

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

REPORT NUMBER: ITL87587-GONIOPHOTOMETRY

PAGE: 1 OF 9

ISSUE DATE: 06/16/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FSLEDV3NW/120 - FSLEDV3NW/120/TL

LUMINAIRE: CAST WHITE PAINTED METAL HOUSING/FACEPLATE, CAST WHITE PAINTED METAL CIRCUIT BOARD MOUNTING BASE WITH UNFINISHED CIRCUIT BOARD MOUNTING SURFACE, 1 WHITE CIRCUIT BOARD WITH 3 LEDS, CLEAR FLAT GLASS LENS.

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

INPUT ELECTRICAL: 120.0 VOLTS, 3.05 WATTS, 0.0268 AMPS

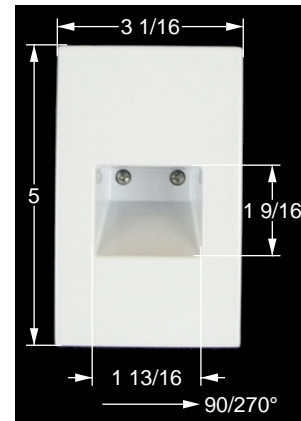
MOUNTING: RECESSED WALL

LED DRIVER: INTEGRAL TO CIRCUIT BOARD

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

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 20.0 FEET



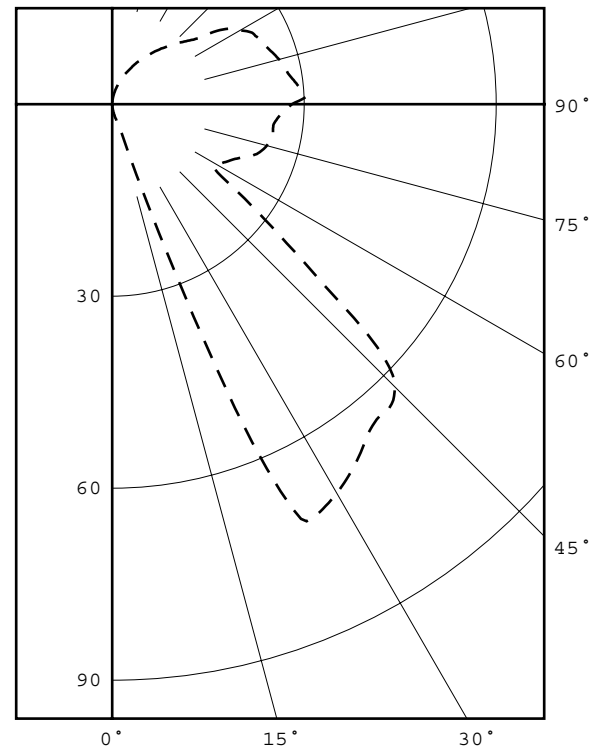
CANDELA DISTRIBUTION

FLUX

	0.0	45.0	90.0	135.0	180.0	
0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.6	0.3	0.0	0.0	0.0	0.0
15	2.6	1.6	0.0	0.0	0.0	0.3
25	71.9	4.0	0.0	0.0	0.0	5.9
35	67.2	50.8	0.0	0.0	0.0	11.9
45	62.5	45.5	0.0	0.0	0.0	13.6
55	24.1	38.0	0.0	0.0	0.0	9.7
65	20.6	15.4	0.0	0.0	0.0	6.7
75	25.0	14.7	0.0	0.0	0.0	7.5
85	25.9	15.9	0.0	0.0	0.0	8.2
90	28.1	16.1	0.0	0.0	0.0	
95	29.4	15.9	0.0	0.0	0.0	8.5
105	27.0	15.0	0.0	0.0	0.0	7.6
115	24.9	12.9	0.0	0.0	0.0	6.4
125	20.0	10.3	0.0	0.0	0.0	4.6
135	13.1	7.8	0.0	0.0	0.0	2.9
145	9.1	5.5	0.0	0.0	0.0	1.6
155	5.6	3.5	0.0	0.0	0.0	0.8
165	2.8	1.8	0.0	0.0	0.0	0.3
175	0.7	0.5	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0	

