

**MUSIC CITY CONVENTION CENTER  
LIGHTING FIXTURE SUBMITTAL**

LIGHTING FIXTURE DATA SHEET

**FIXTURE TYPE: 91Q**

**FIXTURE INFORMATION**

**FIXTURE MANUFACTURER:** ZUMTOBEL

**FIXTURE CATALOG NUMBER:** FTW-2545-4-U-SM

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**CONTRACTOR'S COMMENTS:**

**ARCHITECT'S COMMENTS:**

**ENGINEER'S COMMENTS:**

ITEMS REQUIRED IF SHOWN WITH FIXTURE THAT ARE NEEDED PRIOR TO BEING ABLE TO RELEASE FIXTURE TO BE MANUFACTURED.

1. CUSTOM COLOR IF REQUIRED
2. STEM OR AIRCRAFT CABLE LENGTH IF REQUIRED
3. ROW LENGTHS OR LAYOUT INFORMATION
4. CEILING TYPE

NOT SUPPLYING INFORMATION PRIOR TO RELEASE WILL STOP FIXTURES FROM BEING RELEASED AND COULD DELAY PROJECT.

91Q

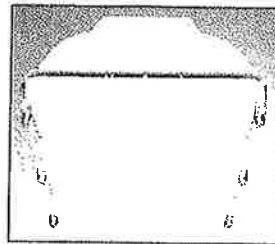
# CHIARO

Fluorescent  
Two Lamp,  
T5, T5 HO or T8

Surface-Mounted or  
Suspended Wet  
Location (IP 65)  
Diffuser Luminaire

4'

online  
Find it Fast 282



**Applications:** This durable, moisture-proof luminaire is ideal for locations where humidity and dust is constant challenge. The internal prismatic structure allows easy cleaning of the fixture while providing excellent glare control and high efficiency (79% for 32W T8). CHIARO is a good choice for bakeries, animal feed facilities, pump rooms, agricultural and industrial facilities and parking garages.

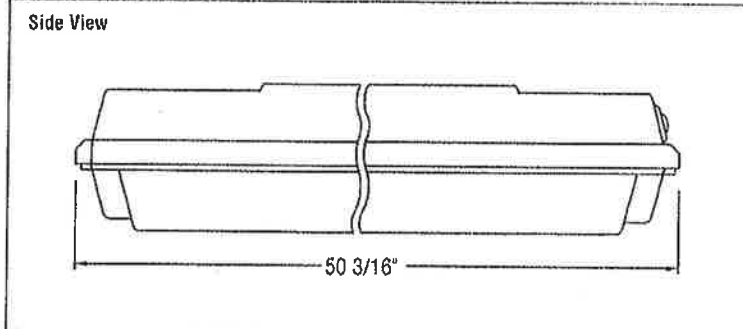
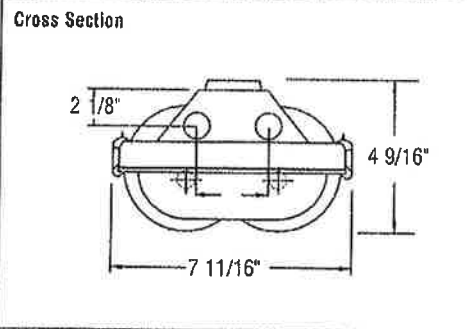
Type: 91, 91Q

Project: \_\_\_\_\_

ORDERING NOTE: Specify lamplng, mounting and options.

▼Fixture	▼Lampng	▼Length	▼Voltage	▼Mountng	▼Options
<b>FTW</b>	<b>2545</b>	<b>4</b>	<b>U</b>	<b>SM</b>	
FTW CHIARO FT, Wide	2285 (2) 28W T5 2328 (2) 32W T8 2545 (2) 54W T5 HO	4 4'	U Universal 120/277V	SM Surface Mountng Kit SK 20" Suspension Kit, includes feed cord	1 Stand-By Battery Pack (consult factory) TF Transparent diffuser fasteners AV Tamper-proof fastener kit CSO Cool Spot Optimizer* (T5 / T5 HO only)

\* German registered utility patent DE 20307607 U1. Pending European patent application EP 1482534 A2. Pending Norwegian patent application NO 2004 2016.



