

Date: 2/2/2024

Region: 4A
FAC ID: NY126

CSS No.: 96544
Maximo WO No.: 14991



Asset #: NA

Priority: Routine

Original Work Request:

Repair interior lights with retrofitting existing fixtures.

Description of Repairs Needed:

Labor and material to a.) JOB: T5 LIGHTING Replace (90) existing T5 lamps with (90) T5 LED model KT-LED25T5HO high output 25w 3400 lumen non-dimmable lamps. b.) Modify wiring inside each fixture so the ballasts are bypassed and line voltage is applied directly to lamp holders. c.) Install (6) battery backup modules model KT-EMRG-LED-12-1200 for (6) existing emergency T5 fixtures. d.) Tambe to recycle existing T5 lamps. e.) Disconnect existing LED boards/driver on (1) existing 8ft linear fixture and install (2) 4ft retrofit kits model MRKD4-X1- 40K60W-4S. f.) Ensure retrofit kits fit correctly and provides the right amount of light

Labor:

	Labor Hrs	Labor Rate	Total
Technician	24	\$ 130.00	\$ 3,120.00
			\$ -

Material List:

	Quantity	Cost	Total
Misc. Materials, please see attached back up	1	\$ 280.00	\$ 280.00
Misc. Materials, please see attached back up	1	\$ 3,600.00	\$ 3,600.00
			\$ -
			\$ -

Equipment List:

	Quantity	Cost	Total
			\$ -
			\$ -
			\$ -

PM WO History:

NA

Estimate Summary:

Labor	Material	Equipment
\$ 3,120.00	\$ 3,880.00	\$0.00

Sub Total	G&A 12%	Fee 6%	Total Estimate
\$7,000.00	\$840.00	\$420.00	\$8,260.00

Estimate #2645

02/02/2024

Karlee Demain

(724) 678-6067

karlee.demain@tideh2o.net

Tidewater, Inc.

5835 Avenida Encinas, Suite 118

Carlsbad, CA 92008



Site: US Army Corps Reserve, 49 Jetview Drive, Rochester, NY 14624

We are pleased to submit the quotation for the following:

JOB: OFFICE LIGHTING EXAMPLE TEST

Disconnect existing LED boards/driver on (1) existing 8ft linear fixture and install (2) 4ft retrofit kits model MRKD4-X1-40K60W-4S.

Ensure retrofit kits fit correctly and provides the right amount of light to customers liking.

* Cost is based on work being done during normal business hours Mon-Fri, 6am - 6pm. * Cost is based on job being prevailing wage and tax exempt.

This quote is based on the information provided and on the walk-through at the facility. Installation as per NEC, Tidewater, Inc. standards and specifications provided.

Tambe Electric Inc., their associates, employees and those under contract of Tambe Electric Inc. are not responsible or liable for any losses or personal injury to any entity as a result of; mislabeling/misidentification or errors on drawings, panel schedules, existing circuit/raceway installations, existing conditions or otherwise unknown factors.

Upon issuance of PO and after material delivery, allow (10) business days for equipment delivery. Not responsible for delays or costs incurred due to labor strikes, natural disasters, acts of God or other like circumstances. Quote subject to final approval of scope of work and final BOM. Due to the volatility of market prices on materials and freight, total cost may need to be increased depending on when quote is accepted by customer.

The total cost of this installation is:

Labor 4 hrs x \$130 = \$520.00

Materials: \$280.00

Tax: \$0.00

Total Cost: \$800.00

Thank you for the opportunity!

Martin Johnson

Service Manager/Estimator

Tambe Electric Inc.

M: 585-645-2252

P: 585-924-8700

F: 585-924-8771

mjohnson@tambelectric.com

614 Fishers Run, Victor, NY 14564

To approve please click on red link from email, sign/date and return quote or send PO. Please check YES or NO for tax exemption status and include your tax exemption form if tax exempt.

Approved:

Signed by customer _____

Date _____

Tax Exempt? YES _____ NO _____

Estimate #2642

02/02/2024

Karlee Demain

(724) 678-6067

karlee.demain@tideh2o.net

Tidewater, Inc.

