Highbay Fluorescent

3/29/2019

Highbay Fluorescent - 3 or 4 Lamp
Curved Profile Design

Proudly
Designed & Assembled
IN THE USA*

Project:	
Catalog#:	
Approved by:	

Description

HFB3 series high-bay fluorescent fixture is a great energy saving alternative to traditional HID highbay fixtures. This fixture operates three or four lamps and as a standard feature comes equipped with Howard ballasts.

Applications

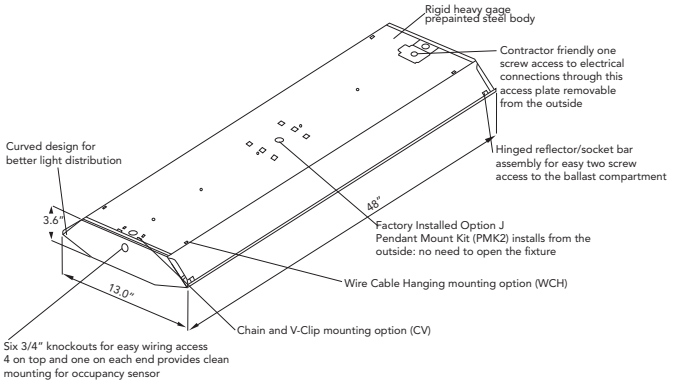
Warehouse
Manufacturing Facility
Gymnasium
Cafeteria
Auditorium

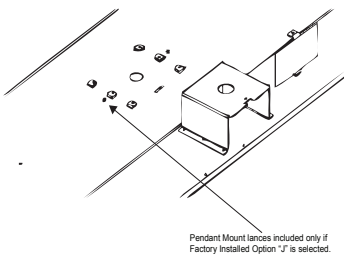
Benefits

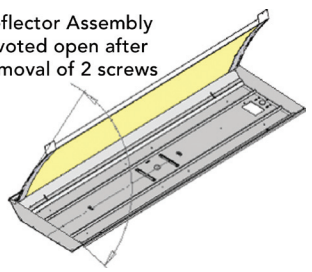
- Energy Saving Compared to HID systems
- Exceptional Color Rendering
- High System Efficacy
- Long Lamp Life
- Instant On/Re-strike Capability
- Howard Ballast and Howard Lamp as a system is covered by Howard Industries Warranty
- Quality Lamp holders
- Computer Designed Reflectors
- System Tested, Designed, Approved, and Manufactured by Howard Industries in Mendenhall Mississippi.
- Compliant with Safety and performance standards.

Features

- Easy access to wiring compartment & ballast
- Access plate provides access to electrical wiring with-out the need to open the fixture
- Knock-outs for easy electrical wiring and assembly
- Factory Installed Occupancy Sensor option
- Factory Installed Emergency ballast option
- Factory Installed Wrap Lens option
- Lamp Installation option available
- Multiple power cord set options, (voltage, length, gage)
- Pendant mount kit provides a top J-box to simplify HID retrofit installations. Can be used with a hook or rigid conduit and fasteners (Fixture must be specified with "J" option)
- Choice of 86% Standard Specular Aluminum Reflector, 95% Specular Enhanced Aluminum Reflector or 91% White Reflector
- Heavy Duty pre-painted steel construction
- Wireguard available (not factory installed)
- Custom configurations available
- Can be easily mounted by a single person
- Suspended or Pendant mounting insures a quick painless install
- Chain and V-Clip Hanging option
- Wire cable hanging option.
- UL Listed for Damp Locations







*Foreign and domestic components.

Specifications subject to change without notice.