IBEW Union Made

4. Reflector - Perforated white reflector allows 20% indirect component.

5. Ballast - Universal voltage electronic 120/277V ballast. Ambient temperature will influence performance of fluorescent lamp output. Consult factory for applications with ambient temperatures < 15°F or > 95°F. Consult factory for 347V.

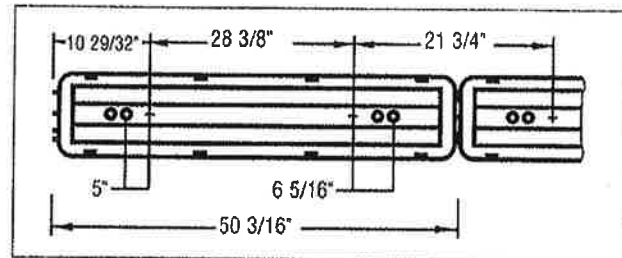
6. Diffuser - One piece, injection-molded impact-resistant polycarbonate, with computer-optimized, internal prismatic structure. Smooth surface for easy cleaning. V2 stainless steel diffuser fasteners included; transparent fasteners may be ordered separately.

7. Mountng - Surface-mount with two supplied V2A stainless steel mounting brackets. May be suspended with 20" SK Suspension Kit, ordered separately.

1. Housing - Transparent, high-impact resistant polycarbonate (halogen-free and self-extinguishing). Polyurethane 2-component foam gasket, wet location rating (IP 65 protection in accordance with EN 60598) is accomplished with unique sealing process.

2. Sockets - Lamp configurations allow for twist lock installation.

3. Lampng - (2) T5, T5 HO or T8 fluorescent lamps, supplied by others. Remove diffuser for access to lamps.



8. Junction Box - 4" octagonal junction box supplied by others. Fixtures can be through-wired.

9. Stand-by Battery Pack - Consult factory for availability.

10. Cool Spot Optimizer - Aluminum sleeve with an injection molded insert that fits into the T5 / T5 HO lamp base (one per lamp on the label side). Keeps the cold spot of the lamp insulated and close to its optimal operating temperature in cold weather.

11. Weight - 4.4 lbs. (4' fixture).

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Technical specification sheets that appear on [www.zumtobel.us](http://www.zumtobel.us) are the most recent version and supersede all other versions that exist in any other printed or electronic form.

Zumtobel Lighting Inc. ©2008  
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www.zumtobel.us  
TEL (845) 691-6262 • (800) 932-0633 • FAX (845) 691-6289  
10/15/08

CHR-2

ZUMTOBEL

## Photometric Data

### FTW 2328 (2) 32W T8

CHIARO FT, WIDE

PRORATED FROM LTL 08206

Total Luminaire Efficiency 79%

20% Uplight 80% Downlight

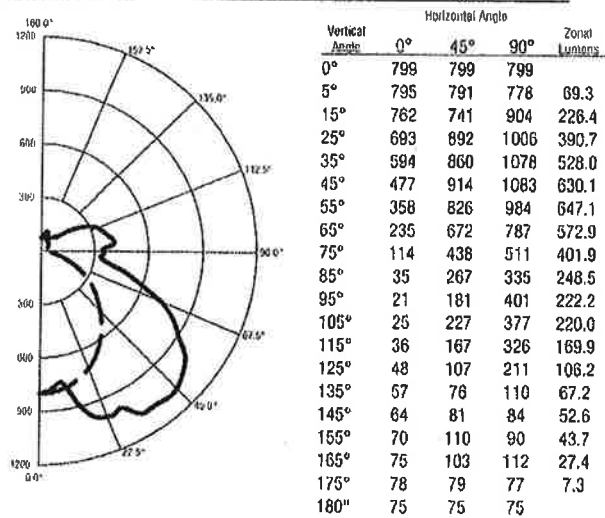
Spacing Criteria

Lateral Plane 0° 90°  
1.2 1.9

TOTAL LAMP LUMENS = 5900

INPUT WATTS = 60

#### Candela Distribution



#### Luminance Data in Candela / Sq. Meter

Angle in Vertical°	Average 0°	Average 45°	Average 90°
45°	2640	3768	4160
55°	2366	3704	4044
65°	2003	3417	3588
75°	1428	2665	2714
85°	885	2104	2209

