

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY

PAGE: 1 OF 9

ISSUE DATE: 06/20/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FSLEDV3YYB/120 - FSLEDV3YYB/120/TL

LUMINAIRE: CAST BLACK PAINTED METAL HOUSING/FACEPLATE, CAST BLACK 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, 3.02 WATTS, 0.0265 AMPS

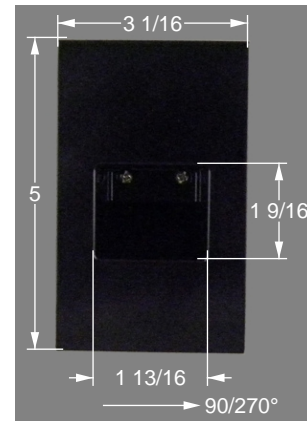
MOUNTING: RECESSED WALL

LED DRIVER: INTEGRAL TO CIRCUIT BOARD

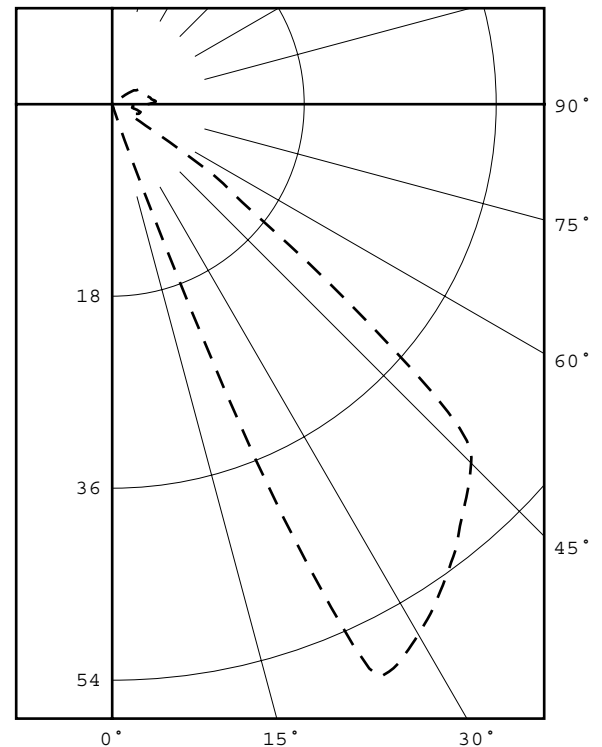
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LUMINAIRE.

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	0.0	0.0	0.0	0.0	0.0	0.0
15	0.3	0.0	0.0	0.0	0.0	0.0
25	59.2	0.5	0.0	0.0	0.0	4.4
35	54.4	37.8	0.0	0.0	0.0	9.3
45	47.6	32.4	0.0	0.0	0.0	10.1
55	11.7	24.7	0.0	0.0	0.0	5.5
65	2.0	4.9	0.0	0.0	0.0	1.1
75	2.7	0.5	0.0	0.0	0.0	0.5
85	1.9	0.4	0.0	0.0	0.0	0.4
90	3.3	0.4	0.0	0.0	0.0	0.0
95	4.0	0.3	0.0	0.0	0.0	0.6
105	3.3	0.3	0.0	0.0	0.0	0.5
115	3.1	0.1	0.0	0.0	0.0	0.4
125	1.7	0.1	0.0	0.0	0.0	0.2
135	0.2	0.0	0.0	0.0	0.0	0.0
145	0.1	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0	0.0



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

ZONAL LUMEN SUMMARY	ZONE	LUMENS	%FIXT
0- 30		4.4	13.4
0- 40		13.8	41.6
0- 60		29.3	88.7
0- 90		31.3	94.7
90-120		1.5	4.7
90-130		1.7	5.2
90-150		1.8	5.3
90-180		1.8	5.3
0-180		33.1	100.0

EFFICACY = 11.0 lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

BEAM ANGLE (50%) : 28.3 X N/A DEGREES

FIELD ANGLE (10%) : 37.7 X N/A DEGREES

Checked J. VILLANUEVA  
Approved R. BEATTIE  
Lighting Engineer



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



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

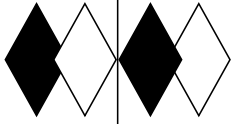
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 9

LUMINANCE DATA IN CANDELA/SQ M

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	36890.	35872.	0.
55	7885.	23928.	0.
65	1192.	4219.	0.
75	1550.	408.	0.
85	1052.	310.	0.