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Ordering Information

Model Family	Reflector	No. of Lamps	Lamp Type/ Wattage(1)	CRI/CCT	Ballast	Input Volts	Factory Installed Options	Cordset Options (consult customer service for other cordset options)	TBA	Pack.
HFB3	E	4	32	A	P8	MV	00A	07	0	I
HFB3	E: Enhanced Specular Aluminum (95%) A: Specular Aluminum (86%) W: White reflective (91%)	3 4	**T8 Lamps** 28: F28T8 32: F32T8 **T5 Lamps** 28:F28T5 54: F54T5HO	CRI CCT High Lumen T8 T5 A: No Lamps F: 85 3000 X X G: 85 3500 X X H: 85 4100 X X I: 85 5000 X X J: 85 6500 X K: 85 3000 Yes X L: 85 3500 Yes X M: 85 4100 Yes X N: 85 5000 Yes X	SE: SBF High Eff(2) HE: HBF High Eff(2) LE: LBF High Eff(2) PS: PRS T5 P8: PRS T8(2)	MV: 120-277v HV: 347-480v (T5HO) AX: 480-277(3)	000: No FIOs A: Occ Sensor(4) B: Emergency Ballast(5) D: Wrap Lens(6) I: Special Wiring Instructions J: J-box config.(7)	00: Standard Disconnect 01: 6' SJT 18/3, no plug 02: 10' SJT 18/3, no plug 03: 6' SJT 18/3 L5-15, twist lock 120v 04: 10' SJT 18/3 L5-15twist lock 120v 05: 6' SJT 18/3 5-15non twist lock 120v 06: 10' SJT 18/3 5-15non twist lock 120v 07: 6' SJT 18/3 L7-15 twist lock 277v 08: 10' SJT 18/3 L7-15 twist lock 277v 09: 6' SJT 7-15 non twist lock 277v 10: 10' SJT 7-15 non twist lock 277v 11: 16/3, no plug spec len 12: 16/4, no plug spec len 16: 16' SJT 18/3 7-15, non twist lock 277v 17: 18/3, no plug spec len 18: 6' STW L8-20, twist lock 480v 19: 10' STW L8-20, twist lock 480v 20: 16' SJT 18/3 L5-15, twist lock 120v 21: 16' SJT 18/3 L5-15, twist lock 277v		I: Single

(1) Lamp installation available.
(2) High Efficiency ballasts are CEE Listed.
(3) Step-down autotransformer. Allows hook-up of standard MV ballast to 480v.
(4) Occupancy Sensors should be used with programmed rapid start ballasts for maximum lamp life.
Standard Occupancy Sensor requires neutral wired fixtures (ex. -120v or -277v).
For phase-to-phase voltage applications (240v) advise Customer Service at time of request.
(5) Please specify Emergency Ballast (120-277v only) lumen requirements at time of request.
(6) Standard acrylic prismatic, pattern 12, 0.100" thick. Call for options.
(7) Unless otherwise specified, fixture will include field installed J-box. Supply wires will exit the center of the fixture, not the access plate. J-box can be installed without entering the fixture.

SE	Standard Ballast Factor High Efficiency Instant Start T8 Ballast
HE	High Ballast Factor High Efficiency Instant Start T8 Ballast
LE	Low Ballast Factor High Efficiency Instant Start T8 Ballast
PS	Program Rapid Start T5 Ballast
P8	Program Rapid Start High Efficiency T8 Ballast

Specifications subject to change without notice.

Sample Ordering Number:
HFB3 E 4 32 A P8 MV 00A 07 I
HFB3 Series Highbay Fluorescent
Enhanced Specular Aluminum Reflector
4-lamps (none installed)
F32T8 Program Rapid Start High Efficiency Ballast
Multi-volt (120-277v)
Occupancy Factory Installed Options
6' SJT 18/3 cord L7-15 277v twist lock plug
Single Packaging