5835 Avenida Encinas, Suite 118

Carlsbad, CA 92008



Site: US Army Corps Reserve, 49 Jetview Drive, Rochester, NY 14624

We are pleased to submit the quotation for the following:

JOB: T5 LIGHTING

Replace (90) existing T5 lamps with (90) T5 LED model KT-LED25T5HO high output 25w 3400 lumen non-dimmable lamps.

Modify wiring inside each fixture so the ballasts are bypassed and line voltage is applied directly to lamp holders.

Install (6) battery backup modules model KT-EMRG-LED-12-1200 for (6) existing emergency T5 fixtures.

Tambe to recycle existing T5 lamps.

* Cost is based on work being done during normal business hours Mon-Fri, 6am - 6pm. * Cost is based on job being prevailing wage and tax exempt.

This quote is based on the information provided and on the walk-through at the facility. Installation as per NEC, Tidewater, Inc. standards and specifications provided.

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The total cost of this installation is:

Labor 20 hrs x \$130 = \$2,600.00

Materials: \$3,600.00

Tax: \$0.00

Total Cost: \$6,200.00

Thank you for the opportunity!

Martin Johnson

Service Manager/Estimator

Tambe Electric Inc.

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F: 585-924-8771

mjohnson@tambeelectric.com

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To approve please click on red link from email, sign/date and return quote or send PO. Please check YES or NO for tax exemption status and include your tax exemption form if tax exempt.

Approved:

Signed by customer _____

Date _____

Tax Exempt? YES _____ NO _____



MRKD2-X1-40K25W-2S



Available Models

<input type="checkbox"/> MRKD2-X1-40K25W-2S	<input type="checkbox"/> MRKD4-X1-40K50W-2S
<input type="checkbox"/> MRKD2-X1-50K25W-2S	<input type="checkbox"/> MRKD4-X1-50K50W-2S
<input type="checkbox"/> MRKD4-X1-30K36W-2S	<input type="checkbox"/> MRKD4-X1-40K60W-3S
<input type="checkbox"/> MRKD4-X1-40K36W-2S	<input type="checkbox"/> MRKD4-X1-50K60W-3S
<input type="checkbox"/> MRKD4-X1-50K36W-2S	<input type="checkbox"/> MRKD4-X1-40K60W-4S
<input type="checkbox"/> MRKD4-X1-30K50W-2S	<input type="checkbox"/> MRKD4-X1-50K60W-4S

Mechanical / Construction

- Integrated magnets for light and driver mounting
- Aluminum light housing with frosted polycarbonate lens
- -4°-113° F (-20°-45° C) operating temperature

Electrical

- 120-277 VAC input, ≥0.9 power factor
- 0-10 V dimming
- 50,000 hour LED lifetime

Photometrics

- 125 lm/W
- 120° beam angle
- 80+ CRI

Warranty

Five (5) Year Warranty

Part Number Breakdown

Example: MRKD4-X1-50K60W-4S

Family	Tube Length ¹	Color Temperature	Wattage ¹	Tube Quantity ¹
MRKD	2-X1 [2 ft length]	30K [3000K] 40K [4000K] or 50K [5000K]	25W [25 W] 36W [36 W] 50W [50 W] or 60W [60 W]	2S [2 tubes] 3S [3 tubes] 4S [4 tubes]
	4-X1 [4 ft length]			

Application

These easily replace inefficient fluorescent tubes found in linear low bay lights, troffers, and lighted signs without the need for a new fixture. Common applications include warehouses, workshops, supermarkets, factories, gyms, offices, schools, and other large interior spaces.

Specifications

Model MRKD	2-X1-xK25W-2S	4-X1-xK36W-2S	4-X1-xK50W-2S	4-X1-xK60W-3S	4-X1-xK60W-4S
Intensity ²	3,125 lm	4,500 lm	6,250 lm	7,500 lm	7,500 lm
Operating Voltage			120-277 VAC		
Power Consumption	25 W	36 W	50 W	60 W	60 W
Current Draw	208 mA @ 120 VAC 90 mA @ 277 VAC	300 mA @ 120 VAC 130 mA @ 277 VAC	417 mA @ 120 VAC 181 mA @ 277 VAC	500 mA @ 120 VAC 217 mA @ 277 VAC	500 mA @ 120 VAC 217 mA @ 277 VAC
Efficacy			125 lm/W		
Color Temperature			3000K, 4000K, or 5000K (as ordered)		
Beam Angle			120°		
CRI			80+		
Dimming			0-10 V		
IP Rating			IP20		
Ambient Operating Temperature			-4°-113° F (-20°-45° C)		
Rated Life (L70)			50,000 hours		

¹not all sizes are available in all CCTs, wattages, or tube quantities

²Intensity is measured when installed as a retrofit, in fixture.