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	6.3	6.5
0- 40	18.2	18.8
0- 60	41.4	42.9
0- 90	63.8	66.1
90-120	22.5	23.4
90-130	27.1	28.1
90-150	31.6	32.8
90-180	32.6	33.9
0-180	96.4	100.0



LEGEND:
0-deg - - - - -
90-deg = = = = =
180-deg - - - - -

EFFICACY = 31.6 lm/W
CIE TYPE - SEMI-DIRECT
PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 30.3 X N/A DEGREES
FIELD ANGLE (10%) : 132.2 X N/A DEGREES

Checked B. HYRE
Approved R. BEATTIE
Lighting Engineer



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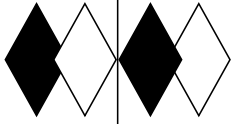
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LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	48438.	50375.	0.
55	16241.	36813.	0.
65	12281.	13261.	0.
75	14352.	11992.	0.
85	14338.	12323.	0.



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CANDELA DISTRIBUTION
 LATERAL ANGLE

	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0	112.5	135.0	157.5
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	0.6	0.6	0.5	0.5	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
7.5	1.0	1.0	1.0	0.9	0.8	0.6	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0
10.0	1.5	1.5	1.4	1.4	1.2	1.0	0.7	0.4	0.2	0.0	0.0	0.0	0.0	0.0
12.5	2.0	2.0	1.9	1.8	1.5	1.3	1.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0
15.0	2.6	2.6	2.5	2.3	2.0	1.6	1.2	0.8	0.4	0.1	0.0	0.0	0.0	0.0
17.5	3.6	3.6	3.4	3.0	2.4	2.0	1.6	1.0	0.4	0.1	0.0	0.0	0.0	0.0
20.0	21.6	19.5	10.0	4.4	3.2	2.4	1.8	1.2	0.6	0.1	0.0	0.0	0.0	0.0
22.5	57.2	55.7	49.8	36.5	5.9	3.1	2.2	1.4	0.7	0.1	0.0	0.0	0.0	0.0
25.0	71.9	72.1	70.4	62.1	39.5	4.0	2.5	1.7	0.9	0.1	0.0	0.0	0.0	0.0
27.5	71.3	71.5	71.1	70.6	63.7	16.8	3.0	1.9	1.0	0.1	0.0	0.0	0.0	0.0
30.0	70.2	70.4	70.1	69.8	71.6	33.7	3.7	2.1	1.1	0.2	0.0	0.0	0.0	0.0
