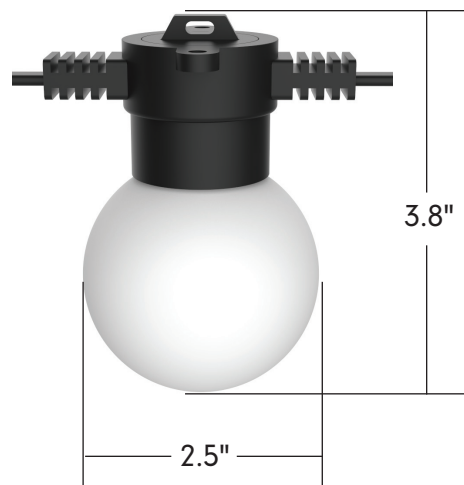# LITESPHERE
TRUERGB+W

tivoli®

Project: _____   Type: _____

Product Features

- Tivoli's proprietary algorithm controls RGB+W LEDs for superior color saturation and TRUE white performance other than a standard four-channel system
- Audio enhanced with MADRIX software
- Individually control each globe with DMX512 protocol for a unique and personal environment
- Each globe is auto-addressed for fast set-up and connection
- True RGB +W Technology delivers more than 16 million combinations of pure and precise color tones
- Tivoli's proprietary PCB design delivers a high level performance and easy replacement
- True RGB+W mount design provides optional suspended and a twist-off cap for surface applications
- 24V DC Low voltage system for long runs
- Pre-molded twist connect male and female power lead
- IP67
- cULus listed
- 3 Year warranty

Dimensions

3.8"

2.5"

Tivoli, LLC. reserves the right to modify this specification without prior notice.

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Order Guide

Note: For suspension application, a catenary cable is required for proper installation.
Please contact Tivoli for recommendations on unique mounting applications.

Strand Order Guide - 06" OC   Max electrical run length (80 total globes each circuit): 40'

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST		**06**	**RGBW**			**24**

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST = Litesphere True RGB+W	**BK** = Black **WH** = White*	**06** = 6" OC	**RGBW** = Red Green Blue +White	**OP** = Opal **CL** = Clear	**10** = 10' **20** = 20' **40** = 40'	**24** = 24V DC

*Consult factory for MOQ and lead-time

Strand Order Guide - 12" OC   Max electrical run length (80 total globes each circuit): 80'

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST		**12**	**RGBW**			**24**

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST = Litesphere True RGB+W	**BK** = Black **WH** = White*	**12** = 12" OC	**RGBW** = Red Green Blue +White	**OP** = Opal **CL** = Clear	**10** = 10' **40** = 40' **80** = 80'	**24** = 24V DC

*Consult factory for MOQ and lead-time

Strand Order Guide - 24" OC   Max electrical run length (80 total globes each circuit): 160'

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST		**24**	**RGBW**			**24**

PRODUCT CODE	WIRE	SPACING	LED TYPE	GLOBE	LENGTH	VOLTAGE
LST = Litesphere True RGB+W	**BK** = Black **WH** = White*	**24** = 24" OC	**RGBW** = Red Green Blue +White	**OP** = Opal **CL** = Clear	**10** = 10' **80** = 80' **160** = 160'	**24** = 24V DC

*Consult factory for MOQ and lead-time

Data-Box Order Guide   Note: (1) Data-Box is needed per each maximum electrical run length (80 globes)
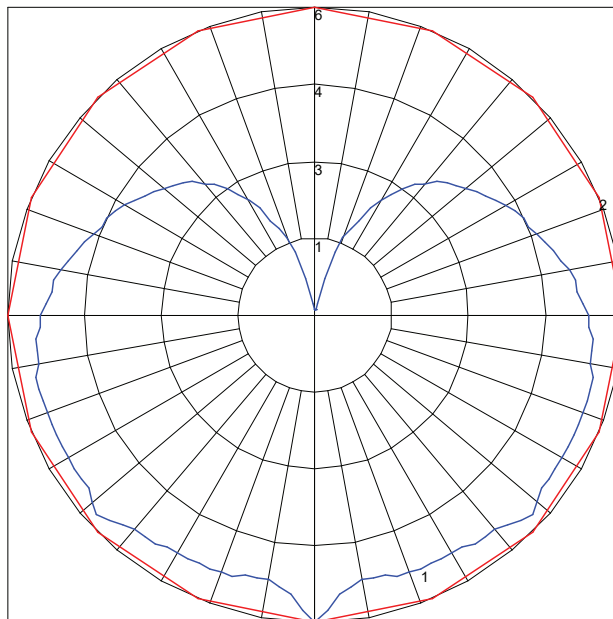
PRODUCT CODE	TYPE
LST	**DATABX**