T 866.811.5550

F 314.972.6202

email: commercial-sales@superbrightleds.com

www.superbrightleds.com/cat/industrial-led-lighting/

Rev V1 Date: 05/06/2022

Specifications are subject to change without notice.

Printed in the U.S.A.

Output Equivalencies

MRKD2-X1-x25W-2S	two or three 17 W T8 / 20 W T12 fluorescent tubes / 2' x 2' troffer
MRKD4-X1-x36W-2S	two 28 W fluorescent T8 tubes / 4' x 1' troffer / 4' strip light
MRKD4-X1-x50W-2S	two 32 W fluorescent T8 tubes / 4' x 1' troffer / 4' strip light
MRKD4-X1-x60W-3S	three 32 W fluorescent T8 tubes / 4' x 2' troffer
MRKD4-X1-x60W-4S	four 32 W fluorescent T8 tubes / 4' x 2' troffer

Certifications and Compliances

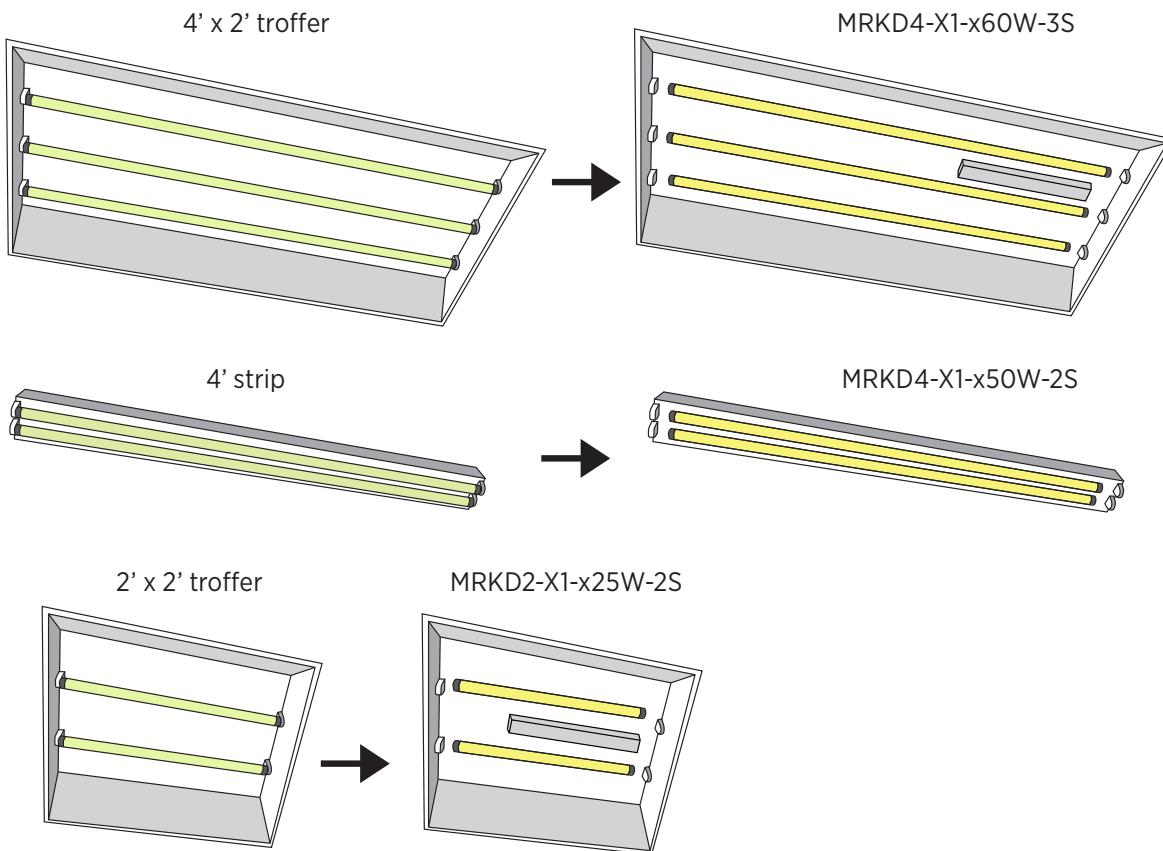
These retrofit kits are ETL Classified in compliance with UL 1598C and are also DLC 5.1 Standard listed by Design-Lights Consortium.