#### Coefficients of Utilization

Effective Floor Cavity Reflectance = 20%

pcc	Effective Floor Cavity Reflectance = 20%														
	0.8				0.7				0.5				0.3		
nW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	
0	90	90	90	90	86	86	86	80	79	79	70	72	72	72	
1	80	76	72	68	76	72	69	66	66	63	61	60	58	56	
2	72	65	59	54	68	62	56	52	50	52	48	52	46	45	
3	65	56	49	43	62	53	47	42	49	44	39	45	40	37	
4	59	49	41	36	56	47	40	35	43	37	33	39	34	30	
5	54	43	36	30	51	41	34	29	38	32	27	35	30	26	
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7	46	34	27	22	43	33	26	22	30	25	20	28	23	19	
8	42	31	24	20	40	30	23	19	28	22	18	25	21	17	
9	39	28	22	17	37	27	21	17	25	20	16	23	19	15	

### FTW 2545 (2) 54W T5 HO

CHIARO FT, WIDE

LTL 08223

Total Luminaire Efficiency 73%

20% Uplight 80% Downlight

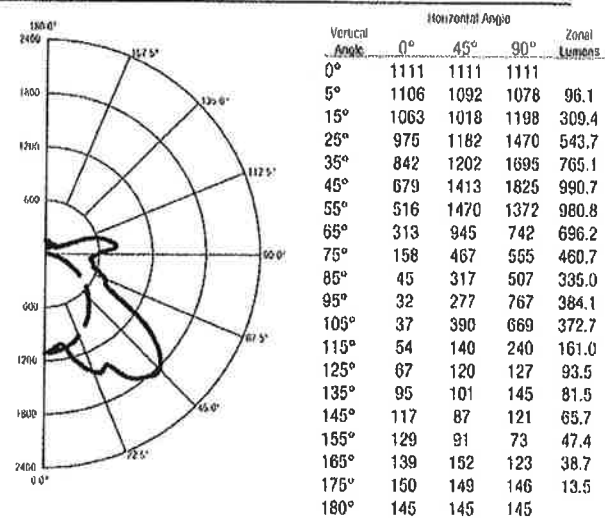
Spacing Criteria

Lateral Plane 0° 90°  
1.2 2.1

TOTAL LAMP LUMENS = 8800

INPUT WATTS = 120

#### Candela Distribution



#### Luminance Data in Candela / Sq. Meter

Angle in Vertical°	Average 0°	Average 45°	Average 90°
45°	3757	5825	7013
55°	3410	6592	5636
65°	2668	4806	3384
75°	1981	2843	2946
85°	1131	2497	3340

#### Coefficients of Utilization

Effective Floor Cavity Reflectance = 20%

pcc	Effective Floor Cavity Reflectance = 20%														
	0.8				0.7				0.5				0.3		
nW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	
0	84	84	84	84	80	80	80	80	73	73	73	67	67	67	
1	75	71	67	64	71	68	65	62	62	60	57	57	55	53	
2	67	61	55	51	64	58	53	49	53	49	46	49	46	43	
3	61	53	46	41	56	51	45	40	46	41	38	42	38	35	
4	55	46	39	34	53	44	38	33	41	35	31	37	33	29	
5	51	41	34	29	48	39	33	28	36	31	26	33	28	25	
6	46	36	30	25	44	35	29	24	32	27	23	29	25	21	
7	43	33	26	21	41	31	25	21	29	23	20	27	22	19	
8	40	29	23	19	38	28	22	18	26	21	17	24	20	16	
9	37	27	21	16	35	26	20	16	24	19	15	22	18	14	

**MUSIC CITY CONVENTION CENTER**  
**LIGHTING FIXTURE SUBMITTAL**

LIGHTING FIXTURE DATA SHEET

**FIXTURE TYPE: 92/92Q**

**FIXTURE INFORMATION**

FIXTURE MANUFACTURE LSI

FIXTURE CATALOG NUMBER: EGW-3-54-T5HO-UE -EGWSB

VOLTAGE: UNV

LAMP MANUF:

LAMP CATALOG NUMBER:

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Approved As Noted:

For areas susceptible to cross winds including the Truck Dock, provide a rigid means of supporting the fixture.