PRODUCT CODE	TYPE
LST = Litesphere True RGB+W	**DATABX** = Data-Box

Specifications

Output

Kelvin Temperature	Red / Green / Blue / White
Pixels	1 pixel/globe
Lumens (lm/globe)	55 (all color fully on)

Electrical

Input Voltage	24V DC
Power Consumption (W/globe)	1
Maximum Run (based on O.C. spacing)	40' @ 6" O.C., 80' @ 12" O.C., 160' @ 24" O.C. (Total 80 globes per circuit)

Control

Control System	DMX 512
Address Setting	Auto Addressing

Physical

Dimensions	2.5"W x 3.8"H
Socket Housing	PVC
Globe	PE
Mounting	Surface Mount, Suspended
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)

Certification and Testing

Certification	cULus
Environment	Wet Location
IP Rating	IP67
Warranty	3 Years

Photometrics

Maximum Candela = 5.6
Located At Horizontal Angle = 0
Vertical Angle = 0
#1 Vertical Plane Through Horizontal Angles (0-180) (Through Max. Cd.)
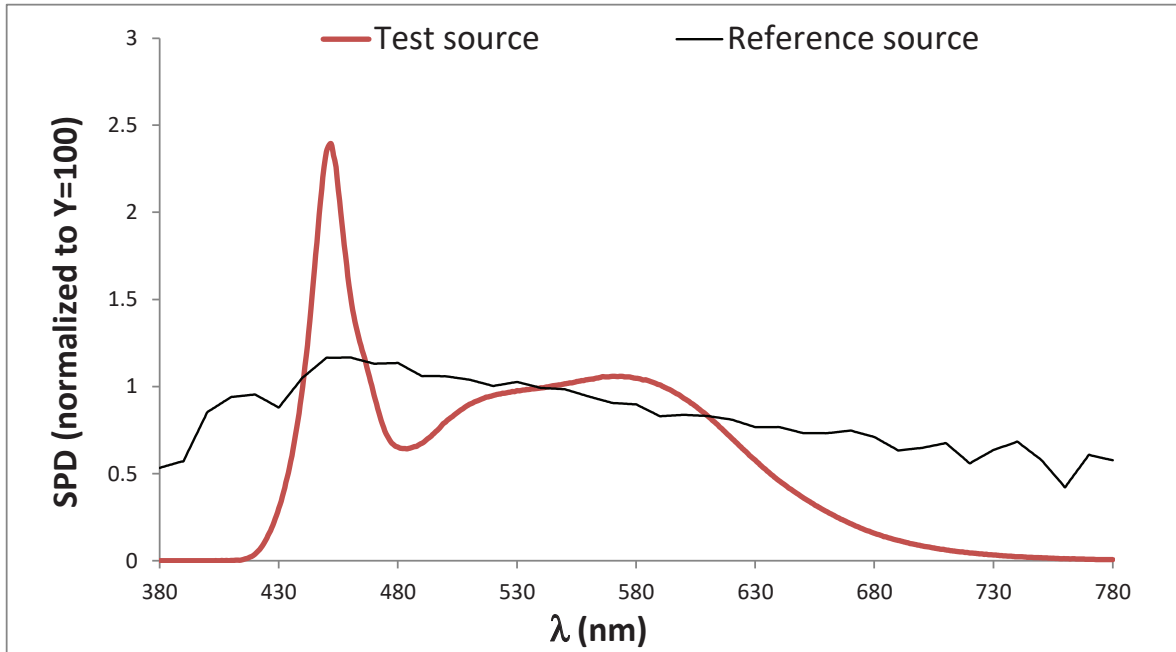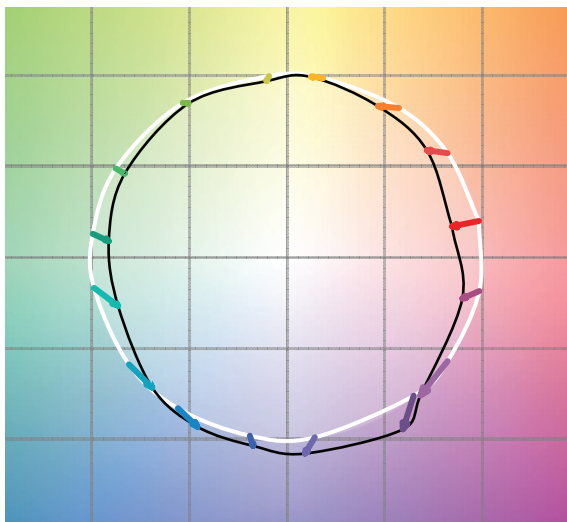#2 Vertical Cone Through Vertical Angle (0) (Through Max. Cd.)