Typical Installations

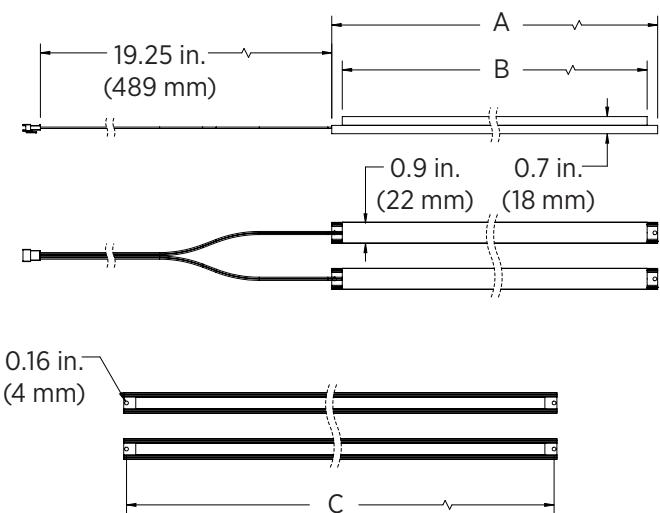
An installer can simply remove the old fluorescent tubes, disconnect the existing ballast, connect the driver for the magnetic tubes to power, and place the magnet side of the driver onto the fixture. Magnetic tubes can then simply be placed in the fixture using built-in magnetic mounts and connected to driver to finish the installation.

This type of installation saves time and money, doesn't require the installer to know what kind of ballast or bulb type the original fixture uses, while also providing bright, efficient, high CRI lighting.



Dimensional Drawings

MRKD2-X1-xK25W-2S is shown for illustration purposes. Other light tubes are similar but may have slight differences in appearance and/or additional light tubes.

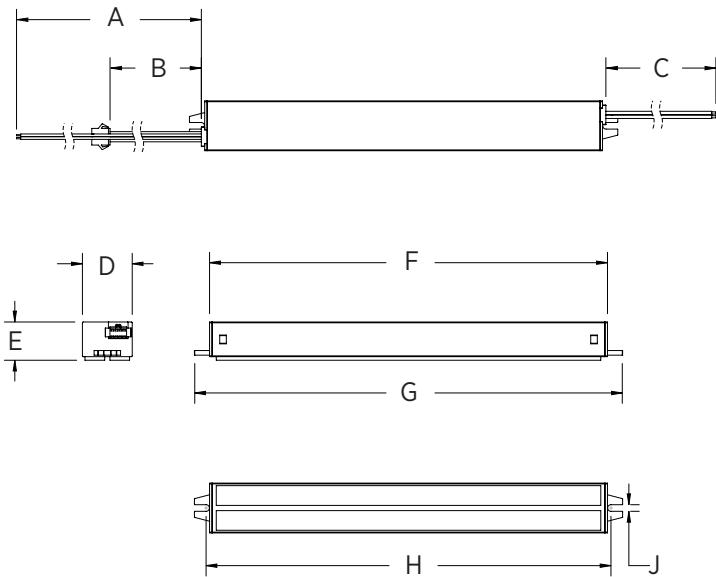


Model	A	B	C	Light Tube Quantity
MRKD2-X1-xK25W-2S	19.75 in. (502 mm)	17.9 in. (456 mm)	19.5 in. (495 mm)	2
MRKD4-X1-xK36W-2S				2
MRKD4-X1-xK50W-2S				2
MRKD4-X1-xK60W-3S	43.3 in. (1.1 m)	42.5 in. (1.08 m)	43 in. (1.09 mm)	3
MRKD4-X1-xK60W-4S				4



Dimensional Drawings

MRKD2-X1-xK25W-2S is shown for illustration purposes. Other drivers are similar but may have slight differences in appearance and/or additional light tubes.



