

PHOTOMETRY FILES

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# SOFTFORM SERIES

— RECTANGULAR



PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL90615-GONIOPHOTOMETRY

PAGE

ISSUE DATE: 07/13/18

PREPARED FOR: SOFTFORM LIGHTING, LLC

ADDRESS: 4539 WELLINGTON ROAD  
BOULDER, CO 80301

CATALOG NUMBER: **SFR14** 9/16 HTW HO 40 MVOLT

LUMINAIRE: EXTRUDED WHITE PAINTED HOUSING, FABRICATED WHITE PAINTED METAL TOP/REFLECTOR, 5 WHITE CIRCUIT BOARDS EACH WITH 48 LEDS, WHITE FABRIC DIFFUSER.

LAMPS: TWO HUNDRED FORTY WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 46.2 WATTS, 0.386 AMPS

MOUNTING: RECESSED

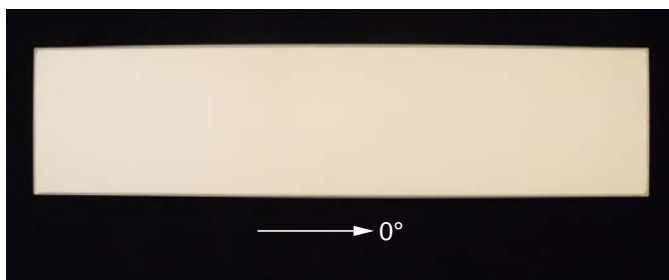
LED DRIVER: OSRAM OTi 48/120-277/2A0 DIM L, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES DRIVER PROGRAMMED FOR 1880mA OUTPUT.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.



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**PAGE:** 2 OF 6

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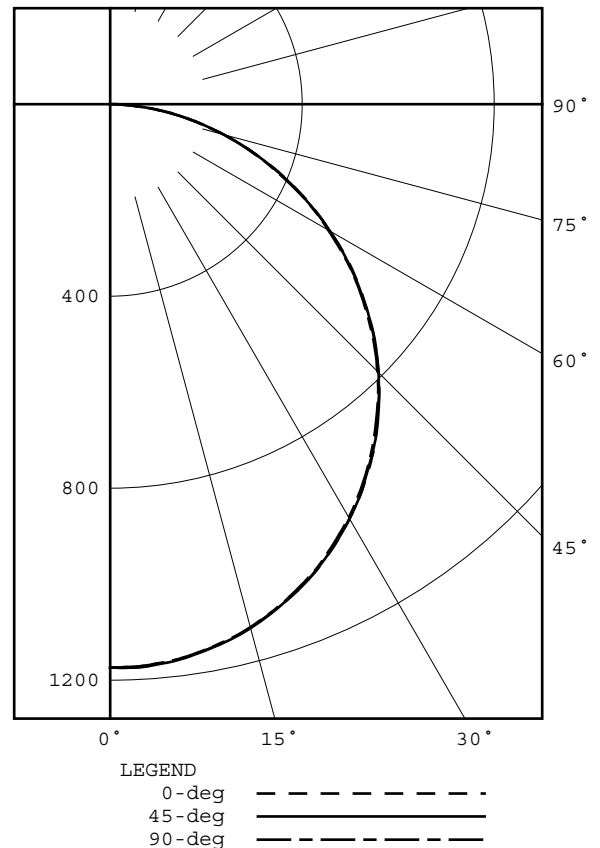
**CATALOG NUMBER:** SFR14 9/16 HTW HO 40 MVOLT

CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1174	1174	1174	1174	1174	
5	1169	1166	1171	1171	1169	111
15	1129	1126	1130	1130	1128	318
25	1051	1047	1050	1050	1048	483
35	936	932	934	934	932	584
45	791	788	790	788	787	608
55	622	620	620	618	618	553
65	436	435	434	433	432	429
75	245	246	245	244	244	259
85	69	70	70	70	70	79
90	0	0	0	0	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	913	26.6
0- 40	1497	43.7
0- 60	2659	77.6
0- 90	3426	100.0
90-180	0	0.0
0-180	3426	100.0

EFFICACY = 74.2 lm/W  
 CIE TYPE - DIRECT  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.26 1.26  
 BEAM ANGLE (50%) : 113.8 X 113.2 DEGREES  
 FIELD ANGLE (10%) : 164.4 X 164.3 DEGREES  
 LUMINOUS LENGTH : 47.250 11.250

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	3262.	3258.	3245.
55	3162.	3152.	3142.
65	3008.	2994.	2981.
75	2760.	2760.	2749.
85	2309.	2342.	2342.