TM-30-15

R_f by Hue

Hue Bin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
R_f	70	79	80	86	87	92	91	83	80	71	72	89	84	73	67	82

Chroma Shift by Hue

Hue Bin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Chroma Shift	-14%	-8%	-5%	0%	-3%	-2%	-5%	-9%	-10%	-3%	3%	5%	8%	12%	-1%	-8%
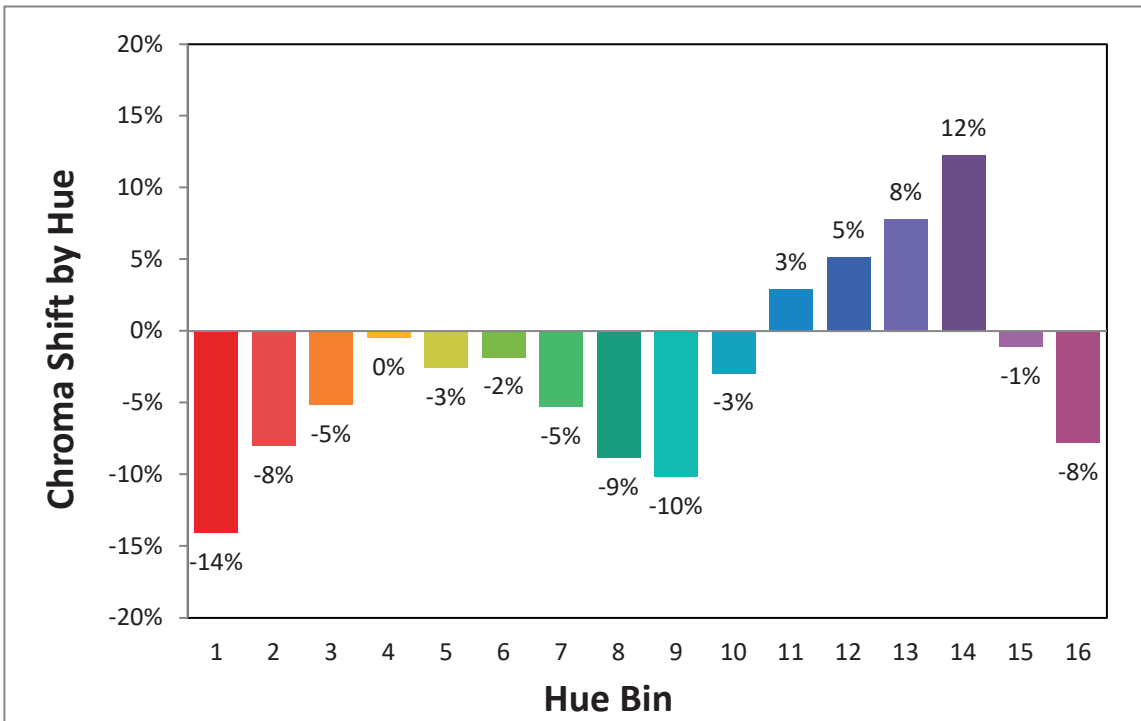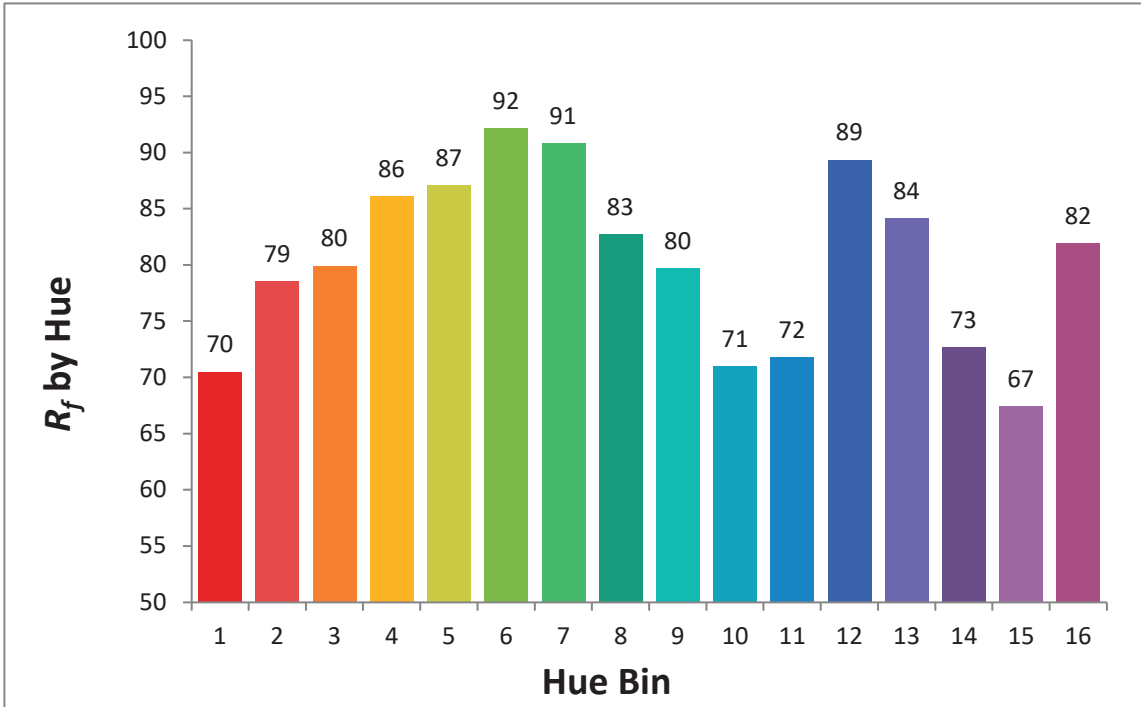
TM-30-15

