

# 360 LED FASTUBE™ LIGHT TUBING

LED Tubing for areas requiring light emission  
in all directions (360°).

CAT:		FEET:	
TYPE:	PROJECT:		

## FEATURES

- LED indicator illumination for accent visible points of light applications
- Flexible round (1/2") or semi-rigid rectangular (1/4" x 5/16") clear tubing profile (Max length is 20')
- Full range dimming available

## SPECIFICATIONS

360° FASTUBE LED	EFFICACY LM/WT	LM/FT	LM/MODULE	WT/FT	WT/MODULE
White at 2" O.C. - T1 3/4 LED	8.38	15.51	0.17	1.85	0.24

Measurements are based on 12V DC power and design calculations will vary based on power supply and run lengths.

LED DATA RATED TO LM79 STANDARDS	WATTAGE	LED LIFE* / COLOR TEMP	VIEWING ANGLE
T1 3/4 360° LED	0.24W per LED	<b>40,000 hrs.</b> Blue White (5500°k +/-500°k) Warm White (2800°k +/-300°k)  <b>100,000 hrs.</b> Yellow	360°

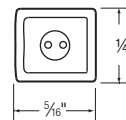
\* T1 3/4 360° LEDs are wired in parallel and operate at 52% of LED manufacturers maximum current spec rating.

1. **Spacing** - Lamp spacing: 2", 3" & 4" O.C.
2. **LED** - Uses 0.24W T1 3/4 360° LEDs, parallel wired
3. **Mounting** - Mounting channel for linear mounting or mounting clips (1 per foot) for radius curved applications
4. **Effects** - Chase circuit available, consult factory
5. **Installation** - Wired in parallel (Each LED independently wired) for field-cut solutions. Product is shipped "lead-wire / dead-end" as standard. See accessories for "lead-wire / lead-wire" option
6. **Max LEDs per Feed** - 200 LED's
7. **Power Supply** - Listed Class II 12V DC power supply required
8. **Listing** - UL wet listed for indoor or outdoor Class II applications
9. **Warranty** - 3 Year Warranty



## PROFILES

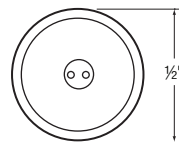
### FTL-03 SEMI-RIGID



### Rectangular Tube - 1/4" x 5/16" Polycarbonate

- Clean edge or mortised fit into extrusions for steps and paths, tile, woodwork and mirrors; route into floors and walls
- Bends to a 6" minimum radius
- Color: Clear

### FTL-05 ULTRAFLEX



### Round Ultraflex Tube- 1/2" dia. Vinyl (Tygon)

- For use with 360° Illumination LED tubing
- Standard for surface mounting, also may be draped or sewn into fabric banners or theatrical curtains
- Enough flexibility for contoured forms
- Bends any radius with mounting clamps
- Color: Clear

## FASTUBE 360 LED ORDER SPECIFICATION GUIDE

Example: FTL-03-02-WH-10-12-W

PRODUCT CODE	PROFILE	LED SPACING	LED COLOR	LENGTH	VOLTAGE	WET LISTED OPTION	REQUIRED POWER SUPPLY
FTL	-	-	-	-	12	W	PSU
FASTUBE 360™	03 = 1/4" x 5/16" Rectangular 05 = 1/2" Round Ultraflex	02 = 2" 03 = 3" 04 = 4"	YL = Yellow BL = Blue WH = White WW = Warm White	2 = 2' 4 = 4' 6 = 6' 8 = 8' 10 = 10' 15 = 15' 20 = 20'	12 = 12VDC	Wet listed option requires exact length measurement and weather seal end-prep accessory option	See power supply specsheets

### Ordering Information

Products are manufactured to customer specified lengths.

A light tube guide or drawing should accompany each order showing each tube length.