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**PAGE:** 3 OF 6

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**CATALOG NUMBER:** SFR14 9/16 HTW HO 40 MVOLT

CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	1174	1174	1174	1174	1174
2.5	1173	1170	1175	1175	1173
5.0	1169	1166	1171	1171	1169
7.5	1164	1160	1165	1165	1163
10.0	1154	1151	1155	1155	1153
12.5	1143	1139	1144	1144	1142
15.0	1129	1126	1130	1130	1128
17.5	1112	1109	1113	1113	1111
20.0	1094	1090	1094	1094	1092
22.5	1074	1069	1074	1073	1071
25.0	1051	1047	1050	1050	1048
27.5	1025	1021	1025	1023	1021
30.0	997	993	997	996	994
32.5	968	965	968	967	964
35.0	936	932	934	934	932
37.5	903	899	902	901	898
40.0	865	864	867	863	862
42.5	829	828	829	827	826
45.0	791	788	790	788	787
47.5	750	749	751	748	747
50.0	708	707	709	706	704
52.5	665	664	664	662	661
55.0	622	620	620	618	618
57.5	577	573	575	573	571
60.0	528	528	529	527	525
62.5	483	481	481	479	480
65.0	436	435	434	433	432
67.5	388	386	387	385	383
70.0	340	339	339	339	337
72.5	293	292	291	290	291
75.0	245	246	245	244	244
77.5	200	199	199	198	197
80.0	156	154	154	155	154
82.5	112	111	110	111	112
85.0	69	70	70	70	70
87.5	30	31	32	32	32
90.0	0	0	0	0	0



INDEPENDENT TESTING LABORATORIES, INC.  
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

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PAGE: 4 OF 6

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CATALOG NUMBER: SFR14 9/16 HTW HO 40 MVOLT

5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	28
5- 10	83
10- 15	135
15- 20	183
20- 25	225
25- 30	259
30- 35	284
35- 40	300
40- 45	306
45- 50	302
50- 55	288
55- 60	265
60- 65	234
65- 70	195
70- 75	152
75- 80	107
80- 85	61
85- 90	18

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	111
0- 20	430
0- 30	913
0- 40	1497
0- 50	2106
0- 60	2659
0- 70	3088
0- 80	3347
0- 90	3426



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**CATALOG NUMBER:** **SFR14** 9/16 HTW HO 40 MVOLT

**PAGE:** 5 OF 6

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC RW	80				70				50			30			10			0			
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
0	119	119	119	119	116	116	116	116	111	111	111	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	89	87	85	83
2	98	90	83	77	96	88	82	76	84	79	74	81	77	73	78	74	71	78	74	71	69
3	90	79	70	64	87	77	69	63	74	68	62	71	66	61	69	64	60	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	61	56	51	49
5	75	62	53	46	73	61	52	46	59	51	46	57	50	45	55	49	45	55	49	45	42
6	69	56	47	40	68	55	46	40	53	45	40	51	45	39	50	44	39	50	44	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	45	39	35	33
8	60	46	38	32	58	46	37	32	44	37	31	43	36	31	42	36	31	42	36	31	29
9	56	42	34	28	55	42	34	28	41	33	28	40	33	28	39	32	28	39	32	28	26
10	52	39	31	26	51	39	31	26	38	31	26	37	30	25	36	30	25	36	30	25	24

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.