32.5	68.8	69.0	68.6	68.6	70.2	49.4	12.4	2.4	1.2	0.2	0.0	0.0	0.0	0.0
35.0	67.2	67.4	67.0	67.1	68.7	50.8	23.2	2.7	1.4	0.2	0.0	0.0	0.0	0.0
37.5	65.4	65.6	65.3	65.4	67.0	50.6	25.0	3.0	1.5	0.3	0.0	0.0	0.0	0.0
40.0	64.3	64.3	63.5	63.5	64.9	49.0	25.7	3.3	1.6	0.3	0.0	0.0	0.0	0.0
42.5	64.2	64.2	62.9	61.9	62.7	47.3	26.1	3.7	1.8	0.3	0.0	0.0	0.0	0.0
45.0	62.5	62.5	62.3	61.2	60.5	45.5	25.3	4.2	1.9	0.4	0.0	0.0	0.0	0.0
47.5	56.2	56.5	58.0	59.5	58.5	43.6	24.6	4.8	2.1	0.4	0.0	0.0	0.0	0.0
50.0	41.1	41.5	46.6	54.2	56.2	41.8	23.7	5.9	2.3	0.4	0.0	0.0	0.0	0.0
52.5	31.3	31.4	33.1	40.6	51.6	40.1	23.2	6.5	2.5	0.5	0.0	0.0	0.0	0.0
55.0	24.1	24.3	26.8	30.0	39.4	38.0	22.6	6.8	2.7	0.5	0.0	0.0	0.0	0.0
57.5	19.1	19.1	19.8	23.4	27.6	34.1	21.8	6.9	2.9	0.5	0.0	0.0	0.0	0.0
60.0	18.8	18.7	18.5	18.4	22.0	26.9	20.9	7.1	3.0	0.6	0.0	0.0	0.0	0.0
62.5	19.7	19.5	19.2	18.1	16.3	21.9	19.1	7.3	3.2	0.6	0.0	0.0	0.0	0.0
65.0	20.6	20.5	20.1	18.8	15.9	15.4	14.8	7.5	3.3	0.6	0.0	0.0	0.0	0.0
67.5	21.8	21.6	21.0	19.5	16.6	13.4	11.7	7.7	3.5	0.7	0.0	0.0	0.0	0.0
70.0	23.4	23.2	22.5	20.6	17.2	13.8	11.4	7.8	3.6	0.7	0.0	0.0	0.0	0.0
72.5	24.4	24.2	23.4	21.4	17.9	14.3	11.7	7.9	3.7	0.7	0.0	0.0	0.0	0.0
75.0	25.0	24.8	24.0	21.9	18.4	14.7	11.9	7.9	3.7	0.7	0.0	0.0	0.0	0.0
77.5	25.4	25.3	24.4	22.3	18.8	15.1	12.1	7.9	3.8	0.8	0.0	0.0	0.0	0.0
80.0	25.5	25.4	24.6	22.5	19.1	15.4	12.2	8.0	3.9	0.8	0.0	0.0	0.0	0.0
82.5	25.4	25.3	24.6	22.5	19.3	15.6	12.3	8.0	4.0	0.8	0.0	0.0	0.0	0.0
85.0	25.9	25.7	25.1	23.0	19.7	15.9	12.4	8.1	4.0	0.8	0.0	0.0	0.0	0.0
87.5	26.7	26.6	25.9	23.5	20.2	16.2	12.6	8.1	4.0	0.8	0.0	0.0	0.0	0.0
90.0	28.1	27.9	27.3	23.8	20.0	16.1	12.4	8.0	4.0	0.9	0.0	0.0	0.0	0.0
92.5	30.2	29.8	28.5	24.5	19.6	15.9	12.2	7.9	4.0	0.8	0.0	0.0	0.0	0.0
