

**FEATURES**

- Extremely efficient fluorescent luminaire replaces HID in retail and industrial applications
  - Energy savings up to 47%
  - Excellent lumen maintenance (94% versus ~65% for typical metal halide)
  - Higher maintained lumens per watt (up to 68, versus 40 for typical metal halide high bay)
  - Instant restrike
  - Consistent color
  - Superior color rendering (82 CRI, versus 65-70 for metal halide)
  - Wide choice of lamp color
- Highly specular contoured reflectors drive light down to provide excellent vertical footcandles
- Choice of uplight option
- Battery pack option (-EL) provides instant-on emergency illumination
- Tool-free access to lamps and ballasts
- Rounded edges and corners for safe handling and installation

**PROJECT INFORMATION**

Project Name \_\_\_\_\_

Type \_\_\_\_\_

Catalog No. \_\_\_\_\_

Date \_\_\_\_\_

**CONSTRUCTION**

Riveted 22 gauge steel construction full body housing, with embossments for added rigidity.

**REFLECTOR**

Multi-faceted 95% reflectance MIRO®-4 reflector provides precise control and excellent efficiency. Also available in white powder coat for broad light distribution. Optional 12% uplight may be specified. Retained with quarter-turn fasteners for tool-free ballast access.

**BALLAST AND ELECTRICAL**

Energy efficient electronic, thermally protected, automatic resetting, Class P, high power factor, sound rated A. Positive stop, anti-vibrational locking lampholders. All configurations have been heat tested to ensure reliable operation and performance under normal conditions. CEE NEMA Premium compliant.

**FINISH**

All steel surfaces are pre-painted with high gloss baked white enamel, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

**MOUNTING**

Choice of mounting hardware, including the fast and flexible GLH adjustable cable system for simplified mounting to wood, concrete or steel ceiling decks, or to beams, purlins or metal strut. Also available with hardware to mount with jack chain or directly to metal strut. Optional safety tether available.

**CERTIFICATION**

All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

**ORDERING INFORMATION**

**EXAMPLE LHR4-454-M4RU-4EPU-F5841**

LHR 4 - 4 - - - -							
MODEL	NO. OF LAMPS	REFLECTOR	UPLIGHT	VOLTAGE	OPTIONS		
LHR Ultra-Efficient Fluorescent High Bay	4 Four	M4R MIRO®-4, 95% Reflectance (S/MH = 1.0) GW Gloss White Powder Coat (S/MH = 1.4) LS Specular Anodized Aluminum	ST Solid Top (No Uplight) U 12% Uplight	U 120V-277V 347 347V (HO only) 480 480V (HO only)	F5835 T5 or T5HO Lamp Installed, 85CRI, 3500K' F5841 T5 or T5HO Lamp Installed, 85CRI, 4100K' F5850 T5 or T5HO Lamp Installed, 85 CRI, 5000K F0835 T8 Lamp Installed, 82 CRI, 3500K F0841 T8 Lamp Installed, 82 CRI, 4100K F0850 T8 Lamp Installed, 82 CRI, 5000K	GLR Fast Blow Fuse EL Emergency Battery Pack F3C5 3-conductor 5' Feed Cord Wired to Fixture F3C10 3-conductor 10' Feed Cord Wired to Fixture F3C15 3-conductor 15' Feed Cord Wired to Fixture F4C5 4-conductor 5' Feed Cord Wired to Fixture F4C10 4-conductor 10' Feed Cord Wired to Fixture F4C15 4-conductor 15' Feed Cord Wired to Fixture C6TL15 6' Cord and Twist-Lock™ Plug 15A (Add Voltage: 1=120, 2=277) C6TL20 6' Cord and Twist-Lock™ Plug 20A (Specify Voltage 1=120, 2=277) C6P15 6' Cord and Straight Blade Plug 15A (Add Voltage: 1=120, 2=277) FSCA Flush Steel Door with Clear Acrylic Lens FSCP Flush Steel Door with Clear Polycarbonate Lens FSCAWG Flush Steel Door with Clear Acrylic Lens and Flat Wire Guard FSCPWG Flush Steel Door with Clear Polycarbonate Lens and Flat Wire Guard PAF Paint After Fabrication LHTD Safety Tether for Door Assembly, Fastened to Fixture Housing NYC NYC Compliant 20G 20 Gauge Steel	
SIZE	LAMP TYPE	BALLAST					
4 48" x 17 3/8"	28 4', T5: 28 Watt 32 4', T8: 32, 30, 28 or 25 Watt 54 4', T5HO: 54 or 51 Watt	E (2) 2-Lamp Electronic T8, Instant Start 4E (1) 4-Lamp Electronic T8, Instant Start EP (2) 2-Lamp Electronic T5, Programmed Start 4EP 4-Lamp Electronic T5, Programmed Start (N/A 347V or 480V) For a specific ballast vendor, show as option.					
ACCESSORIES (FIELD INSTALLED)							
LHTF Fixture Safety Tether							
LHHB-LHR4-4LT Universal Hanger Bracket Kit							
LHSH Metal Strut Hanger							
GLH5 5' Adjustable Cable Kit*							
GLH10 10' Adjustable Cable Kit*							
GLH15 15' Adjustable Cable Kit*							
LHRWG4K Wire Guard for LHR4-4 (Cage Type, not to be used with any door options)							
OS1360K Occupancy/Daylight Sensor Kit, 120/277/347V, One Relay, 360 Lens**							