R_f	R_g	CCT (K)	D_{uv}	u'	v'
81	94	6887	0.0030	0.1961	0.4642

Color Vector Graphic

		Graphic Shifts (%)	
Hue Bin	R_f	**Chroma**	**Hue**
1	70	-14%	0%
2	79	-8%	7%
3	80	-5%	9%
4	86	0%	6%
5	87	-3%	2%
6	92	-2%	-2%
7	91	-5%	0%
8	83	-9%	2%
9	80	-10%	12%
10	71	-3%	17%
11	72	3%	14%
12	89	5%	3%
13	84	8%	-7%
14	73	12%	-15%
15	67	-1%	-23%
16	82	-8%	-6%

Wiring Diagram

Online Operation

MADRIX (Live)

This is a live control performance setup. Widely used for concerts or performance-based manipulation. Use of a live network is necessary for communication between MADRIX software and Litesphere True RGB+W.
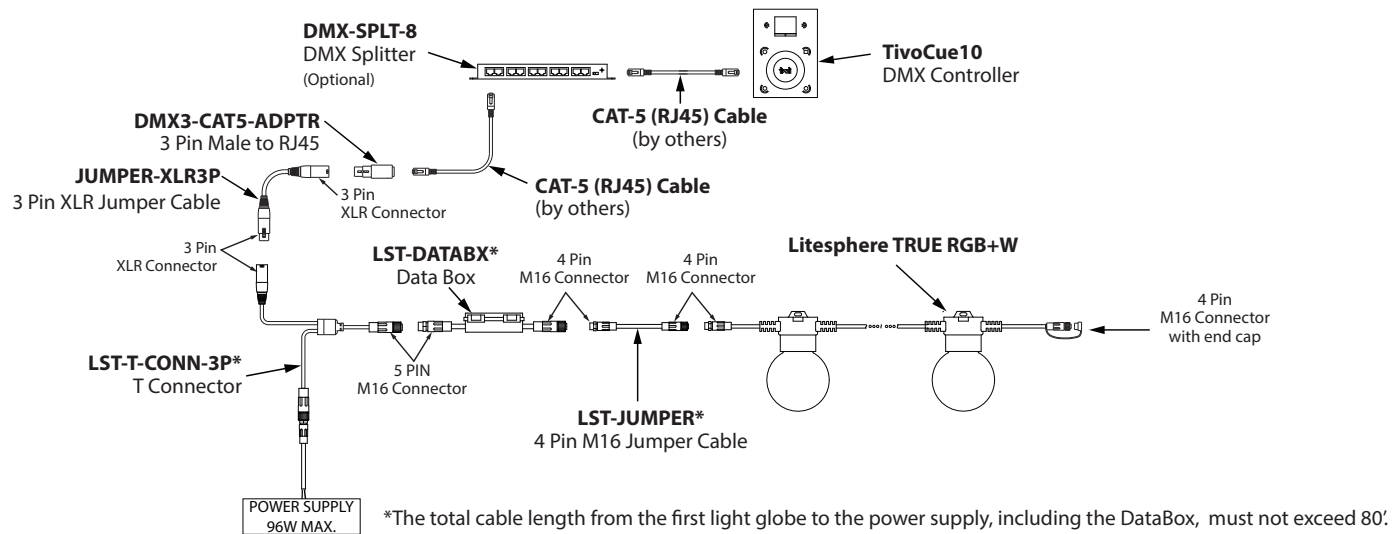

ARTNET-L-8-512
ARTNET-L-16-512
Artnet to DMX interface

NTG-SWI-8PT
Ethernet switch

JUMPER-XLR3P
3 Pin XLR Jumper Cable

3 Pin XLR Connector

CAT-5 (RJ45) Cable
(by others)

CAT-5 (RJ45) Cable
(by others)

3 Pin XLR Connector

LST-DATABX*
Data Box

4 Pin M16 Connector

4 Pin M16 Connector

Litesphere TRUE RGB+W

4 Pin M16 Connector with end cap

LST-T-CONN-3P*
T Connector

5 PIN M16 Connector

LST-JUMPER*
4 Pin M16 Jumper Cable

POWER SUPPLY 96W MAX.

*The total cable length from the first light globe to the power supply, including the Data Box, must not exceed 80'.

Off-line Operation

TivoCUE (Preset)