95.0	29.4	29.2	28.0	23.9	19.4	15.9	12.2	7.9	3.9	0.8	0.0	0.0	0.0	0.0
97.5	28.6	28.4	27.5	23.3	19.2	15.8	12.0	7.7	3.9	0.8	0.0	0.0	0.0	0.0
100.0	27.9	27.8	26.6	22.9	18.9	15.7	11.7	7.5	3.8	0.8	0.0	0.0	0.0	0.0
102.5	27.6	27.6	26.5	22.4	18.6	15.4	11.4	7.3	3.7	0.8	0.0	0.0	0.0	0.0
105.0	27.0	27.0	25.8	22.0	18.2	15.0	11.0	7.0	3.5	0.8	0.0	0.0	0.0	0.0
107.5	26.4	26.4	25.4	21.5	17.8	14.6	10.6	6.8	3.4	0.8	0.0	0.0	0.0	0.0
110.0	25.8	25.8	24.7	21.1	17.3	14.2	10.2	6.5	3.3	0.7	0.0	0.0	0.0	0.0
112.5	25.6	25.3	24.3	20.6	16.9	13.6	9.7	6.2	3.2	0.7	0.0	0.0	0.0	0.0
115.0	24.9	24.8	23.8	20.1	16.3	12.9	9.3	5.9	3.0	0.6	0.0	0.0	0.0	0.0
117.5	24.4	24.3	23.1	19.2	15.4	12.2	8.8	5.7	2.9	0.6	0.0	0.0	0.0	0.0
120.0	23.1	23.0	22.0	18.2	14.5	11.6	8.4	5.4	2.8	0.6	0.0	0.0	0.0	0.0
122.5	21.9	21.8	20.5	16.9	13.6	10.9	8.0	5.1	2.6	0.6	0.0	0.0	0.0	0.0
125.0	20.0	19.7	18.2	15.1	12.8	10.3	7.5	4.9	2.5	0.5	0.0	0.0	0.0	0.0
127.5	16.9	16.7	15.6	14.0	12.0	9.6	7.1	4.6	2.3	0.5	0.0	0.0	0.0	0.0
130.0	15.4	15.3	14.5	13.1	11.2	9.0	6.6	4.3	2.2	0.5	0.0	0.0	0.0	0.0
132.5	14.2	14.1	13.4	12.2	10.4	8.4	6.2	4.1	2.1	0.4	0.0	0.0	0.0	0.0
135.0	13.1	13.0	12.4	11.2	9.7	7.8	5.8	3.8	2.0	0.4	0.0	0.0	0.0	0.0
137.5	12.0	12.0	11.4	10.3	8.9	7.2	5.4	3.5	1.8	0.4	0.0	0.0	0.0	0.0
140.0	11.0	11.0	10.4	9.5	8.2	6.6	4.9	3.3	1.7	0.4	0.0	0.0	0.0	0.0
142.5	10.0	10.0	9.5	8.6	7.5	6.1	4.5	3.0	1.6	0.3	0.0	0.0	0.0	0.0
145.0	9.1	9.0	8.6	7.8	6.8	5.5	4.2	2.8	1.4	0.3	0.0	0.0	0.0	0.0
147.5	8.2	8.1	7.8	7.1	6.1	5.0	3.8	2.5	1.3	0.3	0.0	0.0	0.0	0.0
150.0	7.3	7.2	6.9	6.3	5.5	4.5	3.4	2.3	1.2	0.3	0.0	0.0	0.0	0.0
152.5	6.4	6.4	6.1	5.6	4.9	4.0	3.0	2.0	1.1	0.2	0.0	0.0	0.0	0.0
155.0	5.6	5.6	5.4	4.9	4.3	3.5	2.7	1.8	1.0	0.2	0.0	0.0	0.0	0.0
157.5	4.9	4.9	4.7	4.3	3.7	3.1	2.3	1.6	0.8	0.2	0.0	0.0	0.0	0.0