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



NVLAP LAB CODE: 200925-0

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

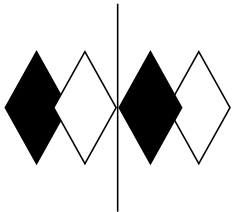
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 3 OF 9

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	0.0	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
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
7.5	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
10.0	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
12.5	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15.0	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5	0.5	0.5	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.0	8.9	7.3	2.6	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5	42.0	41.8	38.8	19.0	1.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25.0	59.2	59.3	58.0	44.5	25.9	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5	58.7	58.7	59.0	58.9	46.5	6.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
30.0	57.4	57.5	57.7	57.8	59.7	21.9	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
32.5	56.0	56.0	56.2	56.4	58.3	36.3	4.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
35.0	54.4	54.4	54.7	54.8	56.4	37.8	16.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0
37.5	52.8	52.7	52.9	53.0	54.4	37.5	18.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
40.0	50.9	50.8	51.0	51.0	52.2	36.0	18.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
42.5	49.3	49.2	49.1	48.9	49.9	34.2	18.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0
45.0	47.6	47.5	47.5	47.0	47.5	32.4	17.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0
47.5	42.7	42.8	44.3	44.8	45.0	30.6	16.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0
50.0	29.0	29.6	35.3	40.8	42.2	28.7	15.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0
52.5	16.8	17.1	20.1	29.5	37.9	26.7	14.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0
55.0	11.7	11.9	13.6	16.3	28.6	24.7	13.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0
57.5	3.7	3.9	6.4	11.1	15.5	21.8	12.1	1.2	0.0	0.0	0.0	0.0	0.0	0.0
60.0	2.1	2.1	2.4	3.3	10.2	15.5	10.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0
62.5	2.1	2.1	2.0	1.5	3.0	9.6	9.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0
65.0	2.0	2.0	2.0	1.4	1.0	4.9	5.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0
67.5	2.3	2.2	2.0	1.3	0.9	0.9	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0
70.0	2.6	2.5	2.2	1.4	0.9	0.7	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
72.5	2.7	2.6	2.3	1.4	0.8	0.6	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
75.0	2.7	2.6	2.2	1.4	0.8	0.5	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
77.5	2.3	2.3	2.0	1.2	0.7	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
80.0	1.9	1.9	1.7	1.0	0.6	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
82.5	1.9	1.8	1.7	1.0	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
85.0	1.9	1.8	1.7	1.0	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
87.5	2.4	2.4	2.3	1.1	0.6	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
90.0	3.3	3.2	3.2	1.5	0.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5	4.0	4.1	3.6	1.9	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95.0	4.0	4.1	3.7	1.9	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5	3.7	3.7	3.4	1.7	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.0	3.6	3.6	3.3	1.6	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5	3.4	3.5	3.2	1.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105.0	3.3	3.4	3.2	1.5	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5	3.3	3.4	3.1	1.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110.0	3.3	3.3	3.0	1.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
112.5	3.2	3.2	2.9	1.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115.0	3.1	3.1	2.8	1.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5	3.0	3.0	2.7	1.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.0	2.6	2.7	2.5	1.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5	2.4	2.4	2.2	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125.0	1.7	1.7	1.2	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5	0.7	0.7	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.0	0.4	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135.0	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.0	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
152.5	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
155.0	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
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



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



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

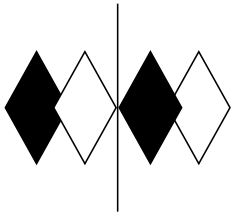
PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 4 OF 9

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	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
162.5	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
165.0	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
167.5	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
170.0	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
172.5	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
175.0	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
177.5	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
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



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



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

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

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 5 OF 9

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



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



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

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

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 6 OF 9

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



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: ITL87617-GONIOPHOTOMETRY  
 ISSUE DATE: 06/20/16  
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 9

5-DEGREE  
 ZONAL LUMEN SUMMARY

0- 5	0.0
5- 10	0.0
10- 15	0.0
15- 20	0.0
20- 25	1.2
25- 30	3.2
30- 35	4.4
35- 40	5.0
40- 45	5.1
45- 50	4.9
50- 55	3.6
55- 60	1.9
60- 65	0.8
65- 70	0.3
70- 75	0.2
75- 80	0.2
80- 85	0.2
85- 90	0.2
90- 95	0.3
95-100	0.3
100-105	0.3
105-110	0.2
110-115	0.2
115-120	0.2
120-125	0.1
125-130	0.0
130-135	0.0
135-140	0.0
140-145	0.0
145-150	0.0
150-155	0.0
155-160	0.0
160-165	0.0
165-170	0.0
170-175	0.0
175-180	0.0

