

REPORT NUMBER: PRORATED FROM RAB04537

PAGE: 1 OF 6

ISSUE DATE: 08/17/18

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

CATALOG NUMBER: CDL2W-20W40D927-ODLENS

LUMINAIRE: EXTRUDED BLACK PAINTED ALUMINUM HOUSING, 2 WHITE CIRCUIT BOARD EACH WITH ONE LED, POLYCARBONATE TIR LENS ON TOP OF THE LEDS, ALUMINUM TRIM DOORS WITH GLASS LENS.

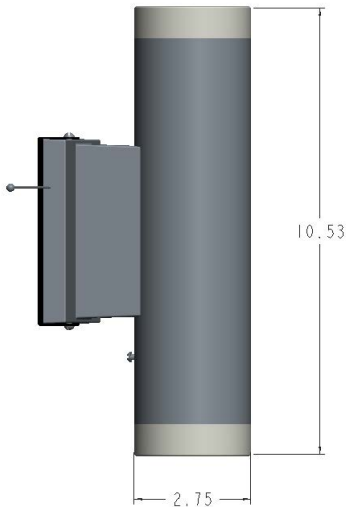
LAMPS: TWO WHITE LIGHT EMITTING DIODES (LEDS).

NOTE: THIS REPORT WAS PRORATED FROM RAB04537 WHICH WAS CDL2W-20W40D927-ODLENS WITH UPPER OPENING COVERED. THE DATA WAS DOUBLED/MIRRORED TO REPRESENT A WALL DIRECT/INDIRECT LIGHT. ACTUAL PERFORMANCE MAY VARY.

WATT: TOTAL INPUT WATTS = 20.9 W AT 277.0 VAC.

LED DRIVER: LED DRIVER: RDD-30W-042SE-A0500

PROCEDURE: TEST PROCEDURE: IESNA LM-79-08



Checked X.CAO

Approved D.WANG-MUNSON

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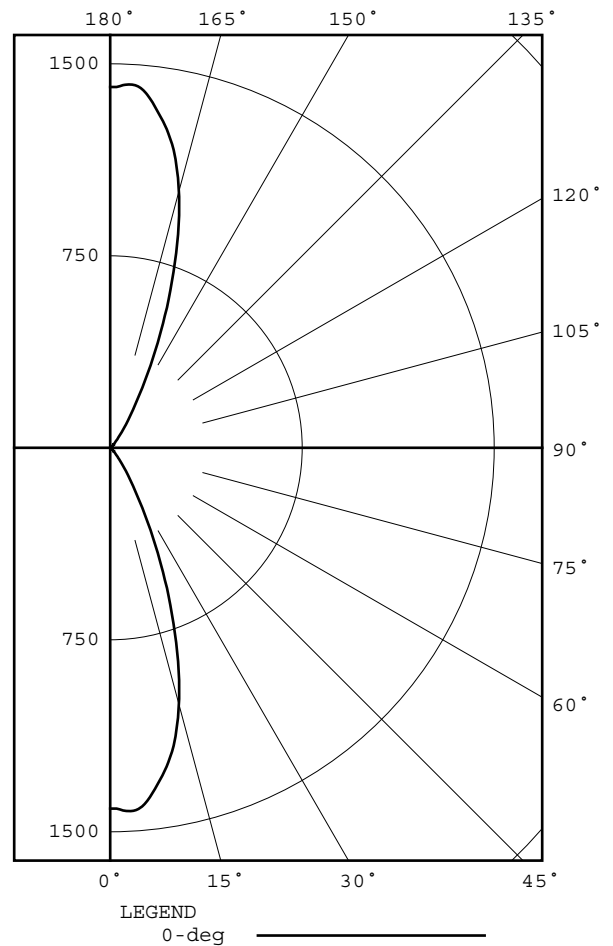
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CATALOG NUMBER: CDL2W-20W40D927-ODLENS

DEG	CANDELA	LUMENS
0	1409	
5	1407	129
15	1036	281
25	414	191
35	94	62
45	21	17
55	5	5
65	1	1
75	0	0
85	0	0
90	0	
95	0	0
105	0	0
115	1	1
125	5	5
135	21	17
145	94	62
155	414	191
165	1036	281
175	1407	129
180	1409	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	601	43.8
0- 40	663	48.3
0- 60	686	49.9
0- 90	687	50.0
90-120	2	0.1
90-130	7	0.5
90-150	86	6.2
90-180	687	50.0
0-180	1374	100.0