**REPORT NUMBER:** ITL90615-GONIOPHOTOMETRY

**PAGE:** 6 OF 6

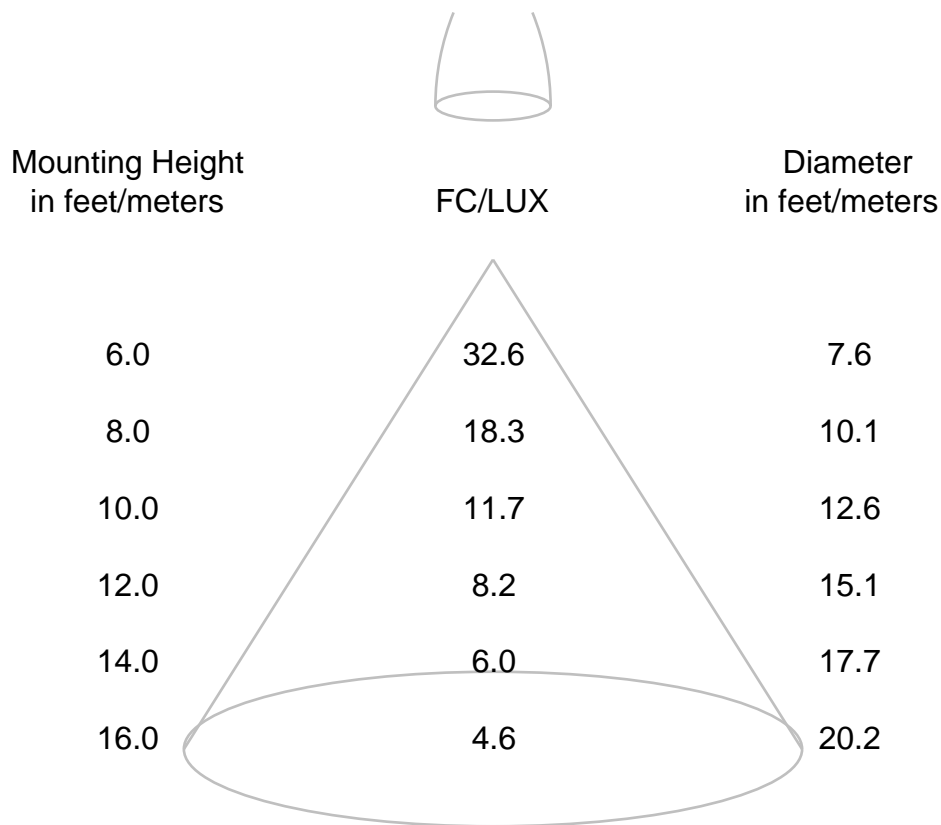
**ISSUE DATE:** 07/13/18

**PREPARED FOR:** SOFTFORM LIGHTING, LLC

**CATALOG NUMBER:** SFR14 9/16 HTW HO 40 MVOLT

## CONE OF LIGHT DIAGRAM

(diameter shown is where fc/lux value is half the fc/lux at nadir)



If distances are feet, results are footcandles.

If distances are meters, results are lux.

Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.

**REPORT NUMBER:** ITL90616-GONIOPHOTOMETRY

**PAGE**

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**PREPARED FOR:** SOFTFORM LIGHTING, LLC

**ADDRESS:** 4539 WELLINGTON ROAD  
BOULDER, CO 80301

**CATALOG NUMBER:** **SFR24** 9/16 HTW HO 40 MVOLT

**LUMINAIRE:** EXTRUDED WHITE PAINTED HOUSING, FABRICATED WHITE PAINTED METAL TOP/REFLECTOR, 12 WHITE CIRCUIT BOARDS EACH WITH 48 LEDS, WHITE FABRIC DIFFUSER.

**LAMPS:** FIVE HUNDRED SEVENTY-SIX WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.

**INPUT ELECTRICAL:** 120.0 VOLTS, 74.4 WATTS, 0.623 AMPS

**MOUNTING:** RECESSED

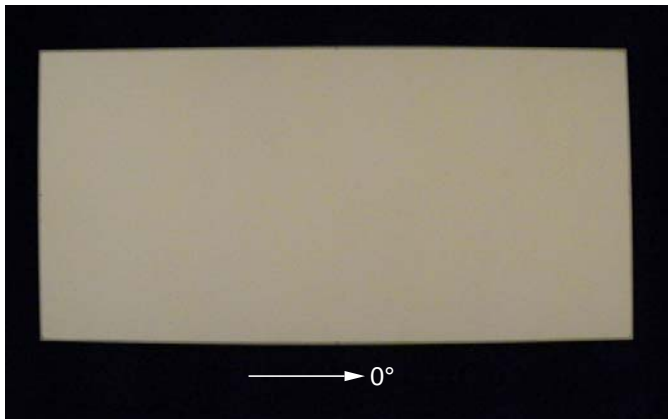
**LED DRIVER:** OSRAM OTi 85/120-277/2A3 DIM L, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES DRIVER PROGRAMMED FOR 1500mA OUTPUT.

