

REPORT NUMBER: RAB02086

ISSUE DATE: 06/16/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: RDLED2AR8-40Y-TW

LUMINAIRE: FABRICATED METAL UPPER HOUSING AND BALLAST HOUSING, CAST BLACK PAINTED FINNED METAL HEAT SINK, CAST WHITE PAINTED METAL GIMBAL, 1 WHITE CIRCUIT BOARD WITH ONE LED, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, HOLOGRAPHIC FLAT PLASTIC LENS, CAST WHITE METAL LOWER HOUSING.

LAMP: ONE WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED) WITH CLEAR HEMISPHERICAL INTEGRAL LENS, VERTICAL BASE-UP POSITION.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS: 8.2924 W AT 120.0 VOLTS

\*(SEE PAGE 2 FOR MORE INFORMATION)\*

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DATE SAMPLE TESTED: 06/16/16

DEG	CANDELA	LUMENS
0	1263	
5	1220	112
15	819	226
25	400	185
35	154	98
45	47	39
55	23	21
65	14	14
75	8	8
85	3	3
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	522	74.1
0- 40	621	88.0
0- 60	680	96.5
0- 90	705	100.0
90-180	0	0.0
0-180	705	100.0

TOTAL INPUT WATTS = 8.3

EFFICACY = 84.9 Lm/W

CIE TYPE - DIRECT

LUMINAIRE SPACING CRITERION = 0.6

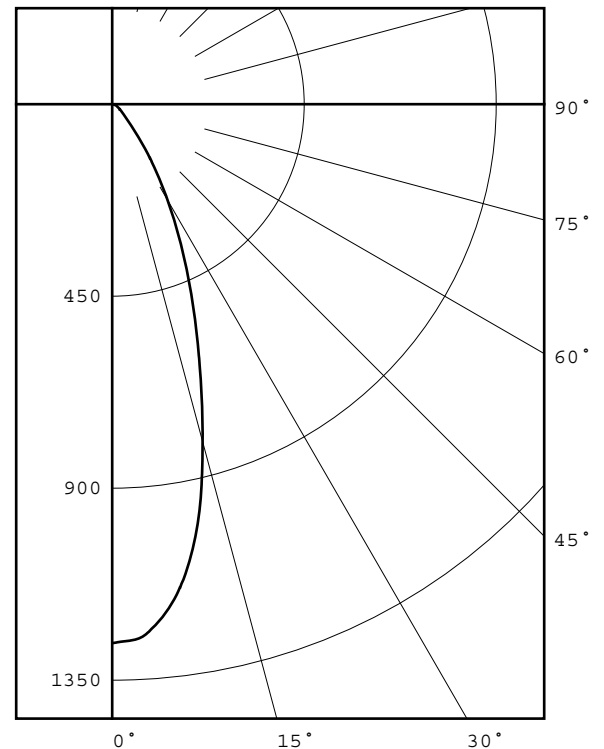
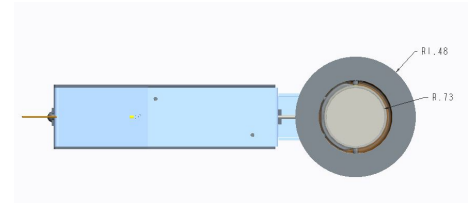
LUMINOUS DIAMETER: 0.730

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE

IN DEG

45 246066.  
55 148449.  
65 122636.  
75 114428.  
85 127428.



Checked X.CAO  
Approved D.WANG-MUNSON

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ADDITIONAL INFORMATION

TEST PROCEDURE: IESNA LM-79-08  
TEST DISTANCE: 28.25 FEET  
PREPARED FOR: RAB LIGHTING INC.  
LED DRIVER: RD-008-E1-A0200

ACCREDITED LABORATORY CODE 201085-0

NOTE: 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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BEAM ANGLE (50%) : 37.8 DEGREES  
FIELD ANGLE (10%): 73.4 DEGREES

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## CANDELA DISTRIBUTION

	0.0
0.0	1263
2.5	1256
5.0	1220
7.5	1159
10.0	1070
12.5	955
15.0	819
17.5	693
20.0	582
22.5	487
25.0	400
27.5	325
30.0	260
32.5	203
35.0	154
37.5	113
40.0	82
42.5	61
45.0	47
47.5	38
50.0	31
52.5	26
55.0	23
57.5	20
60.0	18
62.5	16
65.0	14
67.5	12
70.0	11
72.5	9
75.0	8
77.5	6
80.0	5
82.5	4
85.0	3
87.5	1
90.0	0

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ZONAL LUMEN SUMMARY

0- 5	30.
5- 10	82.
10- 15	112.
15- 20	114.
20- 25	102.
25- 30	83.
30- 35	60.
35- 40	38.
40- 45	23.
45- 50	16.
50- 55	12.
55- 60	9.
60- 65	8.
65- 70	6.
70- 75	5.
75- 80	3.
80- 85	2.
85- 90	1.