EFFICACY = 65.7 lm/W
 CIE TYPE - GENERAL DIFFUSE
 SPACING CRITERION: 0.63





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CANDELA DISTRIBUTION

0.0	1409	60.0	2	120.0	2	180.0	1409
1.0	1410	61.0	1	121.0	2		
2.0	1418	62.0	1	122.0	3		
3.0	1421	63.0	1	123.0	4		
4.0	1419	64.0	1	124.0	4		
5.0	1407	65.0	1	125.0	5		
6.0	1387	66.0	1	126.0	7		
7.0	1359	67.0	1	127.0	8		
8.0	1328	68.0	1	128.0	9		
9.0	1298	69.0	1	129.0	10		
10.0	1266	70.0	1	130.0	12		
11.0	1230	71.0	1	131.0	14		
12.0	1190	72.0	1	132.0	15		
13.0	1144	73.0	1	133.0	17		
14.0	1092	74.0	1	134.0	19		
15.0	1036	75.0	0	135.0	21		
16.0	978	76.0	0	136.0	24		
17.0	914	77.0	0	137.0	26		
18.0	851	78.0	0	138.0	30		
19.0	785	79.0	0	139.0	34		
20.0	720	80.0	0	140.0	39		
21.0	655	81.0	0	141.0	46		
22.0	591	82.0	0	142.0	55		
23.0	527	83.0	0	143.0	66		
24.0	468	84.0	0	144.0	79		
25.0	414	85.0	0	145.0	94		
26.0	363	86.0	0	146.0	109		
27.0	313	87.0	0	147.0	128		
28.0	271	88.0	0	148.0	147		
29.0	232	89.0	0	149.0	171		
30.0	199	90.0	0	150.0	199		
31.0	171	91.0	0	151.0	232		
32.0	147	92.0	0	152.0	271		
33.0	128	93.0	0	153.0	313		
34.0	109	94.0	0	154.0	363		
35.0	94	95.0	0	155.0	414		
36.0	79	96.0	0	156.0	468		
37.0	66	97.0	0	157.0	527		
38.0	55	98.0	0	158.0	591		
39.0	46	99.0	0	159.0	655		
40.0	39	100.0	0	160.0	720		
41.0	34	101.0	0	161.0	785		
42.0	30	102.0	0	162.0	851		
43.0	26	103.0	0	163.0	914		
44.0	24	104.0	0	164.0	978		
45.0	21	105.0	0	165.0	1036		
46.0	19	106.0	1	166.0	1092		
47.0	17	107.0	1	167.0	1144		
48.0	15	108.0	1	168.0	1190		
49.0	14	109.0	1	169.0	1230		
50.0	12	110.0	1	170.0	1266		
51.0	10	111.0	1	171.0	1298		
52.0	9	112.0	1	172.0	1328		
53.0	8	113.0	1	173.0	1359		
54.0	7	114.0	1	174.0	1387		
55.0	5	115.0	1	175.0	1407		
56.0	4	116.0	1	176.0	1419		
57.0	4	117.0	1	177.0	1421		
58.0	3	118.0	1	178.0	1418		
59.0	2	119.0	1	179.0	1410		

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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	34
5- 10	95
10- 15	137
15- 20	144
20- 25	117
25- 30	74
30- 35	41
35- 40	21
40- 45	11
45- 50	7
50- 55	4
55- 60	2
60- 65	1
65- 70	1
70- 75	0
75- 80	0
80- 85	0
85- 90	0
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	1
115-120	1
120-125	2
125-130	4
130-135	7
135-140	11
140-145	21
145-150	41
150-155	74
155-160	117
160-165	144
165-170	137
170-175	95
175-180	34

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	129
0- 20	410
0- 30	601
0- 40	663
0- 50	680
0- 60	686
0- 70	687
0- 80	687
0- 90	687
0-100	687
0-110	688
0-120	689
0-130	694
0-140	711
0-150	773
0-160	964
0-170	1245
0-180	1374

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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	100	97	94	92	93	90	88	86	77	75	74	65	64	63	54	53	53	48
2	94	89	84	80	87	83	79	76	71	69	66	61	59	58	51	50	49	45
3	88	81	76	72	82	76	72	68	66	63	60	57	55	53	49	48	47	43
4	83	75	69	65	77	71	65	62	62	58	55	54	52	50	47	45	44	41
5	78	70	63	59	73	66	60	56	58	54	51	51	49	46	45	43	42	39
6	74	65	58	54	69	61	56	52	55	51	48	49	46	44	43	41	39	37
7	70	60	54	50	66	57	52	48	52	48	45	46	43	41	41	39	38	35
8	66	57	51	46	62	54	49	45	49	45	42	44	41	39	39	37	36	34
9	63	53	47	43	59	51	46	42	46	42	39	42	39	37	38	36	34	32
10	60	50	45	41	57	48	43	40	44	40	37	40	37	35	36	34	33	31