10-DEGREE  
 ZONAL LUMEN SUMMARY

0- 10	0.0
0- 20	0.0
0- 30	4.4
0- 40	13.8
0- 50	23.8
0- 60	29.3
0- 70	30.5
0- 80	30.9
0- 90	31.3
0-100	31.9
0-110	32.5
0-120	32.9
0-130	33.1
0-140	33.1
0-150	33.1
0-160	33.1
0-170	33.1
0-180	33.1



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: ITL87617-GONIOPHOTOMETRY

PAGE: 8 OF 9

ISSUE DATE: 06/20/16

PREPARED FOR: RAB LIGHTING INC.

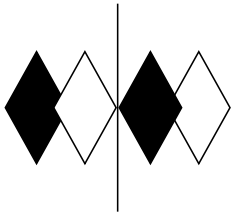
COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	118	118	118	118	118	114	114	114	114	108	108	108	102	102	102	97	97	97	95
1	109	105	101	97	106	102	98	95	97	94	91	92	90	88	87	86	84	82	82
2	100	92	86	80	96	90	84	79	85	81	76	81	77	74	78	74	72	69	69
3	91	81	73	67	88	79	72	66	75	69	64	72	67	62	69	64	61	58	58
4	83	71	63	56	80	69	61	55	66	59	54	63	57	53	61	56	52	49	49
5	75	63	54	47	73	61	53	47	58	51	46	56	50	45	54	48	44	42	42
6	69	55	46	40	66	54	46	40	52	44	39	50	43	38	48	42	37	35	35
7	63	49	40	34	61	48	40	34	46	39	33	44	37	32	42	36	32	30	30
8	58	44	35	29	56	43	35	29	41	34	28	39	33	28	38	32	27	25	25
9	53	39	31	25	51	38	30	25	37	30	24	35	29	24	34	28	24	22	22
10	49	35	27	22	47	35	27	21	33	26	21	32	25	21	31	25	20	19	19

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.



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



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

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

REPORT NUMBER: ITL87617-GONIOPHOTOMETRY  
ISSUE DATE: 06/20/16  
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9

ADDRESS: 170 LUDLOW AVE.  
NORTHVALE, NJ 07647

THIS ITL 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.



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

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

REPORT NUMBER: ITL87617-SPHERE  
DATE: 06/21/16  
PREPARED FOR: RAB LIGHTING INC.  
CATALOG NUMBER: FSLEDV3YYB/120 - FSLEDV3YYB/120/TL

ADDRESS: 170 LUDLOW AVE.  
NORTHVALE, NJ 07647

LUMINAIRE: CAST BLACK PAINTED METAL HOUSING/FACEPLATE, CAST BLACK 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)

THIS ITL 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.

Checked	<i>N WHITE</i>
Approved	<i>P O'CONNOR</i> Sphere Lab Supervisor



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

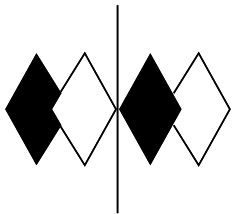
PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)  
 REPORT NUMBER: ITL87617-SPHERE  
 DATE: 06/21/16  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: FSLEDV3YYB/120 - FSLEDV3YYB/120/TL

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	33.1 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4582
Chromaticity Ordinate y	0.4171
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2586
Chromaticity Ordinate v'	0.5296
Correlated Color Temp CCT (K)	2773
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	99 *
Scotopic / Photopic Lumen Ratio	1.268
ELECTRICAL	
Input Voltage (Volts AC )	120.0
Input Current (Amps AC )	0.027
Input Power (Watts)	3.02
Input Power Factor (%)	93.2
Input Current THD (%)	31.4
Input Voltage THD (%)	0.3
EFFICACY (lumens/Watt)	11.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	80
R1 Light greyish red	77
R2 Dark greyish yellow	89
R3 Strong yellowish green	96
R4 Moderate yellowish green	77
R5 Light bluish green	77
R6 Light blue	88
R7 Light violet	80
R8 Light reddish purple	52
R9 Strong red	-5
R10 Strong yellow	76
R11 Strong green	75
R12 Strong blue	70
R13 Light yellowish pink (skin)	79
R14 Moderate olive green (leaf)	98

\*NOTE: The total lumen output shown on this report was obtained from photometric test ITL87617-GONIOPHOTOMETRY



# itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



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](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