92/92Q

CONTRACTOR'S COMMENTS:

ARCHITECT'S COMMENTS:

ENGINEER'S COMMENTS:

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# WIDE ENCLOSED & GASKETED

# EGW

### PRODUCT HIGHLIGHTS

- Vaportight design
- IP 67 Certified (comparable to NEMA 6) NEMA 4X rated / NEMA 250-2003
- NSF / ANSI Standard 2
- UL50E: standards for safety enclosures of electric equipment
- 12 Point stainless steel latching and stainless hardware
- Multiple lamp cross section choices
- Sloped housing design promotes water displacement
- Optional stainless steel "V" bracket or "SB" surface bracket accessory.
- RoHS Compliant

**HOUSING** - The inner gear tray is constructed of code gauge formed steel. The outer housing is constructed of fiberglass reinforced polyester. Gasketing in the housing is constructed of closed cell polyurethane. Conduit entrance provisions are located on each end. All external hardware and hanging components are constructed of stainless steel.

**ELECTRICAL** - Solid State T8 and T5 options are both available. Ballasts and sockets are replaceable without fixture removal. All devices are UL listed.

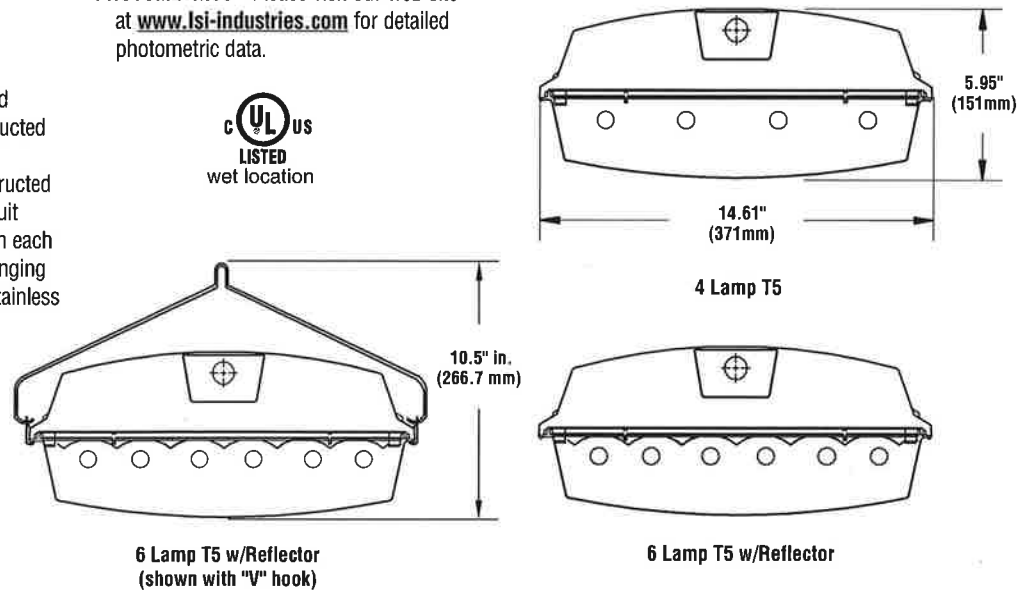
**LENS** - 100% virgin high impact acrylic is standard (ASTM D256) that has a 91.5% light transmission and long lasting clarity and a high resistance to weathering. An optional polycarbonate lens (ASTM D1003) for maximum impact & chemical resistance and temperature variation is also available.

**HIGH PERFORMANCE** - UL certified for use in 40°C ambient with up to (5) 54 watt T5HO lamps (270 watts max.).

**PHOTOMETRICS** - Please visit our web site at [www.lsi-industries.com](http://www.lsi-industries.com) for detailed photometric data.