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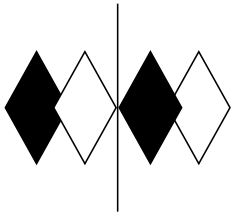
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CANDELA DISTRIBUTION
 LATERAL ANGLE

	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0	112.5	135.0	157.5
160.0	4.2	4.1	4.0	3.7	3.2	2.7	2.0	1.4	0.7	0.2	0.0	0.0	0.0	0.0
162.5	3.5	3.5	3.3	3.1	2.7	2.2	1.7	1.2	0.6	0.1	0.0	0.0	0.0	0.0
165.0	2.8	2.8	2.7	2.5	2.2	1.8	1.4	1.0	0.5	0.1	0.0	0.0	0.0	0.0
167.5	2.3	2.2	2.2	2.0	1.8	1.5	1.1	0.8	0.4	0.1	0.0	0.0	0.0	0.0
170.0	1.7	1.7	1.6	1.5	1.3	1.1	0.9	0.6	0.3	0.1	0.0	0.0	0.0	0.0
172.5	1.2	1.2	1.1	1.1	0.9	0.8	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0
175.0	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.2	0.2	0.1	0.0	0.0	0.0	0.0
177.5	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
180.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION
 LATERAL ANGLE

	180.0
0.0	0.0
2.5	0.0
5.0	0.0
7.5	0.0
10.0	0.0
12.5	0.0
15.0	0.0
17.5	0.0
20.0	0.0
22.5	0.0
25.0	0.0
27.5	0.0
30.0	0.0
32.5	0.0
35.0	0.0
37.5	0.0
40.0	0.0
42.5	0.0
45.0	0.0
47.5	0.0
50.0	0.0
52.5	0.0
55.0	0.0
57.5	0.0
60.0	0.0
62.5	0.0
65.0	0.0
67.5	0.0
70.0	0.0
72.5	0.0
75.0	0.0
77.5	0.0
80.0	0.0
82.5	0.0
85.0	0.0
87.5	0.0
90.0	0.0
92.5	0.0
95.0	0.0
97.5	0.0
100.0	0.0
102.5	0.0
105.0	0.0
107.5	0.0
110.0	0.0
112.5	0.0
115.0	0.0
117.5	0.0
120.0	0.0
122.5	0.0
125.0	0.0
127.5	0.0
130.0	0.0
132.5	0.0
135.0	0.0
137.5	0.0
140.0	0.0
142.5	0.0
145.0	0.0
147.5	0.0
150.0	0.0
152.5	0.0
155.0	0.0
157.5	0.0



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CANDELA DISTRIBUTION
LATERAL ANGLE

	180.0
160.0	0.0
162.5	0.0
165.0	0.0
167.5	0.0
170.0	0.0
172.5	0.0
175.0	0.0
177.5	0.0
180.0	0.0



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5-DEGREE
 ZONAL LUMEN SUMMARY

0- 5	0.0
5- 10	0.0
10- 15	0.1
15- 20	0.2
20- 25	1.8
25- 30	4.1
30- 35	5.5
35- 40	6.4
40- 45	6.8
45- 50	6.8
50- 55	5.6
55- 60	4.1
60- 65	3.4
65- 70	3.3
70- 75	3.6
75- 80	3.9
80- 85	4.0
85- 90	4.2
90- 95	4.3
95-100	4.2
100-105	4.0
105-110	3.7
110-115	3.4
115-120	3.0
120-125	2.6
125-130	2.0
130-135	1.6
135-140	1.3
140-145	0.9
145-150	0.7
150-155	0.5
155-160	0.3
160-165	0.2
165-170	0.1
170-175	0.0
175-180	0.0

10-DEGREE
 ZONAL LUMEN SUMMARY

0- 10	0.0
0- 20	0.3
0- 30	6.3
0- 40	18.2
0- 50	31.7
0- 60	41.4
0- 70	48.1
0- 80	55.6
0- 90	63.8
0-100	72.3
0-110	79.9
0-120	86.3
0-130	90.9
0-140	93.7
0-150	95.4
0-160	96.1
0-170	96.4
0-180	96.4



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REPORT NUMBER: ITL87587-GONIOPHOTOMETRY

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ISSUE DATE: 06/16/16

PREPARED FOR: RAB LIGHTING INC.

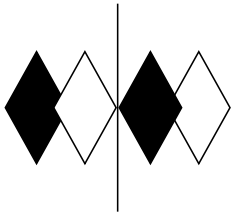
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	11	11	11	11	11	11	11	11	11	10	41	10	41	10	41	10	41	10	41	92	92	92	81	81	81	71	71	71	66
1	98	92	86	81	91	86	81	77	75	72	68	66	63	60	57	55	53	48	48										
2	88	78	70	64	82	73	66	60	64	59	54	56	51	48	48	45	42	38	38										
3	79	67	59	51	74	63	55	49	55	49	44	48	43	39	41	37	34	30	30										
4	72	59	49	42	67	55	47	40	48	41	36	42	36	32	36	32	28	24	24										
5	65	52	42	35	61	49	40	33	43	35	30	37	31	27	32	27	23	20	20										
6	60	46	36	30	55	43	34	28	38	31	25	33	27	22	28	23	20	17	17										
7	55	41	32	25	51	38	30	24	34	27	22	29	23	19	25	20	17	14	14										
8	50	36	28	22	47	34	26	21	30	23	18	26	21	16	23	18	14	12	12										
9	47	33	24	19	43	31	23	18	27	21	16	24	18	14	21	16	12	10	10										
10	43	30	22	16	40	28	21	15	25	18	14	22	16	12	19	14	11	9	9										

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.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.