Programmed via CUE software and recorded to a Micro SD card for data transfer into TivoCUE control. This is a stand-alone feature with no need for network support by software (CUE) once recorded and transferred to in-wall DMX control hardware. Please refer to TivoCue10 User Manual for additional information.
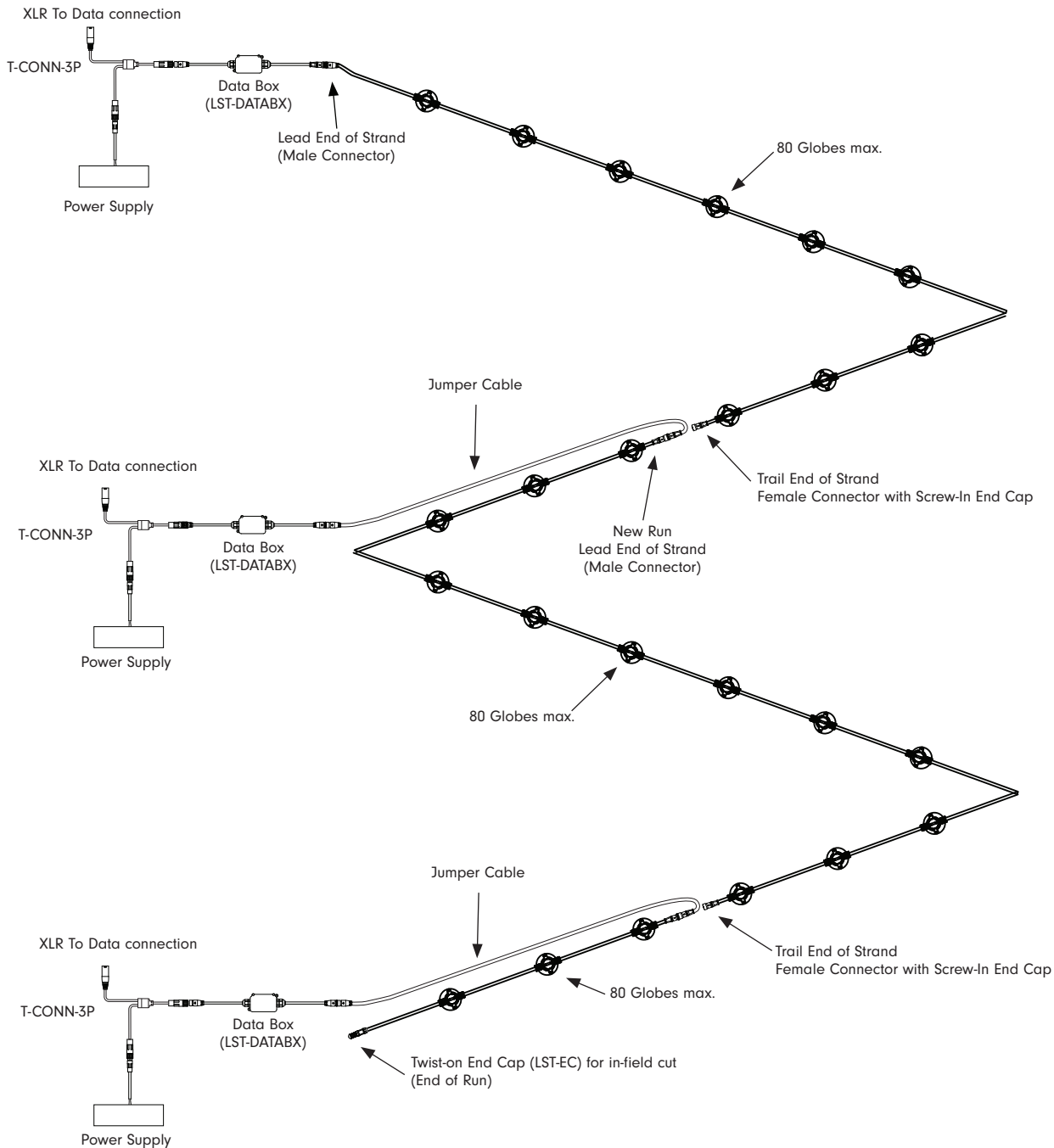
Note: TivoCue10 controls a maximum of 1 universes with 80 pixels (globes) total. Consult factory for 160 pixels (globes) maximum option.

DMX-SPLT-8
DMX Splitter
(Optional)

TivoCue10
DMX Controller

DMX3-CAT5-ADPTR
3 Pin Male to RJ45

JUMPER-XLR3P
3 Pin XLR Jumper Cable

3 Pin XLR Connector

CAT-5 (RJ45) Cable
(by others)

3 Pin XLR Connector

CAT-5 (RJ45) Cable
(by others)

LST-DATABX*
Data Box

4 Pin M16 Connector

4 Pin M16 Connector

Litesphere TRUE RGB+W

4 Pin M16 Connector with end cap

LST-T-CONN-3P*
T Connector

5 PIN M16 Connector

LST-JUMPER*
4 Pin M16 Jumper Cable

POWER SUPPLY 96W MAX.

*The total cable length from the first light globe to the power supply, including the DataBox, must not exceed 80'.

Wiring Multiple Runs

WARNING! Risk of Product Failure.
The total cable length from the first light globe to the power supply, including the Data Box, must not exceed 80'.

XLR To Data connection

T-CONN-3P

Data Box
(LST-DATABX)

Lead End of Strand
(Male Connector)

80 Globes max.

Power Supply

Jumper Cable

XLR To Data connection

T-CONN-3P

Data Box
(LST-DATABX)

Trail End of Strand
Female Connector with Screw-In End Cap

New Run
Lead End of Strand
(Male Connector)

Power Supply

80 Globes max.

Jumper Cable

XLR To Data connection

T-CONN-3P

Data Box
(LST-DATABX)

Trail End of Strand
Female Connector with Screw-In End Cap

80 Globes max.

Twist-on End Cap (LST-EC) for in-field cut
(End of Run)

Power Supply

Wiring Statement

⚠ Warnings: Risk of injury or fire.