### DIMENSIONS



### ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **EGW 6 54 SS5HO UE**

Prefix	Number of Lamps	Lamp Type	Ballasts	Options	Voltage
EGW	3 4 5 6 <sup>2</sup>	32 - 32W T8 54 - 54W T5HO	SS5HO - T5HO SSOHL - T8 High Power Factor <sup>2</sup> SSO10 - T8 <10% THD Instant Start SSOR - Program Rapid Start	MWS - Specular Reflector PC - Polycarbonate Lens W6C163 <sup>1</sup> - 6-foot, 16 gauge, 3 conductor cord with Wet Location fitting W6C164 <sup>1</sup> - 6-foot, 16 gauge, 4 conductor cord with Wet Location fitting W6C165 <sup>1</sup> - 6-foot, 16 gauge, 5 conductor cord with Wet Location fitting HUB - 3/4" N.P.T. HUB IN BACK / TOP (Damp Location Rated Only) LT - Lens Safety Teather	UE 120 277 347 480

### ACCESSORY ORDERING INFORMATION

Description	Order Number
Stainless Suspension Hangers ("V" Hook) (Pair)	EGWVB
Cable Hanging Set with Loop 10 ft. (pair)	LCH10
Cable Hanging Set with Loop 20 ft. (pair)	LCH20
Stainless Steel Surface Bracket	EGWSB

1- Specific voltage must be specified. Cord Feed entrance available on housing end only.  
2- 6-lamp T8 with "SSOHL" ballast is rated only @ 25C.

Note: Contact factory for emergency ballast options

05/20/10

Project Name **MUSIC CITY**

Fixture Type **75**

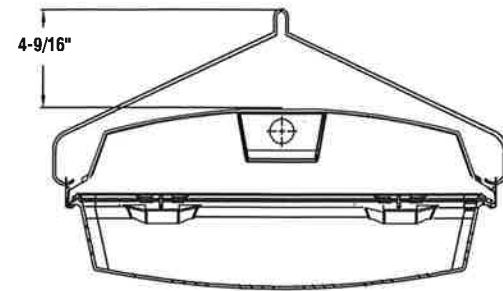
© 2010 LSI INDUSTRIES INC.

Catalog # **EGW-3-54T5HO-UE-EGWSB**

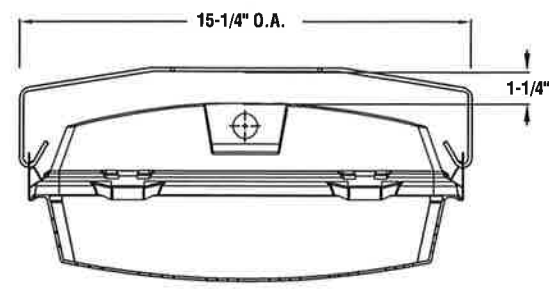


# EGW

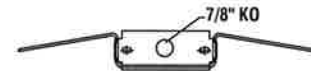
## OPTIONAL MOUNTING



Optional "V" Bracket for cable mounting:  
(Cable and brackets sold seperatley)

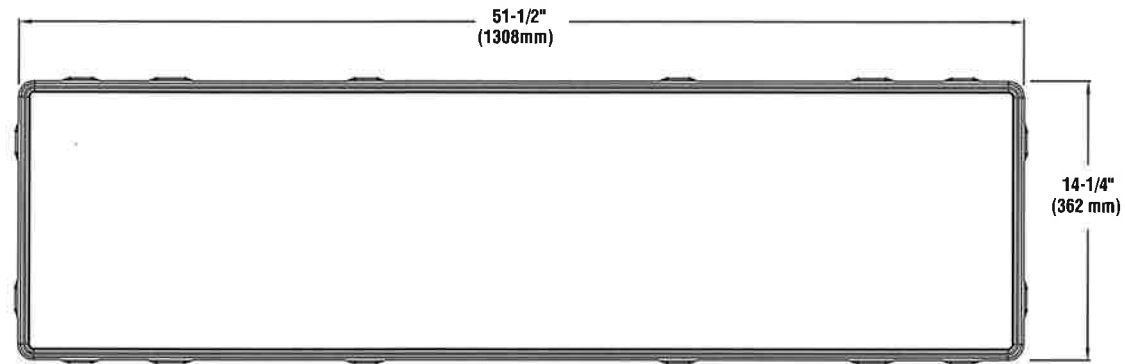


"SB" Optional surface mount bracket



"SB" (Top View)

