  
**CLL-DS-M-XXXX-12** Colormix\*  
\* XXXX represents Pantone color coordinate  
Available colors shown on Page 3



**REPLACEMENT STRAND\***  
**CLL-RS-2.5** Replacement Strand - 2.5" O.C.  
**CLL-RS-3.0** Replacement Strand - 3.0" O.C.  
**CLL-RS-4.0** Replacement Strand - 4.0" O.C.  
\* Not including LED PCB modules

## RECOMMENDED POWER SUPPLIES

PART #	PRIMARY AND SECONDARY	TOTAL WATTAGE / AMPERAGE PER BREAKER	LISTING	DIMENSIONS	WEIGHT	ELECTRONIC OR AC MAGNETIC	DIMMABLE (Y OR N)
ADUL-75-1-5-12-D	85-264V AC / 12V DC	75 / 1X5A	UL/ETL	10"W X 10"L X 4"D		Electronic	Y: D & E
ADUL-200-1-15-12-D	85-264V AC / 12V DC	200 / 1X15A	UL/ETL	10"W X 10"L X 4"D		Electronic	Y: D & E
ADUL-200-3-5-12-D	85-264V AC / 12V DC	200 / 3X5A	UL/ETL	10"W X 10"L X 4"D		Electronic	Y: D & E
ADUL-300-5-5-12-D	85-264V AC / 12V DC	300 / 5X5A	UL/ETL	10"W X 10"L X 4"D		Electronic	Y: D & E
QT-200-1-15-12-D	120V AC / 12V DC	200 / 1X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: A
QTH-200-1-15-12-D	277V AC / 12V DC	200 / 1X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: F
QT-400-2-15-12-D	120V AC / 12V DC	400 / 2X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: A
QTH-400-2-15-12-D	277V AC / 12V DC	400 / 2X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: F
QT-600-3-15-12-D	120V AC / 12V DC	600 / 3X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: B, C, D & E
QTH-600-3-15-12-D	277V AC / 12V DC	600 / 3X15A	cCSAus	14.50"W X 8.00"L X 4.00"D		Magnetic	Y: G
JT-60-1-5-12-D	120V AC / 12V DC	60 / 1X5A	ETL	4.25"W X 8.50"L X 3.25"D		Magnetic	Y: A, D & E
JTH-60-1-5-12-D	277V AC / 12V DC	60 / 1X5A	ETL	4.25"W X 8.50"L X 3.25"D		Magnetic	Y: D, E & F
JT-240-4-5-12-D	120V AC / 12V DC	240 / 4X5A	ETL	8.50"W X 16.00"L X 4.50"D		Magnetic	Y: A, D & E
JTH-240-4-5-12-D	277V AC / 12V DC	240 / 4X5A	ETL	8.50"W X 16.00"L X 4.50"D		Magnetic	Y: D, E & F
MT-60-1-5-12-D	100-240V AC / 12V DC	60 / 1X5A	UL	4.25"W X 12.32"L X 4.00"D		Electronic	N

## DIMMERS

SELECTOR	DIMMER	TYPE	CONTROL SIGNAL	INPUT VOLTAGE	OUTPUT VOLTAGE	MAX LOAD	BREAKER RATING	DIMENSIONS
<b>A</b>	N-600	AC Magnetic	N/A	120V AC	120V AC	450W Max.	N/A	Recessed Single gang box
<b>B</b>	N-1000	AC Magnetic	N/A	120V AC	120V AC	800W Max.	N/A	Recessed Dual gang box
<b>C</b>	N-1500	AC Magnetic	N/A	120V AC	120V AC	1200W Max.	N/A	Recessed Dual gang box
<b>D</b>	DIM-12V-8A	DC Digital	N/A	12V DC	12V DC	96W	8A*	Single gang box
<b>E</b>	DIM-OT-1-5-D	Control Interface	1-10VDC	12V DC	12/24V DC	60W	5A**	7"L X 1½"W X ¾"H
<b>F</b>	NH-600	AC Magnetic	N/A	277V AC	277V AC	450W	N/A	Recessed Single gang box
<b>G</b>	NH-1000	AC Magnetic	N/A	277V AC	277V AC	800W	N/A </tr	

\* AD & QT Series secondary outputs would be limited to 8 amps.

\*\*OTDIM applications require 1 each OTDIM per 5 amp circuit

## PRODUCT SPECIFICATION GUIDE

SPACING	WATTS PER FOOT	PRODUCT MAX RUN LIMITATIONS (Ft/W/LED's)
2.5" O.C.	3.6W/ft	15A or 45ft
3" O.C.	3.0W/ft	15A or 54ft
4" O.C.	2.25W/ft	15A or 72ft