Do not cover any luminaire as the covering may cause
it to overheat.

Do not install this lighting system where the exposed bare contacts can be shorted
or contact any conductive material to reduce the risk of fire and burns.

Do not install any luminaire closer than 6 inches (15.25cm) from any curtain, or similar
combustible material.

Do not use any luminaire if damaged; such as, broken globe, loose connections, or
frayed wire insulation. Inspect periodically.

Do not submerge any luminaire in liquid. Use waterproof connectors for all outdoor
applications.

Do not secure any luminaire with staples, nails or like means that might damage the
wire insulation. Secure it by using screws through the base.

Do not run any luminaire at an operating temperature exceeding -20°C to 50°C
(-4°F to 122°F)

Accessories

LST-JUMPER-X
Litesphere True RGB+W
4 PIN jumper cable, IP67
XX = 5, 10, 20 (lengths in ft)

JUMPER-XLR3P-X
Jumper Cable 3-PIN XLR
X = 5, 10, 25 (lengths in ft)

LST-T-CONN-3P
T Connector, IP67
3-PIN XLR Male for DMX
5-PIN M16 Female for LED
2-PIN M16 female to 2-PIN male
(2' lead) for power

LST-EC
Litesphere True RGB+W end cap

DMX3-CAT5-ADPTR
DMX Adapter
3-pin XLR Female to RJ45

NTG-SWI-8PT
NETGEAR 8-Port Gigabit Ethernet
Unmanaged Switch

NTG-SWI-16PT
NETGEAR 16-Port Gigabit Ethernet
Unmanaged Switch

ARTNET-L-X-512
X = 8, 16 (ports)
8 or 16 port universe Artnet to DMX
interface,
16 port 8192 DMX channels
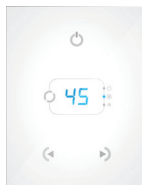8 port 4096 DMX channels (Online only)

DMX-SPLT-8
DMX Splitter
8 ports of DMX 512, RJ45 and 3-pin
hardwire connection

Note: If the number of DMX sub-controllers
exceed 32 units, a DMX Splitter is required.

Controls & Software

Touchscreen
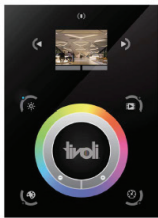
Touchscreen

TVOQ-10-XX-7
XX = BK (Black), WH (White)
1024 DMX channel, 500 scene,
10 zone, glass touch screen

TVOQ-2-XX
XX = BK (Black), WH (White)
512 DMX channel, 99 scene,
1 zone, glass touch screen

Cue™ and CuePro™ softwares are specifically designed for the TivoCUE™ in-wall DMX controls and includes an array of tools required by the latest DMX lighting fixtures. Intuitive, with easy-to-use effects that can be dropped into timelines, and multi-zone synchronization capabilities allow you to program a project effortlessly.

MADRIX Key & Software Levels
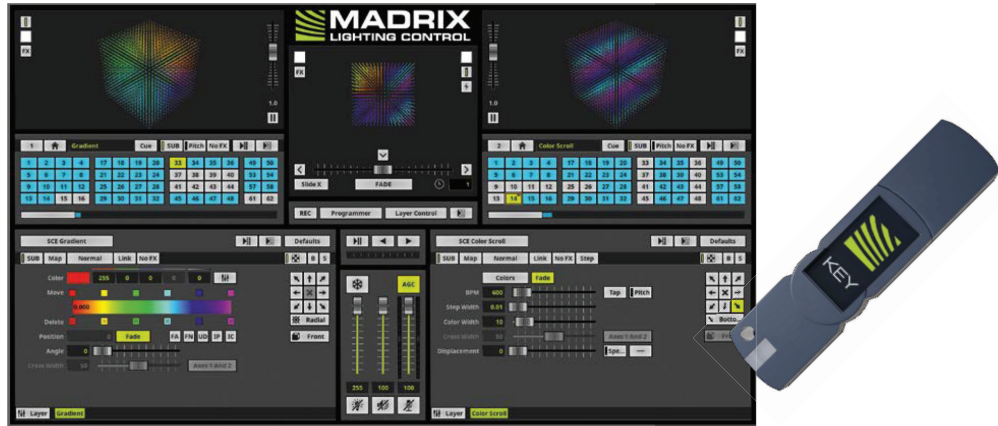
MADRIX KEY

A USB dongle unlocks the software's full output. You can freely switch between different PCs as it is not bound to a specific one. It only needs to be activated on-line once.