RAPID SHIP MODELS
AVAILABLE FOR NEXT DAY SHIPMENT

- HFB3E432AHEMV000000I
- HFB3E454APSMV000000I
- HFB3E454IPSMV000020I *(with lamps & cordset)*

c UL us

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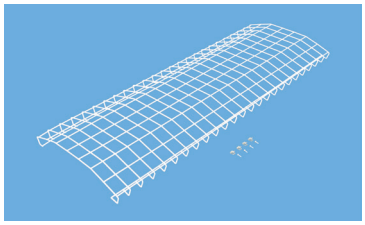
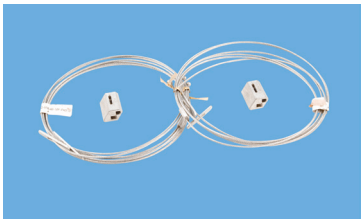
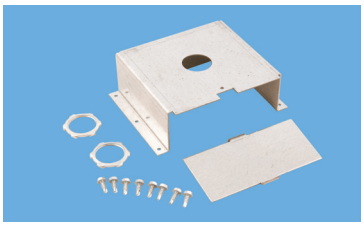
Field Installed Options Ordering



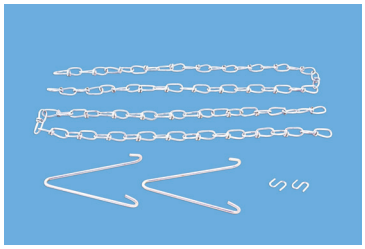
HFB3-WG
Wire Guard



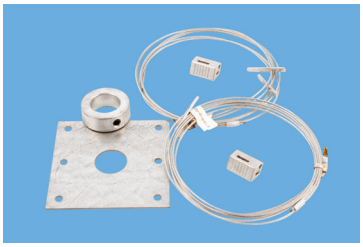
HFA-WCH
Wire Cable Hanging Kit
(2 pcs per kit)



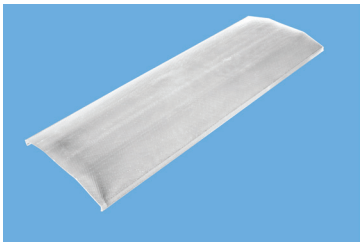
HF-PMK2
Pendant Mount Kit
with 1.0" diameter through hole



HF-2CV (2 foot)
HF-3CV (3 foot)
Hanging Chain & V-clips



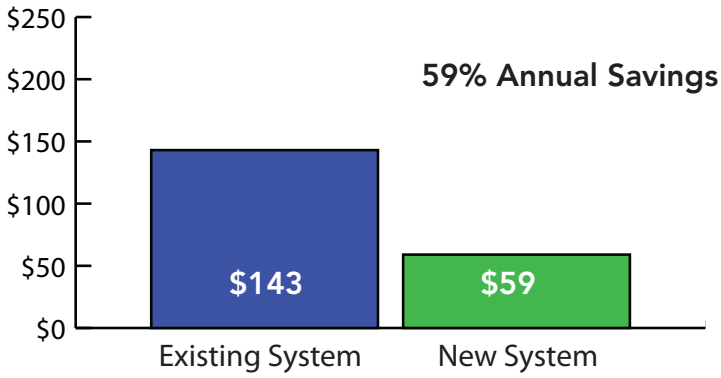
HF-SK1
Stabilizer Kit
(Hub, color and wire cable)



HFB3-WL
Wrap Lens

Energy Cost Estimator

		Existing System		New System	
		250W MH Highbay		HFB3E432AP8 Prog. Start High Eff Fluorescent Highbay	
Hours burned per year	4368	Number of Fixtures	1	Number of Fixtures	1
Cost per kWh$	0.12	Watts per Fixture (existing system)	272	Watts per Fixture (new system)	112
Energy Cost Estimation		Energy used per year (existing system)	$143	Energy used per year (new system)	$59
		Energy saving per year (per fixture)		$84.00	