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.



Approved     *C STOUT*



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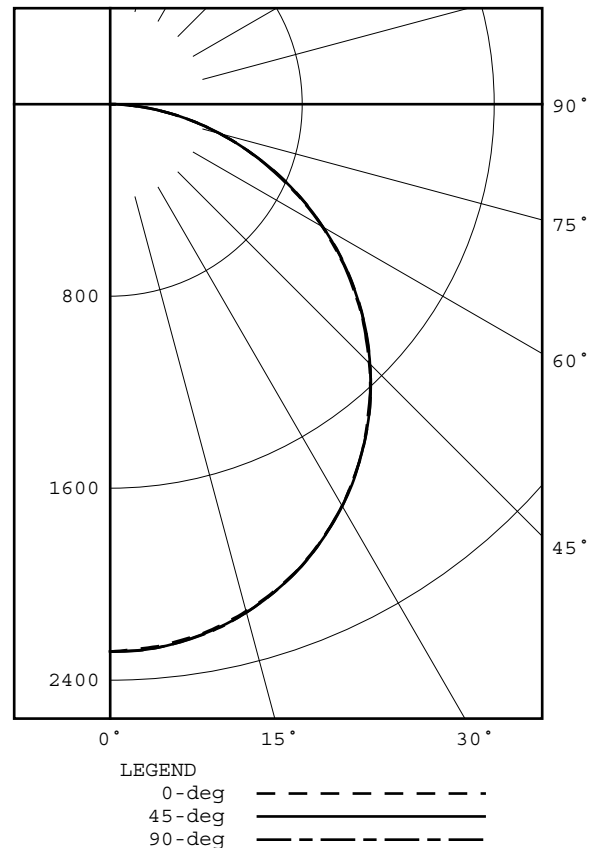
**CATALOG NUMBER:** **SFR24** 9/16 HTW HO 40 MVOLT

CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	2281	2281	2281	2281	2281	
5	2267	2271	2273	2272	2273	216
15	2187	2192	2192	2192	2192	618
25	2034	2038	2037	2036	2037	939
35	1813	1816	1812	1813	1812	1134
45	1531	1534	1531	1530	1526	1181
55	1204	1203	1203	1200	1198	1074
65	845	843	840	840	835	832
75	475	475	472	473	470	501
85	135	135	132	134	131	151
90	0	0	0	0	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	1773	26.7
0- 40	2907	43.7
0- 60	5162	77.7
0- 90	6646	100.0
90-180	0	0.0
0-180	6646	100.0

EFFICACY = 89.3 lm/W  
 CIE TYPE - DIRECT  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.26 1.26  
 BEAM ANGLE (50%) : 113.7 X 113.2 DEGREES  
 FIELD ANGLE (10%) : 164.1 X 164.1 DEGREES  
 LUMINOUS LENGTH : 47.250 23.250

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	3055.	3055.	3045.
55	2962.	2959.	2947.
65	2821.	2804.	2788.
75	2589.	2573.	2562.
85	2185.	2137.	2121.





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**PAGE:** 3 OF 6

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**CATALOG NUMBER:** SFR24 9/16 HTW HO 40 MVOLT

CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	2281	2281	2281	2281	2281
2.5	2273	2278	2279	2279	2280
5.0	2267	2271	2273	2272	2273
7.5	2253	2258	2259	2259	2260
10.0	2237	2241	2241	2242	2243
12.5	2214	2219	2219	2219	2221
15.0	2187	2192	2192	2192	2192
17.5	2156	2160	2160	2160	2160
20.0	2120	2124	2123	2123	2124
22.5	2081	2083	2083	2083	2084
25.0	2034	2038	2037	2036	2037
27.5	1986	1989	1987	1986	1985
30.0	1934	1935	1933	1932	1932
32.5	1873	1878	1877	1874	1873
35.0	1813	1816	1812	1813	1812
37.5	1748	1752	1748	1747	1745
40.0	1680	1683	1679	1676	1674
42.5	1607	1609	1607	1605	1604
45.0	1531	1534	1531	1530	1526
47.5	1452	1458	1455	1451	1446
50.0	1374	1377	1371	1370	1367
52.5	1291	1292	1288	1284	1282
55.0	1204	1203	1203	1200	1198
57.5	1118	1117	1114	1112	1108
60.0	1023	1028	1024	1020	1020
62.5	935	936	934	930	928
65.0	845	843	840	840	835
67.5	750	751	749	747	741
70.0	654	658	656	655	652
72.5	564	568	565	564	563
75.0	475	475	472	473	470
77.5	384	383	385	383	383
80.0	296	299	298	298	298
82.5	213	215	214	214	212
85.0	135	135	132	134	131
87.5	62	61	60	60	59
90.0	0	0	0	0	0