Model	A	B	C	D	E	F	G	H	J
MRKD2-X1-xK25W-2S	15.75 in. (400 mm)	4.25 in. (108 mm)	5.75 in. (146 mm)	1.2 in. (30 mm)	0.9 in. (23 mm)	9.6 in. (243 mm)	10.25 in. (260 mm)	9.7 in. (246 mm)	0.16 in. (4 mm)
MRKD4-X1-xK36W-2S									
MRKD4-X1-xK50W-2S									
MRKD4-X1-xK60W-3S	8.8 in. (223 mm)	4.5 in. (113 mm)	8.75 in. (222 mm)	1.3 in. (32 mm)	1.2 in. (30 mm)	7.5 in. (191 mm)	8.4 in. (212 mm)	7.85 in. (199 mm)	0.27 in. (6.9 mm)
MRKD4-X1-xK60W-4S									



DIRECT DRIVE DX2

SINGLE- OR DOUBLE-ENDED LINE VOLTAGE LED TUBES

KT-LED25T5HO-48GC-840-DX2

T5 LED LAMP

DESCRIPTION

25W T5 LED | 4000K | >83 CRI | High-Output | Single- or Double-Ended Wiring



LAMP TYPE: Linear

BULB TYPE: T5 LED

BASE TYPE: G5 (Miniature Bi-Pin)

WATTAGE: 25W

COLOR TEMPERATURE: 4000K

COLOR RENDERING INDEX (CRI): >83

WARRANTY: 5 Years



PRODUCT FEATURES

- Replacement for conventional fluorescent lamp
- Single- or double-ended wiring
- 50,000+ hour lifetime
- Environmentally friendly: No mercury used
- Instant startup
- Direct replacement for F54T5/HO fluorescent lamp
- Frosted lens eliminates pixelation

- Integral driver (isolated) eliminates the need for external driver or ballast
- Improved lamp durability with shatterproof coated glass
- Operating temperature: -20°C/-4°F to 45°C/113°F
- 140 Lumens per Watt
- UL Classified
- DLC Listed
- ETL Sanitation listed NSF/ANSI Standard 2—Food Equipment

OPERATING SPECIFICATIONS

ELECTRICAL CHARACTERISTICS

Input Voltage	Power Consumption	Power Factor	Input Current
120–277Vac	25W	>0.9	215mA @ 120V 93mA @ 277V

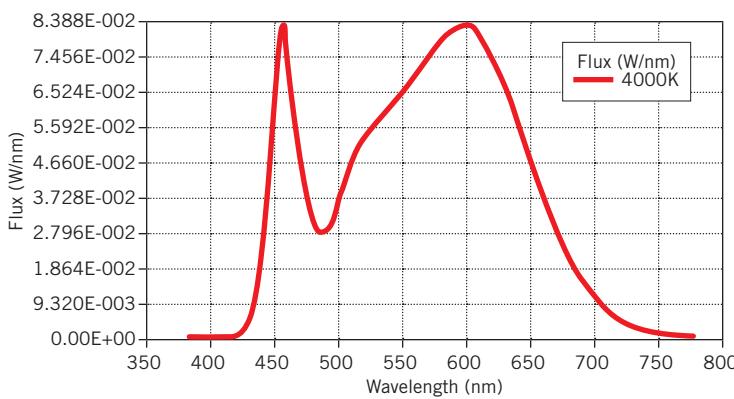
PHOTOMETRIC CHARACTERISTICS

Color Temperature (CCT)	4000K
Luminous Flux	3500 lm
Color Rendering Index (CRI)	>83
Efficacy	140 lm/W
Beam Angle	140°
Visible Light Area	280°