## DIMENSIONS



### FEATURES & SPECIFICATIONS

**INTENDED USE** — Ideal for use in cold storage, food processing, manufacturing, industrial, schools, gymnasiums and exterior retail environments. Fiberglass enclosure protects fixture while remaining easy to service and clean. **Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.**

**CONSTRUCTION** — One-piece 5VA rated fiberglass housing with continuous poured-in-place, closed-cell gasket. Tool-less ballast and wiring access.

**OPTICS** — Injection-molded, impact-resistant clear acrylic diffuser with frosted ends and linear prisms is standard (.080" thick). UV stabilized polycarbonate diffuser option also is available (.080" thick). Stainless steel latches (12) included. Reflectors are precision-formed, high-performance, segmented optics utilizing premium specular aluminum. Provides 95% reflectivity and warranted for 25 years.

**ELECTRICAL** — Ballasts: Thermally protected, resetting, Class P, HPF, Sound Rating A+. UL listed wire, rated for required temperatures, used throughout. 90°C rated ballast standard for T5HO, T8 ballast starting temperature is -18°C (0°F) and T5HO starting temperature is -19°C (-20°F).

Lamps: 4100K lamps standard. Secured with rotary locking lampholders for ease of re-lamping and to minimize disconnection due to vibration or incidental contact.

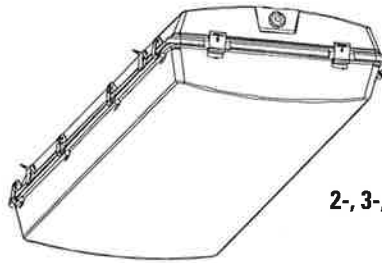
**INSTALLATION** — Surface conduit entry provisions with watertight plugs are standard. Stainless steel mounting brackets included for suspension with aircraft cable (cable not included). Optional stainless steel V-hooks available for chain hanging (chain not included).

**LISTING** — UL/C-UL listed to US and Canadian Safety Standard. NOM Certified (see Options). UL listed for 40°C ambient (except six-lamp 54T5HO, which is UL listed at 35°C ambient). Suitable for wet location. IP65, IP66 and IP67 rated and certified to meet NSF Splash Zone 2. NEMA 4X. 1500 PSI hose-down.

**WARRANTY** — Guaranteed for one year against mechanical defects in manufacturing.

Catalog Number	
<b>FHE-354L-SD-SMB</b>	
Notes	Type
FOR COMPARISON ONLY	<b>92,92Q</b>

### High-Pressure Hose-Down



# FHE

**Food Processing**  
2-, 3-, 4- or 6-lamp, T5HO, T5 or T8

FOR COMPARISON ONLY TO  
THE LSI SUBMITTED

#### Specifications

Length: 51.9" (131.8)  
Width: 14.6" (37.08)  
Depth: 5.95" (15.1)  
Weight: 26.2 lbs. (11.88 kg)

All dimensions are inches (centimeters).  
Specifications subject to change without notice.

### ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: FHE 454L 1/4

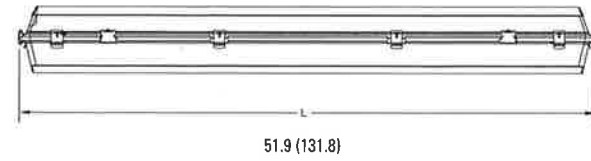
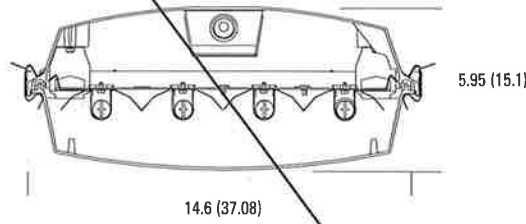
FHE	2	54	C	277	1	SMB
Series	Lamp type <sup>1</sup>	Distribution	Voltage	Ballast	Lamps installed <sup>4</sup>	
<b>FHE 15"x4'</b>	<b>T5HO lamps</b>	<u>White ballast cover</u> (blank) <b>General distribution</b>	(blank) <b>MVOLT; 120V-277V</b>	<b>T5/T5HO</b> (blank) <b>1.0 BF, PRS</b>	(blank) <b>85 CRI, 841</b>	
	254L 2-lamp, 54W	<u>Specular reflector</u> <b>ND Narrow distribution</b>	<b>HVOLT 347V-480V<sup>3</sup></b>	<b>T8</b> (blank) <b>1.18 BF, IS</b>	LP830 85 CRI, 830	
	354L 3-lamp, 54W	<b>SD Spread distribution</b>		GEB10IS .88 BF, IS	LP835 85 CRI, 835	
	<b>454L 4-lamp, 54W</b>			GEB10ISL .76 BF, IS	LP850 85 CRI, 850	
	<b>654L 6-lamp, 54W</b>			GEB10PS .88 BF, PRS		
	<b>T5 lamps</b>	<b>Shielding</b>	<b>Ballast configuration</b>	<b>Options<sup>5</sup></b>		
	228T5L 2-lamp, 28W	(blank) <b>Clear acrylic</b>	(blank) <b>All two-lamp ballasts</b>	CX 6' white cord, 18/3, no plug		
	328T5L 3-lamp, 28W	PCL Clear polycarbonate <sup>2</sup>	1/3 One, three-lamp ballast <sup>3</sup>	CXL12 12' white cord, 18/3, no plug		
	428T5L 4-lamp, 28W		1/4 One, four-lamp ballast <sup>3</sup>	EL14DW Emergency lighting (1400 lumens) <sup>6,7</sup>		
	628T5L 6-lamp, 28W		2/3 Two, three-lamp ballasts <sup>3</sup>	LP600 Low-profile emergency ballast <sup>7</sup>		
	<b>T8 lamps</b>		1/4 1/2 One, four-lamp and one, two-lamp ballasts <sup>3</sup>	PMP Pendant monopoint (pre-drilled housing with wet location fitting installed.)		
	232L 2-lamp, 32W			RMK Rigid mount kit, 18-gauge stainless steel		
	332L 3-lamp, 32W			SMB Surface mounting bracket		
	<b>432L 4-Lamp, 32W</b>			WLF Wet location fitting (two pre-installed, 40" off centers)		
	<b>632L 6-Lamp, 32W</b>			<b>MHKB Stainless steel V-hook and brackets</b>		
				MSI_ Wet location occupancy sensor pre-wired <sup>9,9</sup>		
				TRS Tamper-resistant screws <sup>10</sup>		
				NOM Meets Mexican standards		

NOTES:  
1 To order fixtures WITHOUT lamps, remove the "L" from the description (EX: FHE 454).  
2 Recommended for school and gymnasium applications.  
3 Not available with 28T5.  
4 Alternate lamp color need only be specified if pre-installed lamps are provided.  
5 For additional options consult factory.  
6 Must specify voltage.  
7 900 lumens for T5HO. UL listed for 55°C. Output in emergency mode varies with ambient temperature (approx. 944 lumens at 25°C and 911 lumens at 45°C. Single-lamp operation only. Not available with HVOLT.  
8 For mounting up to 20', specify MSI20; for mounting up to 40', specify MSI40.  
9 GEB10PS recommended.  
10 Stainless steel Torx® T10 screws with center reject pin.

# FHE Fluorescent High-Pressure Hose-Down, T5, T5HO and T8

## DIMENSIONS

Dimensions in inches (centimeters). Subject to change without notice.



## PHOTOMETRICS

Consult factory for photometric information.