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## 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	30
5- 10	82
10- 15	112
15- 20	114
20- 25	102
25- 30	83
30- 35	60
35- 40	38
40- 45	23
45- 50	16
50- 55	12
55- 60	9
60- 65	8
65- 70	6
70- 75	5
75- 80	3
80- 85	2
85- 90	1
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	0
145-150	0
150-155	0
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

## 10-DEGREE ZONAL LUMEN SUMMARY

0- 10	112
0- 20	338
0- 30	522
0- 40	621
0- 50	660
0- 60	680
0- 70	694
0- 80	703
0- 90	705
0-100	705
0-110	705
0-120	705
0-130	705
0-140	705
0-150	705
0-160	705
0-170	705
0-180	705

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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	106	106	106	102	102	102	100
1	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86
3	102	96	91	87	100	94	90	86	92	88	85	89	86	83	87	84	82	81
4	97	90	84	80	96	89	84	80	87	82	79	85	81	78	83	80	77	75
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71
6	89	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67
7	85	76	70	66	83	75	69	65	74	69	65	72	68	65	71	67	64	63
8	81	72	66	62	80	71	66	62	70	65	62	69	65	61	68	64	61	60
9	77	68	63	59	76	68	62	59	67	62	58	66	61	58	65	61	58	57
10	74	65	60	56	73	65	59	56	64	59	56	63	59	55	62	58	55	54

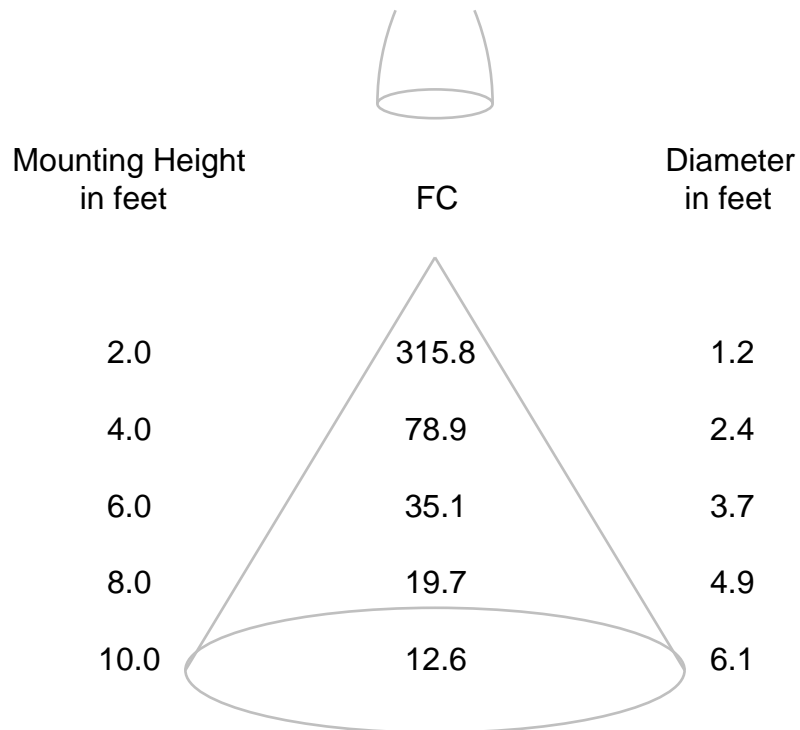
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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## CONE OF LIGHT DIAGRAM

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





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CATALOG NUMBER: RDLED2AR8-40Y-TW

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: FABRICATED METAL UPPER HOUSING AND BALLAST HOUSING, CAST BLACK PAINTED FINNED METAL HEAT SINK, CAST WHITE PAINTED METAL GIMBAL, 1 WHITE CIRCUIT BOARD WITH ONE LED, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, HOLOGRAPHIC FLAT PLASTIC LENS, CAST WHITE METAL LOWER HOUSING.

LAMP: ONE WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED) WITH CLEAR HEMISPHERICAL INTEGRAL LENS, VERTICALBASE-UP POSITION.

DRIVER: RD-008-E1-A0200

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120.0 VAC , 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due:
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	N/A
	OCEAN OPTICS QE65PRO Spectroradiometer	2/26/17
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	5/31/17

OBJECT OF TEST: Measure the Total Radiant Flux\*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI<sub>a</sub>,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. Report Off-State Power.