## REQUIRED POWER SUPPLY OPTIONS

- ADUL-300-5-5-12-D
- ADUL-200-3-5-12-D
- ADUL-75-1-5-12-D
- ADN-300-5-5-12-D
- ADN-200-3-5-12-D
- ADN-75-1-5-12-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

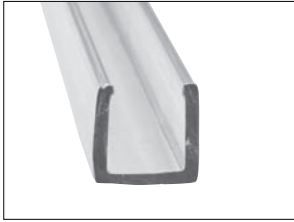
See power supply specifications for more information

- ## OPTIONAL DIMMERS
- N-600
  - N-1000
  - NH-600
  - NH-1000
  - DIM-12V-8A
  - DIM-OT-1-5-D

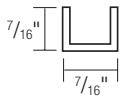


# 360 LED FASTUBE™ LIGHT TUBING

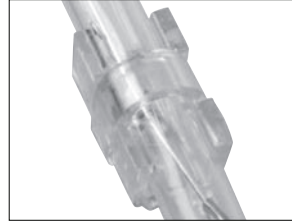
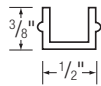
## MOUNTING ACCESSORIES



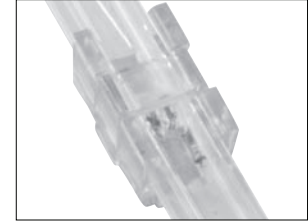
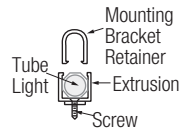
**FTL-TC-2015** Mounting Channel  
Clear rigid polycarbonate mounting channel creates a straight linear application effect.



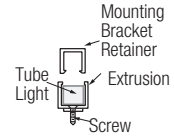
**FTL-TC-2030** Mounting Channel  
White flexible PVC mounting channel. Side shape allows for secure embedded application to poured cement areas with enough rigidity to outline any linear form.



**FTL-05-BMC** Mounting Clamp  
Clear two-piece polycarbonate mounting clamp for the FTL-05 rounded profile tubing.



**FTL-03-BMC** Mounting Clamp  
Clear two-piece polycarbonate mounting clamp for the FTL-03 rectangular profile tubing.



## WIRING ACCESSORIES



### FASTUBE CONNECTOR

**KITS:** 9 feet 22GA wire, 7 each plugs w/notch, 7 each dead end plugs, 14 each miniature crimp connectors, 4 pieces of 11/2" shrink tube, 2 each replacement lamps, instructions.

**FTL-03-KIT-3I-BL** Fastube connector kit for FT1003 - Blue.

**FTL-03-KIT-3I-WH** Fastube connector kit for FT1003 - White.

**FTL-03-KIT-3I-WW** Fastube connector kit for FT1003 - Warm White.

**FTL-03-KIT-3I-YL** Fastube connector kit for FT1003 - Yellow.

**FTL-05-KIT-3I-BL** Fastube connector kit for FT1005 - Blue.

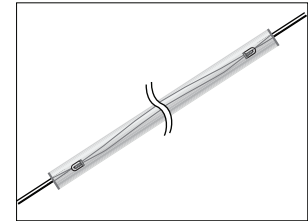
**FTL-05-KIT-3I-WH** Fastube connector kit for FT1005 - White.

**FTL-05-KIT-3I-WW** Fastube connector kit for FT1005 - Warm White.

**FTL-05-KIT-3I-YL** Fastube connector kit for FT1005 - Yellow.

**XEP** Extra length lead wire (per foot)

**DBL-TP** Double sided tape



**FTL-03-EP-D** Lead wire / lead-wire end prep for rectangular product profile

**FTL-05-EP-D** Lead wire / lead-wire end prep for round product profile

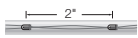
# 360 LED FASTUBE™ LIGHT TUBING

## LED SPACING

Different LED spacings can create dramatically varied effects. Tighter spacing is most appropriate for close range viewing applications.

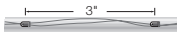
- LED spacing: 2", 3" and 4" O.C. standard. Any spacing may be used with all tube profiles.
- The first and last light on each tube is placed one half of the specified lamp spacing distance from the end of the tube so when tubes are linked, spacing remains uniform throughout.
- Each spacing is individually rated for energy consumption by linear foot. All ratings include a 20% safety factor.

## LED SPACING EFFECTS



### Maximum Sparkle at Close Range.

- Maximum intensity
- Works well in high ambient light areas
- Forms continuous tubes of light.
- Rated 1.44W per foot at 2" O.C.



