

**itl boulder**  
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

**NVLAP**  
NVLAP LAB CODE: 200925-0

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

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

REPORT NUMBER: ITL88310-GONIOPHOTOMETRY

PAGE: 1 OF 7

ISSUE DATE: 09/23/16

PREPARED FOR: B-K LIGHTING, INC.

CATALOG NUMBER: MA-LED-x51/x51-WFL/WFL-12-C

LUMINAIRE: MACHINED BLACK PAINTED METAL WALL MOUNTING BRACKET AND HOUSING WITH 2 DISTINCT OPTICAL COMPARTMENTS, EACH OPTICAL COMPARTMENT CONSISTS OF: DIFFUSE METAL CIRCUIT BOARD MOUNTING BASE, 1 CIRCUIT BOARD WITH 1 LED, MOLDED WHITE PLASTIC LED SURROUND/REFLECTOR MOUNTING BASE, MOLDED MULTI-FACETED TIERED WHITE PLASTIC REFLECTOR WITH TEXTURED SEMI-SPECULAR FINISH, CLEAR MICRO-PRISMATIC FLAT GLASS LENS IN MACHINED BLACK PAINTED CYLINDRICAL METAL FRAME WITH UNFINISHED INTERIOR. LENS PRISMS OUT.

LAMPS: TWO WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), 1 VERTICAL BASE-UP POSITION, 1 VERTICAL BASE-DOWN POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 114.8 WATTS, 0.962 AMPS

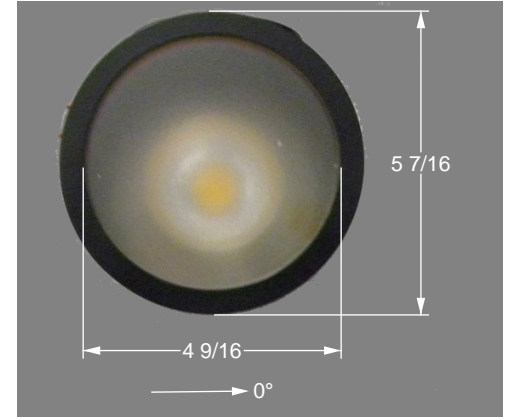
MOUNTING: WALL

LED DRIVERS: TWO THOMAS RESEARCH PRODUCTS PLED75W-054-C1400-D, DRIVERS HAVE MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST.

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

TEST PROCEDURE: IESNA LM-79-08

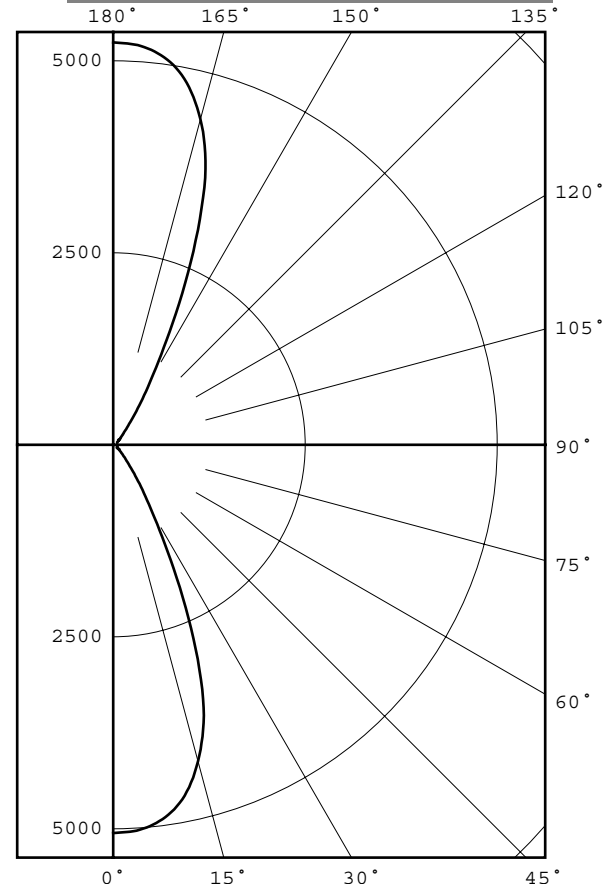
TEST DISTANCE = 20.0 FEET



DEG	CANDELA	LUMENS
0	5055	
5	5001	470
15	4266	1171
25	2050	945
35	534	353
45	159	130
55	71	65
65	32	32
75	14	15
85	3	3
90	0	
95	3	4
105	15	16
115	32	33
125	72	66
135	152	124
145	494	332
155	2027	938
165	4389	1201
175	5180	487
180	5239	

ZONAL LUMEN SUMMARY	
ZONE	LUMENS
0- 30	2587
0- 40	2940
0- 60	3135
0- 90	3186
90-120	53
90-130	118
90-150	574
90-180	3201
0-180	6386
%FIXT	
0- 30	40.5
0- 40	46.0
0- 60	49.1
0- 90	49.9
90-120	0.8
90-130	1.9
90-150	9.0
90-180	50.1
0-180	100.0

EFFICACY = 55.6 lm/W  
CIE TYPE - GENERAL DIFFUSE  
LUMINAIRE SPACING CRITERION = 0.70  
BEAM ANGLE (50%) : 45.8 DEGREES  
FIELD ANGLE (10%) : 69.3 DEGREES



Checked J. VILLANUEVA  
Approved R. BEATTIE  
Lighting Engineer



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LUMINOUS DIAMETER: 4.562

LUMINANCE DATA IN CANDELA/SQ M  
ANGLE AVERAGE  
IN DEG

45	21318.
55	11736.
65	7179.
75	5128.
85	3263.