PROCEDURE: The test sample was provided by the customer and had an unknown number of burn 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 120.0 VAC 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. 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:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4381
Chromaticity Ordinate y	0.4064
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2503
Chromaticity Ordinate v'	0.5225
Correlated Color Temp CCT (K)	2999
Color Rendering Index (CRIa)	81
Color Rendering Index 1 (Light greyish red)	79
Color Rendering Index 2 (Dark greyish yellow)	88
Color Rendering Index 3 (Strong yellowish green)	96
Color Rendering Index 4 (Moderate yellowish green)	80
Color Rendering Index 5 (Light bluish green)	79
Color Rendering Index 6 (Light blue)	85
Color Rendering Index 7 (Light violet)	84
Color Rendering Index 8 (Light reddish purple)	59
Color Rendering Index 9 (Strong red)	4
Color Rendering Index 10 (Strong yellow)	72
Color Rendering Index 11 (Strong green)	78
Color Rendering Index 12 (Strong blue)	66
Color Rendering Index 13 (Light yellowish pink (skin))	80
Color Rendering Index 14 (Moderate olive green (leaf))	97
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	2143 *
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC )	120.0
Input Current (Amps AC )	0.071
Input Power (Watts)	8.29
Input Power Factor (%)	97.1
Input Current THD (%)	21.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

\*NOTE:

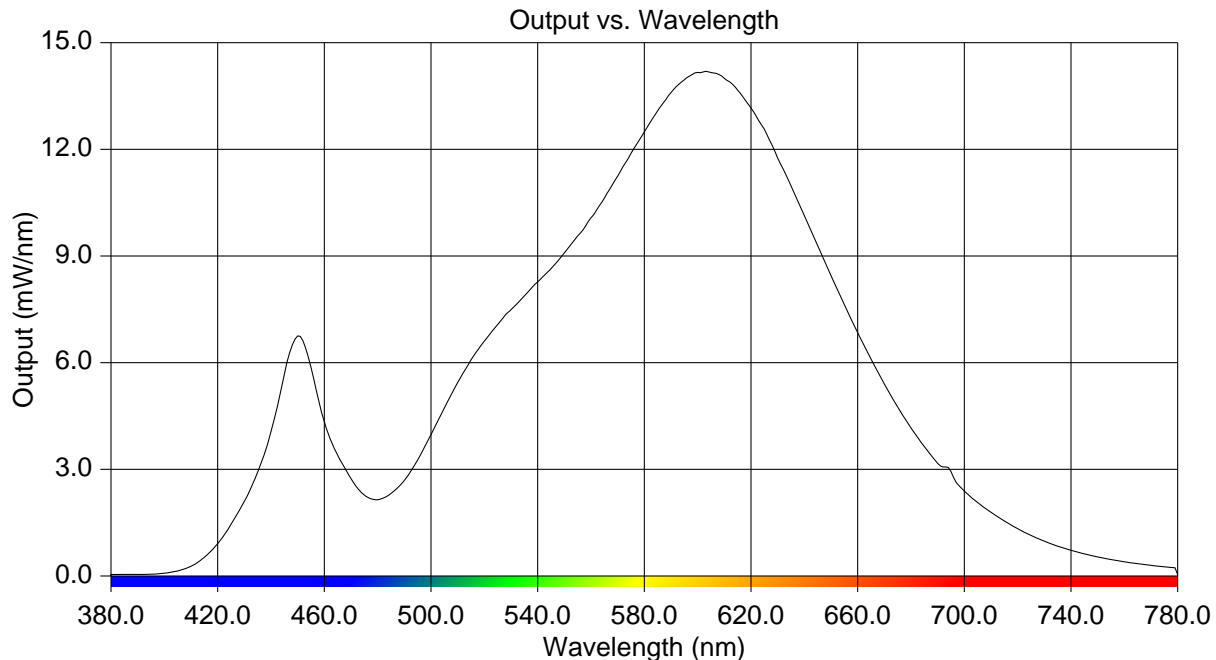
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### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.039	515	6.079	650	8.443
385	0.039	520	6.605	655	7.637
390	0.042	525	7.081	660	6.842
395	0.055	530	7.488	665	6.097
400	0.079	535	7.871	670	5.397
405	0.139	540	8.269	675	4.756
410	0.277	545	8.646	680	4.166
415	0.524	550	9.081	685	3.630
420	0.906	555	9.564	690	3.169
425	1.453	560	10.076	695	2.936
430	2.093	565	10.625	700	2.380
435	2.921	570	11.246	705	2.071
440	4.063	575	11.888	710	1.789
445	5.676	580	12.488	715	1.548
450	6.751	585	13.093	720	1.331
455	5.869	590	13.597	725	1.138
460	4.328	595	13.956	730	0.981
465	3.404	600	14.163	735	0.838
470	2.728	605	14.161	740	0.722
475	2.267	610	13.996	745	0.621
480	2.144	615	13.666	750	0.537
485	2.323	620	13.162	755	0.461
490	2.685	625	12.568	760	0.399
495	3.264	630	11.753	765	0.346
500	3.976	635	10.978	770	0.298
505	4.718	640	10.137	775	0.258
510	5.442	645	9.282	780	0.039



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## CIE Chromaticity Diagram