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PAGE: 9 OF 9

ADDRESS: 170 LUDLOW AVE.
NORTHVALE, NJ 07647

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REPORT NUMBER: ITL87587-SPHERE
DATE: 06/21/16
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FSLEDV3NW/120 - FSLEDV3NW/120/TL

ADDRESS: 170 LUDLOW AVE.
NORTHVALE, NJ 07647

LUMINAIRE: CAST WHITE PAINTED METAL HOUSING/FACEPLATE, CAST WHITE PAINTED METAL
CIRCUIT BOARD MOUNTING BASE WITH UNFINISHED CIRCUIT BOARD MOUNTING
SURFACE, 1 WHITE CIRCUIT BOARD WITH 3 LEDS, CLEAR FLAT GLASS LENS.

LAMP: THREE WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), VERTICAL
BASE-UP POSITION.

DRIVER: INTEGRAL TO CIRCUIT BOARD

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

Calibration Due:

INSTRUMENTS: Associated Power Technologies APT5020 AC Power Source N/A
Yokogawa WT210 Digital Power Meter #4 04/07/17
Ocean Optics QE65000 Spectroradiometer 04/19/17
ITL 1.5m Diameter Integrating Sphere S15-2, 4PI Geometry 04/19/17

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Spectral Power Distribution (SPD),
Correlated Color Temperature (CCT), Color Rendering Index (CRIa,1-14),
Chromaticity Coordinates (x,y; u',v'), ANSI C78.377 Duv, Total Radiant
Flux*, Scotopic / Photopic Lumen Ratio, and electrical data including
ANSI C82.77-2002 Power Factor (PF) and Total Harmonic Distortion (THD)
to the test sample.

PROCEDURE: The test sample was provided by the customer and had an unknown number
of operating hours. The test sample was mounted inside the integrating
sphere and allowed to stabilize. After stabilization occurred,
measurements were taken. In order to measure mean performance, multiple
data sets were recorded and averaged. Readings were taken with the test
sample operating at 120VAC input in a 25 +/-1 degree Celsius free
air ambient and in accordance with IESNA LM-79-08. All data are traceable
to the National Institute of Standards and Technology.

RESULTS: (continued subsequent pages)

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FEDERAL GOVERNMENT.

Checked N WHITE
Approved P O'CONNOR
Sphere Lab Supervisor



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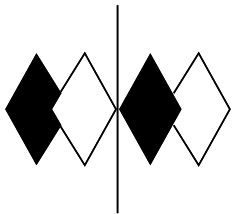
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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	96.4 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3681
Chromaticity Ordinate y	0.3728
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2185
Chromaticity Ordinate v'	0.4980
Correlated Color Temp CCT (K)	4326
ANSI C78.377-2008 Duv	0.002
Total Radiant Flux (milliWatts)	294 *
Scotopic / Photopic Lumen Ratio	1.799
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.027
Input Power (Watts)	3.06
Input Power Factor (%)	94.4
Input Current THD (%)	31.4
Input Voltage THD (%)	0.3
EFFICACY (lumens/Watt)	31.5

COLOR RENDERING INDICES		CRI
Ra (Average 1-8)		82
R1	Light greyish red	79
R2	Dark greyish yellow	87
R3	Strong yellowish green	93
R4	Moderate yellowish green	82
R5	Light bluish green	80
R6	Light blue	83
R7	Light violet	87
R8	Light reddish purple	65
R9	Strong red	5
R10	Strong yellow	70
R11	Strong green	80
R12	Strong blue	63
R13	Light yellowish pink (skin)	81
R14	Moderate olive green (leaf)	96

*NOTE: The total lumen output shown on this report was obtained from photometric test ITL87587-GONIOPHOTOMETRY