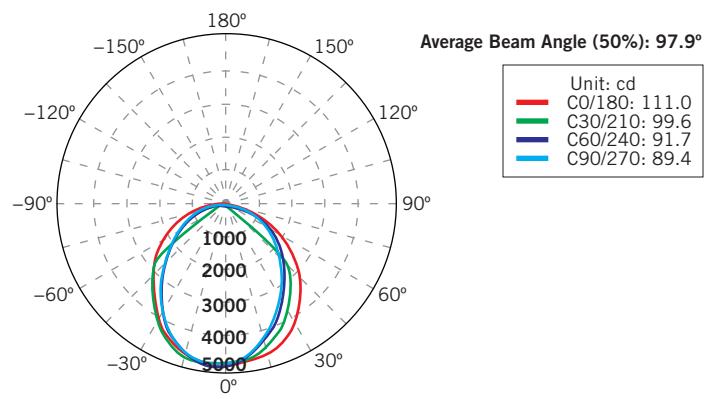
RATED LIFE

L70 (Hours)	50,000
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SPECTRAL DISTRIBUTION



POLAR CANDELA DISTRIBUTION





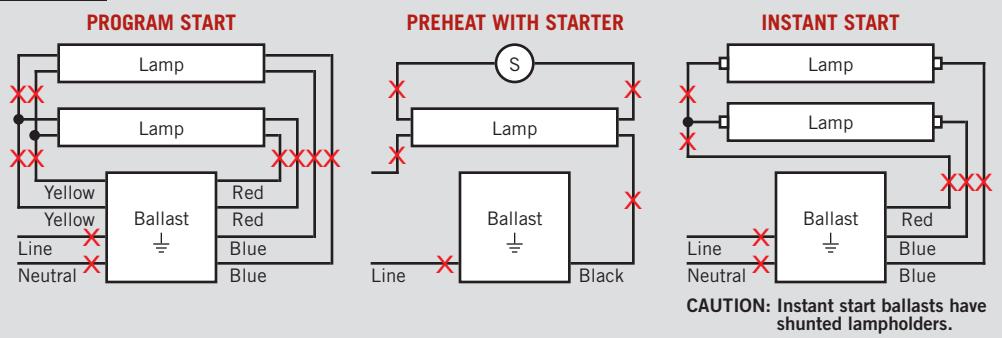
KT-LED25T5HO-48GC-840-DX2

T5 LED LAMP

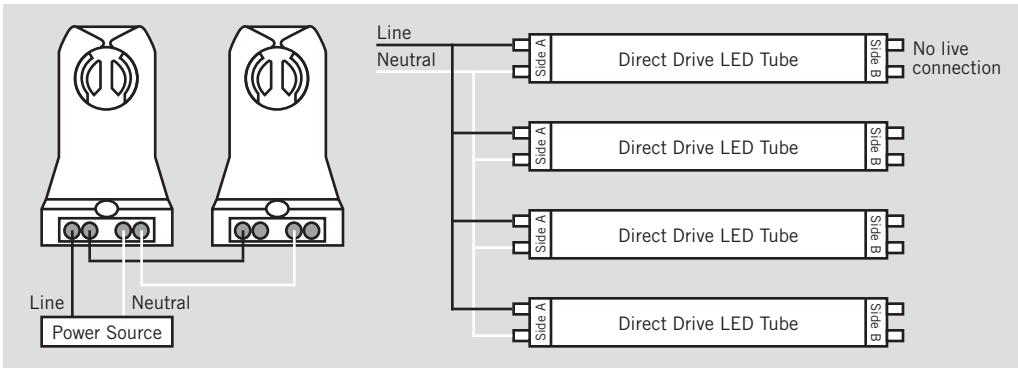
SINGLE-ENDED WIRING DIAGRAM

1. Cut all existing connections to ballast as shown below and remove ballast. See *Figure A* for typical ballast configurations. **Note: Single-ended wiring requires non-shunted lampholders.**