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PAGE: 4 OF 6

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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	54
5- 10	161
10- 15	263
15- 20	356
20- 25	436
25- 30	502
30- 35	552
35- 40	583
40- 45	594
45- 50	587
50- 55	559
55- 60	514
60- 65	453
65- 70	379
70- 75	295
75- 80	206
80- 85	117
85- 90	35

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	216
0- 20	834
0- 30	1773
0- 40	2907
0- 50	4088
0- 60	5162
0- 70	5994
0- 80	6495
0- 90	6646



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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	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	94	97	94	91	93	90	88	89	87	85	83	83
2	98	90	83	77	96	88	82	76	84	79	74	81	77	73	78	74	71	69	69
3	90	79	70	64	87	77	69	63	74	68	62	71	66	61	69	64	60	58	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49	49
5	75	62	53	46	73	61	52	46	59	51	46	57	50	45	55	49	45	42	42
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	37	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33	33
8	60	46	38	32	58	46	37	32	44	37	31	43	36	31	42	36	31	29	29
9	56	42	34	29	55	42	34	28	41	33	28	40	33	28	39	32	28	26	26
10	52	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24	24

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.

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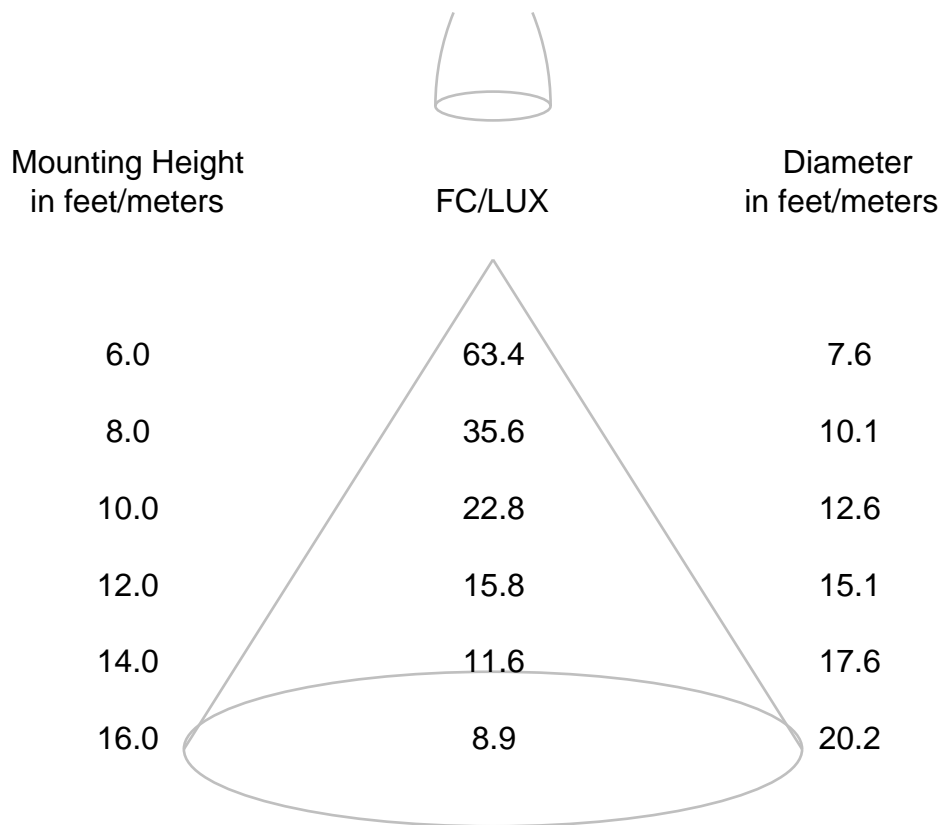
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## CONE OF LIGHT DIAGRAM

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If distances are feet, results are footcandles.  
If distances are meters, results are lux.

Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.