\* Use with LHHB-LHR4-4LT.  
\*\* Use programmed start ballast. Not recommended for use with an instant start. For more occupancy/daylight harvesting sensor accessories contact your Columbia Lighting representative.

† Lamp type in catalog number will determine lamp installed.

## PHOTOMETRIC DATA

Test 13351 Test Date 5/20/03

### LUMINAIRE DATA

Luminaire	LHR4-454-M4RU LHR Industrial 17" x 48" 4-Lamp with MIRO4 Reflector and 4 Rows Uplight Slots
Ballast	ICN2S54
Ballast Factor	1.00
Lamp	F54T5
Lumens per Lamp	4400
Total Input Watts	252
Shielding Angle	N/A
Spacing Criterion	Along = 1.25 Across = 1.10

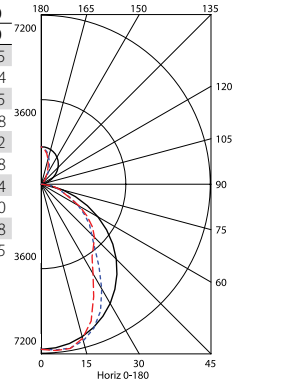
### AVG. LUMINANCE (Candela/Sq. M.)

	0.0	22.5	45.0	67.5	90.0
Average Luminance Angle	0	13998	13998	13998	13998
	30	13475	13574	11821	10353
	40	13021	12047	9185	8959
	45	12699	10707	8543	8999
	50	12302	9280	8293	8853
	55	11767	7774	7774	8447
	60	11083	6626	7175	7645
	65	10198	5744	6540	6248
	70	8994	5242	5573	5428
	75	7365	5243	5389	5820
	80	5019	4801	5947	5592
	85	2580	3995	2283	2580

### COEFFICIENTS OF UTILIZATION (%)

RCR	RC	80					70					50					0
		RW	70	50	30	10	70	50	30	10	50	30	10	0			
1	106	102	98	95	103	99	95	92	93	90	87	75					
2	97	90	84	79	94	87	82	77	82	77	73	64					
3	89	80	73	67	86	78	71	65	73	67	63	55					
4	82	71	63	57	79	69	62	56	66	59	54	48					
5	76	64	56	50	73	63	55	49	59	53	48	42					
6	71	58	50	44	68	57	49	43	54	47	42	38					
7	66	53	45	39	63	52	44	39	49	43	38	34					
8	61	49	41	35	59	47	40	35	45	39	34	30					
9	57	45	37	32	55	44	36	32	42	35	31	28					
10	54	41	34	29	52	41	33	29	39	32	28	25					

### INDOOR CANDELA PLOT



### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	5303	30.1	30.3
0-40	8158	46.4	46.7
0-60	13052	74.2	74.7
0-90	15474	87.9	88.6
0-180	17474	99.3	100.0

RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

### ENERGY DATA

Total Luminaire Efficiency	99.3%
Luminaire Efficacy Rating (LER)	69
IESNA RP-1-1993 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.48 based on 3000 hrs. and \$0.08 per KWH

### LUMINAIRE DATA

Luminaire	LHR4-432-M4RU LHR, Industrial 2X4 4-LAMP WITH SPECIAL MIRO4 REFLECTORS AND 4 ROWS UP LIGHT SLOTS
Ballast	REL-4P32-SC
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2950
Total Input Watts	111
Shielding Angle	0° = 0 90° = 0
Spacing Criterion	0° = 1.24 90° = 0.96

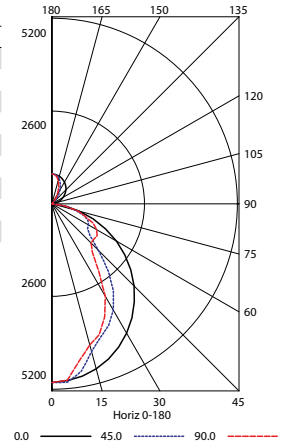
### AVG. LUMINANCE (Candela/Sq. M.)