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NVLAP LAB CODE: 200925-0

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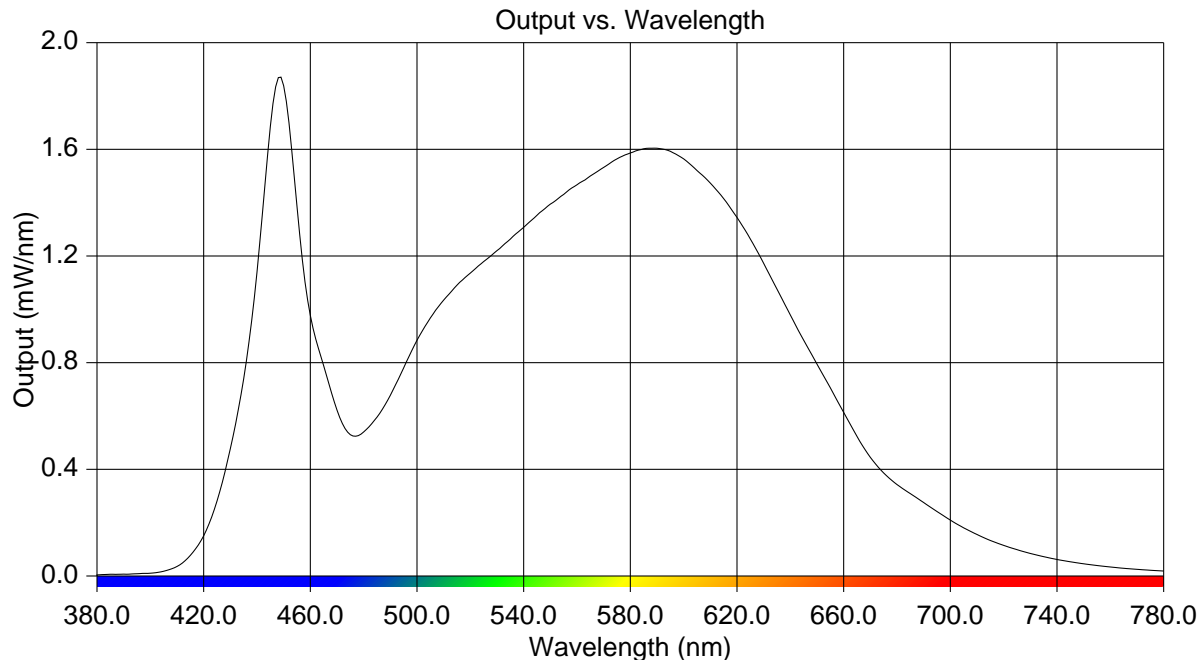
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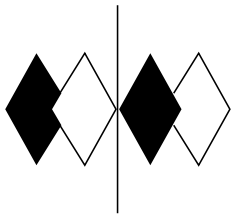
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.004	515	1.091	650	0.795
385	0.007	520	1.136	655	0.706
390	0.007	525	1.179	660	0.614
395	0.008	530	1.220	665	0.524
400	0.010	535	1.263	670	0.445
405	0.018	540	1.307	675	0.386
410	0.036	545	1.353	680	0.343
415	0.077	550	1.395	685	0.309
420	0.151	555	1.431	690	0.275
425	0.281	560	1.467	695	0.242
430	0.477	565	1.500	700	0.210
435	0.739	570	1.532	705	0.181
440	1.139	575	1.564	710	0.156
445	1.685	580	1.586	715	0.133
450	1.838	585	1.602	720	0.115
455	1.386	590	1.604	725	0.099
460	0.977	595	1.593	730	0.084
465	0.789	600	1.564	735	0.073
470	0.622	605	1.521	740	0.062
475	0.530	610	1.473	745	0.053
480	0.540	615	1.415	750	0.046
485	0.596	620	1.345	755	0.039
490	0.678	625	1.264	760	0.034
495	0.780	630	1.172	765	0.029
500	0.884	635	1.076	770	0.025
505	0.968	640	0.979	775	0.022
510	1.035	645	0.884	780	0.019





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CIE Chromaticity Diagram