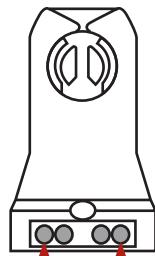
FIGURE A TYPICAL BALLAST CONFIGURATIONS



2. Rewire fixture as shown below.



TYPICAL NON-SHUNTED LAMPHOLDER



Connect wires directly to these terminals

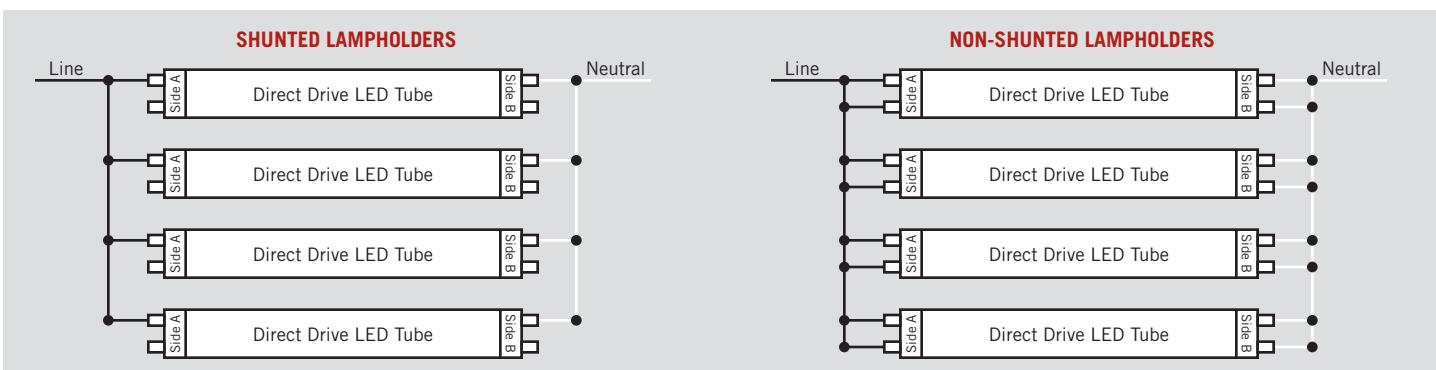
**CAUTION: FOR SINGLE-ENDED
WIRING USE *ONLY* NON-SHUNTED
LAMPHOLDERS.**

For Single-ended wiring, do not install product in a fixture with shunted lampholders (found in all fixtures using instant start ballasts). If the current lampholders are shunted, remove them and replace them with non-shunted lampholders. Make new connections directly to terminals as indicated above. Keystone can provide any style replacement lampholders. Call us at 800-464-2680.

DOUBLE-ENDED WIRING DIAGRAM

1. Cut all existing connections to ballast as shown below and remove ballast. See *Figure A* above for typical ballast configurations.
2. Re-wire fixture as shown below. For double-ended wiring, use either shunted or nonshunted lampholders.

NOTE: There should not be any exposed wires at the end of installation.



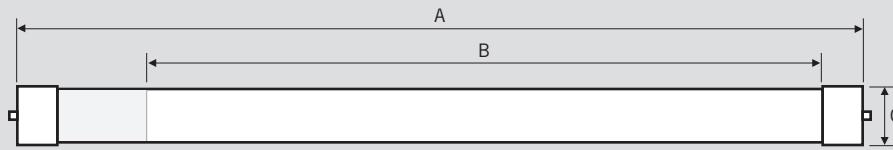


DIRECT DRIVE DX2
SINGLE- OR DOUBLE-ENDED LINE VOLTAGE LED TUBES

KT-LED25T5HO-48GC-840-DX2

T5 LED LAMP

PHYSICAL CHARACTERISTICS



LAMP DIMENSIONS

A (Body Length)	45.19"
B (Illuminated Length)	40.56"
C (Diameter)*	0.82"

NOMINAL LENGTH: 48"

BASE TYPE: G5 (Miniature Bi-Pin)

*Though nominally referred to as a T5, this lamp has a T6 diameter.

ORDERING INFORMATION

ORDER CODE	CARTON QUANTITY	EASY CODE	UPC
KT-LED25T5HO-48GC-840-DX2	25 pcs	PAQ-77	843654130590

CATALOG NUMBER BREAKDOWN

KT-LED25T5HO-48GC-840-DX2

1 2 3 4 5 6 7 8 9

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Type
- 5 Nominal Length (Inches)
- 6 Shatter-Proof Coated Glass
- 7 800 Series
- 8 Color Temperature
- 9 Single- or Double-Ended Wiring