MADRIX 5 LICENSE UPGRADES

You can easily upgrade your MADRIX 5 KEY to any higher license at any time, increasing the available output.

MADRIX 5 Key & Software Cat No	MDRX-LC-5S	MDRX-LC-5E	MDRX-LC-5B	MDRX-LC-5P	MDRX-LC-5U	MDRX-LC-5M
Level	START	ENTRY	BASIC	PROFESSIONAL	ULTIMATE	MAXIMUM
DMX-Based Output						
DMX Channels	1,024	4,096	16,384	65,536	262,144	1,048,576
DMX Universe Example	2	8	32	128	512	2,048
RGB Voxels Example	341	1,365	5,461	21,845	87,381	349,525
DVI-Based Output						
DVI Voxels	4,096	16,384	262,144	1,048,576	2,097,152	2,097,152
Render Resolution Example	64 X 64 PIXELS	128 X 128 PIXELS	512 X 512 PIXELS	1,024 X 1,024 PIXELS	2,048 X 1,024 PIXELS	2,048 X 1,024 PIXELS

Mounting Options

SURFACE/FLUSH

For surface mount applications, remove the top suspension-plate by turning counter-clockwise until off. Place socket flush against the desired surface and mount using proper screws according to substrate.

SUSPENDED

Suspended mounting will use a combination of LS-Cable, LS-Locks with LS-UVZP. Tension the cable wire with our LS-TT (Tension Tool) for desired sag (Please adhere to local city code for suspended application).

Note: For suspension application, a catenary cable is required for proper installation.
Please contact Tivoli for recommendations on unique mounting applications.

Mounting Accessories

LS-CABLE-60 Catenary Cable Kit - 60'
(1/8" galvanized cable includes 2 cables locks for use with loads up to 200lbs)

LS-CABLE-110 Catenary Cable Kit - 110'
(1/8" galvanized cable includes 2 cables locks for use with loads up to 200lbs)

LS-CABLE-500 Catenary Cable Kit - 500'
(1/8t" galvanized cable for use with loads up to 200lbs)

LS-LOCK-X Cable Lock
X = **2** (2 Locks), **4** (4 locks) Includes (1) cable release key. Cable Lock for 1/8th inch cable, Heavy-duty lockable fasteners support loads up to 200 lbs. Can be easily adjusted without the use of tools.

LS-TT
Catenary Cable Tensioning Tool up to 880lbs with minimal effort due to the 6:1 gear drive mechanism. Integral torque gauge controls the load applied to the wire, giving consistent tension every time and optimizing the life of the wire.

LS-UVZP-BK-50 UV Zip Ties
50 pc Bag set. UV resistant, heavy duty ties.
Maximum weight up to 100 lbs./per tie.

LS-UVZP-BK-30 UV Zip Ties
30 pc Bag set. UV resistant, heavy duty ties.
Maximum weight up to 100 lbs./per tie.

Tivoli, LLC. reserves the right to modify this specification without prior notice.

Replacement Parts

LST-RGBW-24
Litesphere True RGB+W LED
sold each

LST-OG
Litesphere True RGB+W Opal globe
sold each

LST-CG
Litesphere True RGB+W Clear globe
sold each

Power Supplies

ADNM - NON DIMMING

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLT-AGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-90-1-4-24-D	Indoor / Outdoor	100-277V AC 50‰ HZ	24V DC	1	90W	3.75
	ADNM-120-1-4-24-D				1	96W	4A

INFINITY - MLV / ELV / 0-10V / PWM / TRIAC

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	MIN LOAD	CIRCUIT CAPACITY
Infinity Series Class 2 Transformer	INF-J-30-1-1.3-24	Indoor / Outdoor	100 - 277V AC	24V DC	1	30W	3W	1.3A
	INF-J-60-1-2.5-24				1	60W	6W	2.5A
	INF-J-96-1-4-24				1	96W	9W	4A