	0.0	22.5	45.0	67.5	90.0
Average Luminance Angle	0	9771	9771	9771	9771
	30	9425	8168	7756	7037
	40	9153	7716	6261	4779
	45	8977	7390	5072	4236
	50	8761	6822	4247	4441
	55	8492	5998	4147	5018
	60	8137	4734	4617	5456
	65	7665	3777	5144	5804
	70	6995	3788	5489	5512
	75	5971	4396	5119	5459
	80	4529	4383	4978	4338
	85	2485	3515	1679	985

### COEFFICIENTS OF UTILIZATION (%)

RCR	RC	80					70					50					0
		RW	70	50	30	10	70	50	30	10	50	30	10	0			
1	106	101	97	94	102	98	94	91	92	89	87	75					
2	97	89	82	77	93	86	80	75	81	76	72	64					
3	88	79	71	65	85	76	69	64	72	66	61	54					
4	81	70	62	56	78	68	61	55	64	58	53	47					
5	75	63	55	48	72	61	54	48	58	51	46	41					
6	70	57	49	43	67	56	48	42	53	46	41	37					
7	65	52	44	38	62	51	43	38	48	42	37	33					
8	60	48	40	34	58	47	39	34	45	38	33	30					
9	57	44	36	31	55	43	36	31	41	35	30	27					
10	53	41	33	28	51	40	33	28	38	32	27	25					

### INDOOR CANDELA PLOT



### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	3481	29.5	29.9
0-40	5350	45.3	45.9
0-60	8457	71.7	72.5
0-90	10479	88.8	89.9
0-180	11660	98.8	100.0

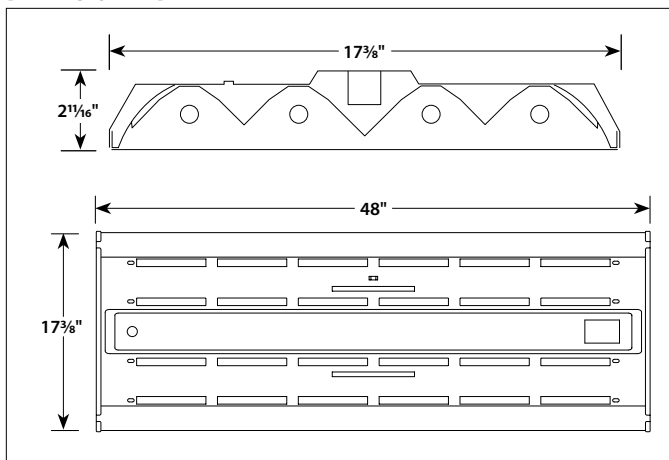
RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

### ENERGY DATA

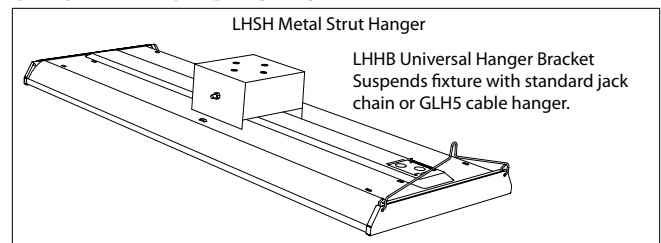
Total Luminaire Efficiency	98.8%
Luminaire Efficacy Rating (LER)	92
IESNA RP-1-1993 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.61 based on 3000 hrs. and \$0.08 per KWH

### DIMENSIONAL DATA

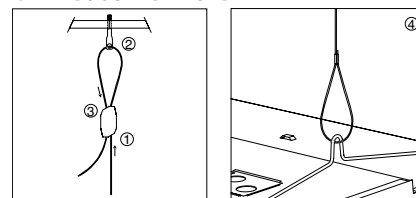


**NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

### OPTIONAL HANGER BRACKETS



### GLH ADJUSTABLE CABLE KIT



- 1) Pass free end through grip fastener.
- 2) Feed free end around beam or through lag screw or eye bolt.
- 3) Return free end through grip fastener and adjust desired length.
- 4) Slip loop over LHHB bracket.