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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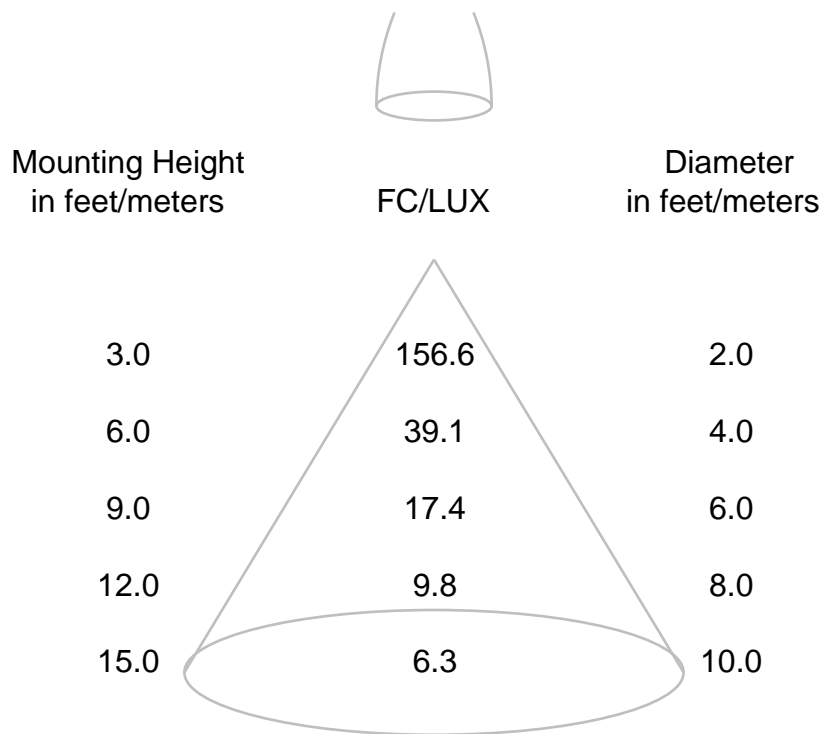
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CONE OF LIGHT DIAGRAM

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



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

REPORT NUMBER: RAB04625
DATE: 9/12/2018
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
CATALOG NUMBER: CDL2W-20W40D927-ODLENS

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: EXTRUDED BLACK PAINTED ALUMINUM HOUSING, 2 WHITE CIRCUIT BOARD EACH WITH ONE LED, POLYCARBONATE TIR LENS ON TOP OF THE LEDS, ALUMINUM TRIM DOORS WITH GLASS LENS.

LAMP: TWO WHITE LIGHT EMITTING DIODES (LEDS).

DRIVER: RDD-30W-042SE-A0500

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (277.0 AND 120.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS: GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100 Calibration Due: N/A
CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202 3/08/19
OCEAN OPTICS QE65PRO Spectroradiometer 08/22/19
RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry 08/22/19

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRIa,1-14), Chromaticity Coordinates (x,y; u'v'), ANSI C78.377 Duv, and electrical data including ANSI C82.77-2002 Power Factor (PF), and Total Harmonic Distortion (THD) to the test sample. Measure electrical data including Total Harmonic Distortion (THD) at maximum nominal rated input voltage. Report Off-State Power.

PROCEDURE: The test sample was mounted inside the integrating sphere, energized, 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 60 HZ input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. Electrical data was also recorded at maximum nominal rated input voltage (120.0 VAC). All data are traceable to the National Institute of Standards and Technology. Off-State Power was reported with no voltage applied to the sample.

*NOTE: Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.