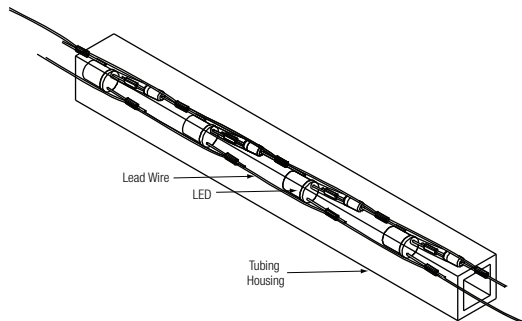
### High Intensity for Close Viewing.

- Excellent choice for highlighting and delineation when viewed from at least 10 feet.
- Cost effective at short to medium range distances.
- Rated 0.96W per foot.



### Highlight for Mid-Range Viewing.

- Used for highlighting subjects at viewing distances from 10 to 20 feet.
- From an angled perspective, the lights appear closer together than they really are.
- Preferred when the project requires greater lengths of tubing.
- Rated 0.72W per foot.



## LED BINNING

LED technology is changing rapidly. LED's are made in lots and sorted into bins based on wavelength ranges that achieve colors. Tivoli uses a range of 2500°k to 3100°k for warm white and 5000° to 6000°K for white. Individual orders will be bin-sorted to within plus or minus 200°k and it is recommended to purchase 10% replacement stock within that bin lot to ensure matched color for needed replacements.

## PHOTOMETRIC INFORMATION

- Luminaire: 1/4" x 5/16" x 24" 360°, rectangular, semi-rigid, poly-carbonate light tube
- Light Input: 16 White 3.7W, 12V LEDs at 1.5" spacing

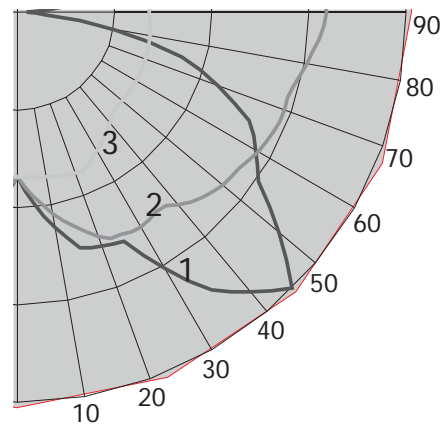
### LUMINANCE DATA (cd/sq.m)

Angle°	Average 0°	Average 45°	Average 90°
45°	4046	1886	888
55	3713	2108	935
65	4265	2465	1019
75	4387	2949	1151
85	1693	3959	1355

### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt
0-30	1.99	N.A.	6.4
0-40	3.69		11.9
0-60	8.34		26.9
0-90	15.51		50
90-120	7.16		23.1
90-130	9.6		31
90-150	13.51		31
90-180	15.51		50
0-180	31.01		100

Total Luminaire Efficiency = N.A. %



**MAXIMUM CANDELA= 4.15 located at Horizontal Angle= 0, Vertical Angle= 45**

1- Vertical Plane through Horizontal Angles (0-180) (through Max. Cd.)

2- Vertical Plane through Horizontal Angles (45-225)

3- Vertical Plane through Horizontal Angles (90-270)



# 360 LED FASTUBE™ LIGHT TUBING

## 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: C & D
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: C & D
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: C & D
ADNM-75-1-5-12-D	85-264V AC / 12V DC	75 / 1X5A	UL/ETL	12"W X 12"L X 4.25"D		Electronic	Y: C & D
ADNM-200-3-5-12-D	85-264V AC / 12V DC	200 / 3X5A	UL/ETL	12"W X 12"L X 4.25"D		Electronic	Y: C & D
ADNM-300-5-5-12-D	85-264V AC / 12V DC	300 / 5X5A	UL/ETL	12"W X 12"L X 4.25"D		Electronic	Y: C & D
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, B, C & D
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: C, 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, B, C & D
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: C, 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>	DIM-12V-8A	DC Digital	N/A	12V DC	12V DC	96W	8A*	Single gang box
<b>D</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>E</b>	NH-600	AC Magnetic	N/A	277V AC	277V AC	450W	N/A	Recessed Single gang box
<b>F</b>	NH-1000	AC Magnetic	N/A	277V AC	277V AC	800W	N/A	Recessed Dual gang box

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

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

## PRODUCT SPECIFICATION GUIDE

LIGHT SOURCE	VOLTAGE	MAX. LAMPS PER FEED
LEDs	12V	200