REPORT NUMBER: ITL87617-SPHERE

Page 3 of 4

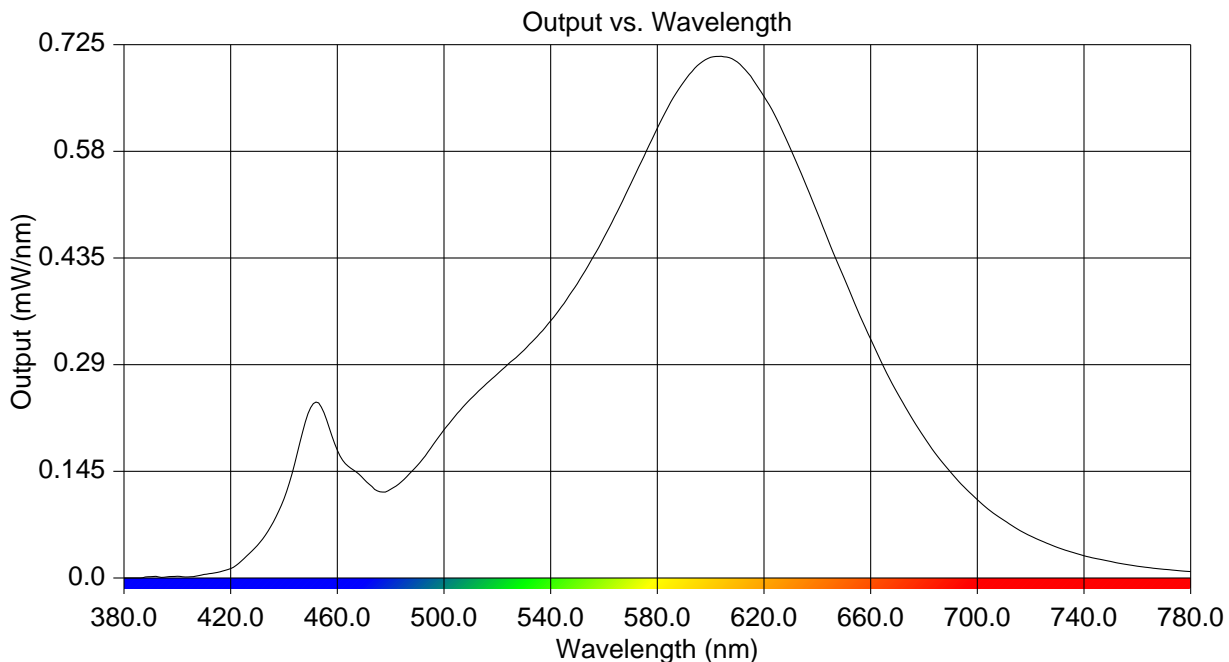
DATE: 06/21/16

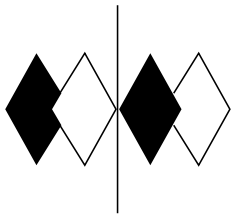
PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FSLEDV3YYB/120 - FSLEDV3YYB/120/TL

## RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.000	515	0.261	650	0.408
385	0.000	520	0.277	655	0.365
390	0.002	525	0.294	660	0.325
395	0.001	530	0.310	665	0.286
400	0.002	535	0.328	670	0.252
405	0.002	540	0.350	675	0.220
410	0.005	545	0.373	680	0.192
415	0.008	550	0.400	685	0.166
420	0.013	555	0.431	690	0.144
425	0.026	560	0.463	695	0.124
430	0.044	565	0.498	700	0.106
435	0.070	570	0.535	705	0.091
440	0.108	575	0.573	710	0.078
445	0.170	580	0.612	715	0.067
450	0.232	585	0.647	720	0.057
455	0.225	590	0.675	725	0.049
460	0.174	595	0.697	730	0.042
465	0.149	600	0.708	735	0.036
470	0.134	605	0.708	740	0.030
475	0.118	610	0.701	745	0.026
480	0.121	615	0.682	750	0.022
485	0.134	620	0.655	755	0.019
490	0.153	625	0.622	760	0.016
495	0.176	630	0.583	765	0.014
500	0.201	635	0.541	770	0.012
505	0.224	640	0.497	775	0.010
510	0.244	645	0.451	780	0.009





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

REPORT NUMBER: ITL87617-SPHERE  
DATE: 06/21/16  
PREPARED FOR: RAB LIGHTING INC.  
CATALOG NUMBER: FSLEDV3YYB/120 - FSLEDV3YYB/120/TL

## CIE Chromaticity Diagram