RESULTS: (continued subsequent pages)

Checked	<u>X.CAO</u>
Approved	<u>D.WANG-MUNSON</u> Lighting Engineer

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	1374 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4617
Chromaticity Ordinate y	0.4141
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2621
Chromaticity Ordinate v'	0.5290
Correlated Color Temp CCT (K)	2701
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	4855 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.086
Input Power (Watts)	20.9
Input Power Factor (%)	88.1
Input Current THD (%)	20.5
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
65.7	
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.171
Input Power (Watts)	20.2
Input Power Factor (%)	98.3
Input Current THD (%)	13.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
0.0	

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	92
R1 Light greyish red	92
R2 Dark greyish yellow	96
R3 Strong yellowish green	98
R4 Moderate yellowish green	92
R5 Light bluish green	92
R6 Light blue	95
R7 Light violet	92
R8 Light reddish purple	81
R9 Strong red	58
R10 Strong yellow	89
R11 Strong green	93
R12 Strong blue	82
R13 Light yellowish pink (skin)	93
R14 Moderate olive green (leaf)	98

*NOTE:

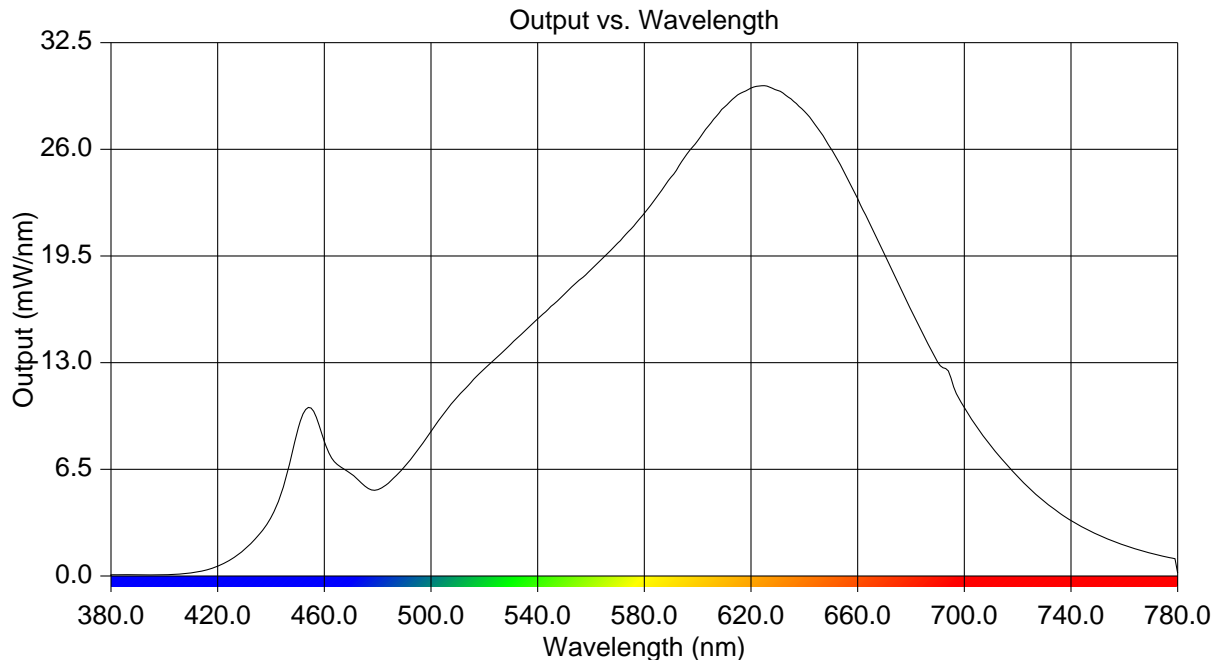
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.071	515	11.793	650	26.021
385	0.074	520	12.624	655	24.596
390	0.068	525	13.366	660	22.999
395	0.070	530	14.136	665	21.315
400	0.076	535	14.901	670	19.641
405	0.111	540	15.678	675	17.889
410	0.188	545	16.432	680	16.204
415	0.334	550	17.166	685	14.586
420	0.604	555	17.957	690	13.035
425	1.011	560	18.668	695	12.065
430	1.610	565	19.482	700	10.260
435	2.429	570	20.284	705	9.019
440	3.548	575	21.142	710	7.914
445	5.651	580	22.086	715	6.953
450	8.852	585	23.172	720	6.057
455	10.237	590	24.301	725	5.243
460	8.197	595	25.487	730	4.532
465	6.764	600	26.522	735	3.923
470	6.247	605	27.611	740	3.373
475	5.506	610	28.568	745	2.911
480	5.267	615	29.317	750	2.528
485	5.811	620	29.735	755	2.175
490	6.645	625	29.879	760	1.871
495	7.654	630	29.590	765	1.607
500	8.827	635	29.075	770	1.381
505	9.970	640	28.322	775	1.183
510	10.921	645	27.291	780	0.178



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CIE Chromaticity Diagram