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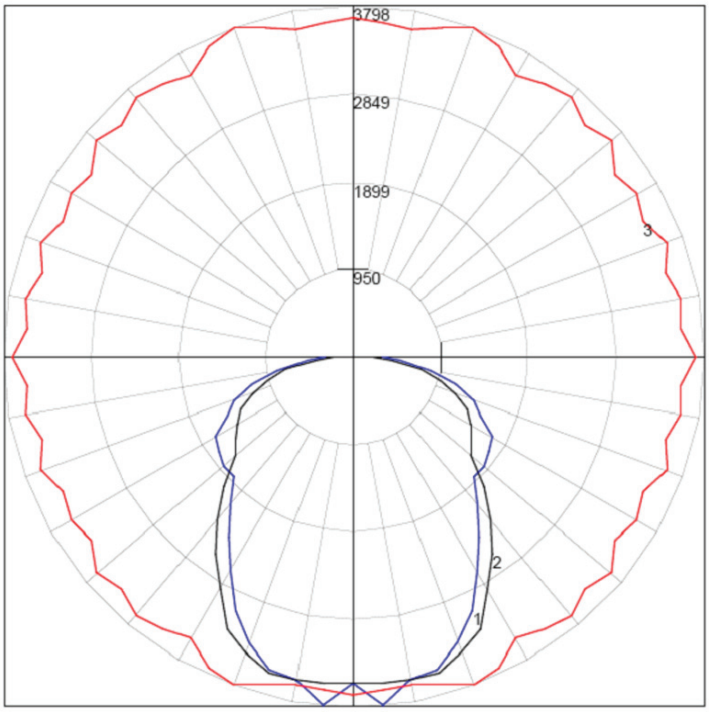
Photometric Data - 4 Lamp T8 (HFB3E432)

Candela Polar Plot



HFB3E432
Test Report: HFB3E432.ies
Spacing Criteria (0-180): 1.28
Spacing Criteria (90-270): 1.12
Spacing Criteria (Diagnonal): 1.30

Maximum Candela = 3798.24

Located at Horizontal Angle = 70, Vertical Angle = 5
#1 = Vertical Plane Through Horizontal Angles (70-250) Through Max Cd.
#2 = Vertical Plane Through Horizontal Angles (45-225)
#3 = Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

Luminaire Efficiencies*

Reflector Type	T8
Enhanced Specular	90.9%
Specular	84%
White	85%

*Luminaire efficiency is the ratio of light output emitted by the luminaire to the light output emitted by its lamps.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fix
0-30	2796.29	24.10	26.50
0-40	4443.61	38.30	42.10
0-60	7633.57	65.80	72.40
0-90	10415.48	89.80	110
0-180	10544.8	90.90	100.00

Luminance Data (cd/Sq.m)

Angle In Degrees	Average 0-deg	Average 45-deg	Average 90-deg
45	7999	5689	5384
55	7517	5036	6938
65	6806	5279	5798
75	5619	4965	5566
85	2854	3142	3597

Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	107	107	107	107	105	105	105	105	100	100	100	96	96	96	92	92	92	90
1	96	92	87	83	94	90	86	82	86	82	79	82	79	77	79	77	75	73
2	87	79	73	67	85	77	71	66	74	69	65	71	67	63	68	65	62	60
3	79	69	61	55	77	68	61	55	65	59	54	63	57	53	60	56	52	50
4	73	61	53	47	70	60	52	46	58	51	46	56	50	45	54	49	44	42
5	67	55	46	40	65	54	46	40	52	45	39	50	44	39	48	43	39	37
6	62	49	41	35	60	48	41	35	47	40	35	45	39	34	44	38	34	32
7	57	45	37	31	56	44	36	31	43	36	31	41	35	30	40	34	30	28
8	53	41	33	28	52	40	33	28	39	32	27	38	32	27	37	31	27	25
9	50	38	30	25	49	37	30	25	36	29	25	35	29	25	34	29	25	23
10	47	35	28	23	46	34	27	23	33	27	23	33	27	22	32	26	22	21