TEST NO.: ABA200972  
LUMINAIRE CATALOG NO.: FHE 654L ND  
LUMENS PER LAMP: 4450

RCR	pc	Coefficients of Utilization								
		80%			70%			50%		
		50%	30%	10%	50%	30%	10%	50%	30%	10%
0	77	77	77	75	75	75	71	71	71	
1	67	64	61	65	62	60	62	59	57	
2	58	53	49	57	52	49	54	50	47	
3	51	45	41	50	45	41	47	43	40	
4	45	39	35	44	39	35	42	38	34	
5	41	35	30	40	34	30	38	33	29	
6	37	31	26	36	30	26	34	29	26	
7	33	28	23	33	27	23	31	27	23	
8	30	25	21	30	25	21	29	24	21	
9	28	23	19	27	22	19	27	22	19	
10	26	21	17	25	21	17	25	20	17	

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	4789.4	17.9	27.4
0° - 40°	7621.2	28.5	43.5
0° - 60°	12733.3	47.7	72.7
0° - 90°	16817.2	63.0	96.0
90° - 180°	691.9	2.6	4.0
0° - 180°	17509.1	65.6	100.0

TEST NO.: ABA200975  
LUMINAIRE CATALOG NO.: FHE 454L ND  
LUMENS PER LAMP: 4450

RCR	pc	Coefficients of Utilization								
		80%			70%			50%		
		50%	30%	10%	50%	30%	10%	50%	30%	10%
0	93	93	93	90	90	90	86	86	86	
1	80	77	74	78	75	73	75	72	70	
2	71	65	61	69	64	60	66	62	58	
3	62	56	51	61	55	51	58	54	49	
4	56	49	44	55	48	43	52	47	43	
5	50	43	38	49	43	38	47	42	37	
6	45	39	34	45	38	34	43	37	33	
7	41	35	30	41	34	30	39	34	30	
8	38	32	27	37	31	27	36	31	27	
9	35	29	25	35	29	25	34	28	24	
10	33	26	22	32	26	22	31	26	22	

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	4370.5	24.6	31.4
0° - 40°	6760.0	38.0	48.6
0° - 60°	10724.0	60.2	77.1
0° - 90°	13579.1	76.3	97.6
90° - 180°	338.7	1.9	2.4
0° - 180°	13918.1	78.2	100.0

TEST NO.: ABA200978  
LUMINAIRE CATALOG NO.: FHE 632L ND  
LUMENS PER LAMP: 2950

RCR	pc	Coefficients of Utilization								
		80%			70%			50%		
		50%	30%	10%	50%	30%	10%	50%	30%	10%
0	90	90	90	88	88	88	83	83	83	
1	78	74	71	76	73	70	72	69	67	
2	68	62	57	66	61	57	63	58	55	
3	59	53	48	58	52	47	55	50	46	
4	52	45	40	51	45	40	49	43	39	
5	47	40	34	46	39	34	44	38	33	
6	42	35	30	41	34	30	39	34	29	
7	38	31	26	37	31	26	36	30	26	
8	35	28	24	34	28	23	33	27	23	
9	32	25	21	31	25	21	30	25	21	
10	29	23	19	29	23	19	28	23	19	

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	3399.9	19.2	25.1
0° - 40°	5527.2	31.2	40.8
0° - 60°	9869.8	55.8	72.9
0° - 90°	13023.2	73.6	96.2
90° - 180°	508.1	2.9	3.8
0° - 180°	13531.3	76.4	100.0

TEST NO.: ABA200981  
LUMINAIRE CATALOG NO.: FHE 432L ND  
LUMENS PER LAMP: 2950

RCR	pc	Coefficients of Utilization								
		80%			70%			50%		
		50%	30%	10%	50%	30%	10%	50%	30%	10%
0	104	104	104	101	101	101	96	96	96	
1	90	86	82	88	84	81	83	80	78	
2	78	72	67	76	71	66	73	68	64	
3	69	62	56	67	61	55	64	59	54	
4	61	54	48	60	53	47	57	51	46	
5	55	47	41	54	46	41	52	45	40	
6	50	42	36	49	41	36	47	40	35	
7	45	37	32	44	37	32	43	36	31	
8	41	34	29	41	34	29	39	33	28	
9	38	31	26	37	31	26	36	30	26	
10	35	28	24	35	28	24	33	27	23	

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	2914.9	24.7	28.2
0° - 40°	4642.9	39.3	44.8
0° - 60°	7769.6	65.8	75.1
0° - 90°	10026.8	85.0	96.9
90° - 180°	325.4	2.8	3.1
0° - 180°	10352.3	87.7	100.0



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