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#### CANDELA DISTRIBUTION

0.0	5055
5.0	5001
10.0	4779
15.0	4266
20.0	3389
25.0	2050
30.0	1031
35.0	534
40.0	272
45.0	159
50.0	104
55.0	71
60.0	47
65.0	32
70.0	22
75.0	14
80.0	8
85.0	3
90.0	0
95.0	3
100.0	9
105.0	15
110.0	23
115.0	32
120.0	48
125.0	72
130.0	105
135.0	152
140.0	250
145.0	494
150.0	1003
155.0	2027
160.0	3424
165.0	4389
170.0	4937
175.0	5180
180.0	5239



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	120
5- 10	350
10- 15	538
15- 20	634
20- 25	568
25- 30	377
30- 35	224
35- 40	130
40- 45	78
45- 50	52
50- 55	38
55- 60	27
60- 65	19
65- 70	13
70- 75	9
75- 80	6
80- 85	3
85- 90	0
90- 95	1
95-100	3
100-105	6
105-110	10
110-115	14
115-120	19
120-125	27
125-130	38
130-135	51
135-140	72
140-145	119
145-150	213
150-155	370
155-160	568
160-165	647
165-170	554
170-175	362
175-180	125

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	470
0- 20	1642
0- 30	2587
0- 40	2940
0- 50	3070
0- 60	3135
0- 70	3167
0- 80	3182
0- 90	3186
0-100	3189
0-110	3205
0-120	3238
0-130	3304
0-140	3428
0-150	3760
0-160	4698
0-170	5900
0-180	6386



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	100	97	94	91	93	90	87	85	77	75	73	64	63	62	53	53	52	47
2	94	88	83	79	87	82	78	75	71	68	65	60	58	57	50	49	48	44
3	88	80	75	70	81	75	70	66	65	62	59	56	54	52	48	46	45	41
4	82	74	67	63	76	69	64	60	61	57	54	53	50	48	45	44	42	39
5	77	68	61	57	72	64	58	54	56	52	49	50	47	44	43	41	40	37
6	73	63	56	52	68	59	54	50	53	49	45	47	44	41	41	39	37	35
7	68	59	52	48	64	55	50	46	50	45	42	44	41	39	39	37	35	33
8	65	55	48	44	61	52	46	42	47	42	39	42	39	36	37	35	33	31
9	61	51	45	41	57	49	43	40	44	40	37	40	36	34	35	33	32	30
10	58	48	42	38	55	46	41	37	42	38	35	38	35	32	34	32	30	28

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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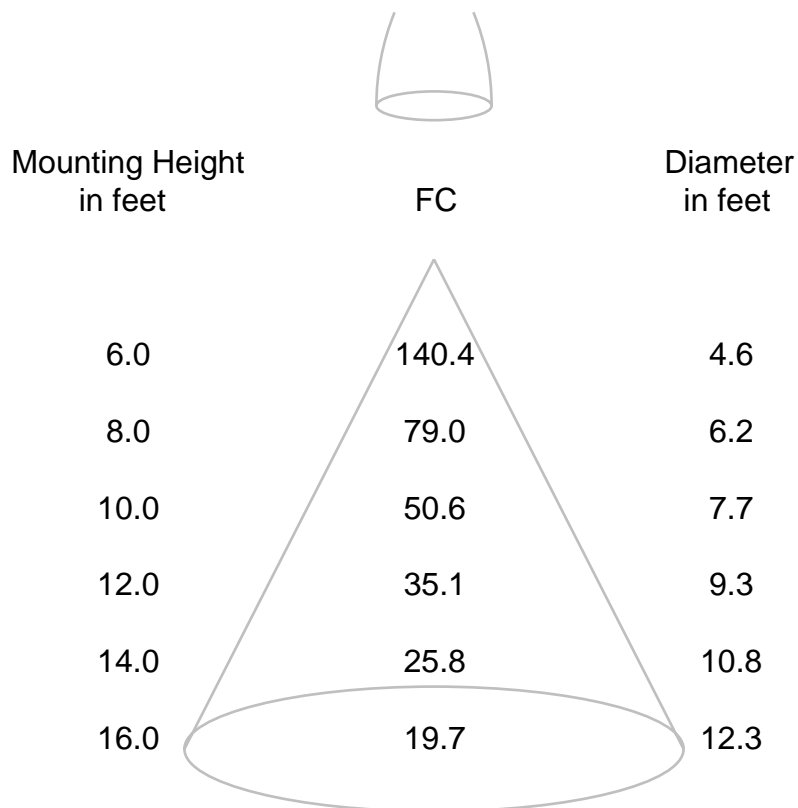
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## CONE OF LIGHT DIAGRAM

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





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