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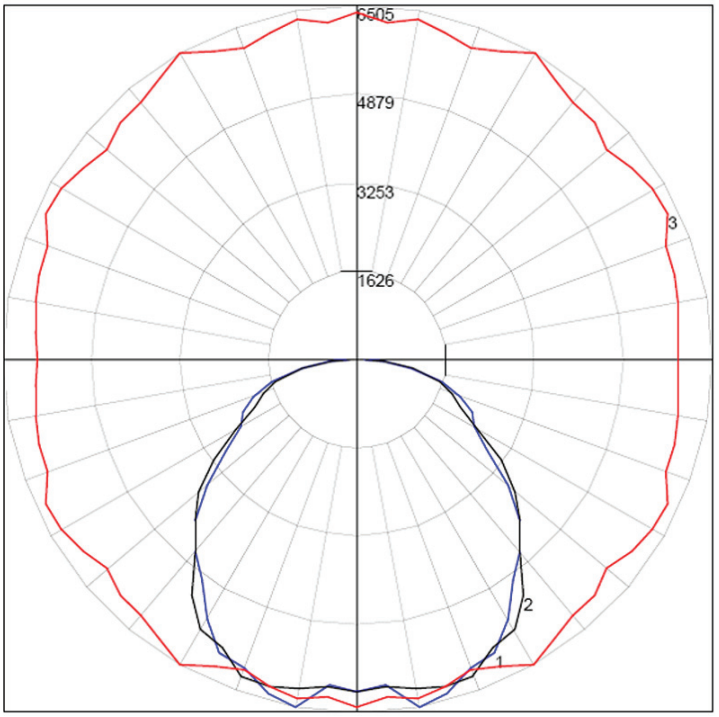
Photometric Data - 4 Lamp T5 (HFB3E454)

Candela Polar Plot



HFB3E454
Test Report: HFB3-454-MOD.ies
Spacing Criteria (0-180): 1.26
Spacing Criteria (90-270): 1.30
Spacing Criteria (Diagnonal): 1.40

Maximum Candela = 6505.34

Located at Horizontal Angle = 60, Vertical Angle = 10
#1 = Vertical Plane Through Horizontal Angles (60-240) Through Max Cd.
#2 = Vertical Plane Through Horizontal Angles (45-225)
#3 = Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

Luminaire Efficiencies*

Reflector Type	T5
Enhanced Specular	93%
Specular	88%
White	88%

*Luminaire efficiency is the ratio of light output emitted by the luminaire to the light output emitted by its lamps.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fix
0-30	5018.63	25.10	26.90
0-40	8217.01	41.10	44.00
0-60	14314.51	71.60	76.60
0-90	18683.6	93.40	100.00
0-180	18683.6	93.40	100.00

Luminance Data (cd/Sq.m)

Angle In Degrees	Average 0-deg	Average 45-deg	Average 90-deg
45	15860	15289	14862
55	14682	13909	12227
65	13288	11505	13835
75	11396	12493	12773
85	9001	7421	7403

Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	111	111	111	111	109	109	109	109	104	104	104	99	99	99	95	95	95	93
1	101	96	92	88	98	94	90	87	90	87	84	84	86	81	83	81	79	77
2	92	84	77	71	89	82	76	70	78	73	69	75	71	67	72	69	66	64
3	83	73	65	59	81	72	64	59	69	63	58	66	61	57	64	59	56	53
4	76	65	56	50	74	64	56	50	61	54	49	59	53	48	57	52	48	46
5	70	58	49	43	68	57	49	43	55	48	42	53	47	42	51	46	41	39
6	65	52	44	38	63	51	43	37	50	42	37	48	42	37	46	41	36	34
7	60	47	39	33	58	47	39	33	45	38	33	44	37	33	42	37	32	30
8	56	43	35	30	54	42	35	29	41	34	29	40	34	29	39	33	29	27
9	52	40	32	27	51	39	32	27	38	31	26	37	31	26	36	30	26	24
10	49	37	29	24	48	36	29	24	35	28	24	34	28	24	33	28	24	22

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