

REPORT NUMBER: RAB02161

ISSUE DATE: 07/01/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: SK8XL10RY

LUMINAIRE: STAMPED STEEL CEILING PAN WITH WHITE FINISH, 7 LED BOARDS
EACH WITH 6 LEDS, ACRYLIC DROP LENS WITH SMOOTH FINISH.

LAMPS: FORTY-TWO WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP
POSITION.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS = 10.292 AT 120.0 VOLTS.

LED DRIVER: RDD-MK015-MKP40-A0500

TST PROCEDURE: IESNA LM 79-08

ACCREDITED LABORATORY CODE 201058-0

(SEE PAGE 2 FOR MORE INFORMATION)

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DATE SAMPLE TESTED: 07/01/16

DEG	CANDELA	LUMENS
0	252	
5	251	24
15	243	69
25	226	104
35	201	126
45	171	132
55	137	123
65	105	104
75	77	81
85	53	59
90	44	
95	36	39
105	23	25
115	16	16
125	12	11
135	12	9
145	11	7
155	11	5
165	11	3
175	6	1
180	2	

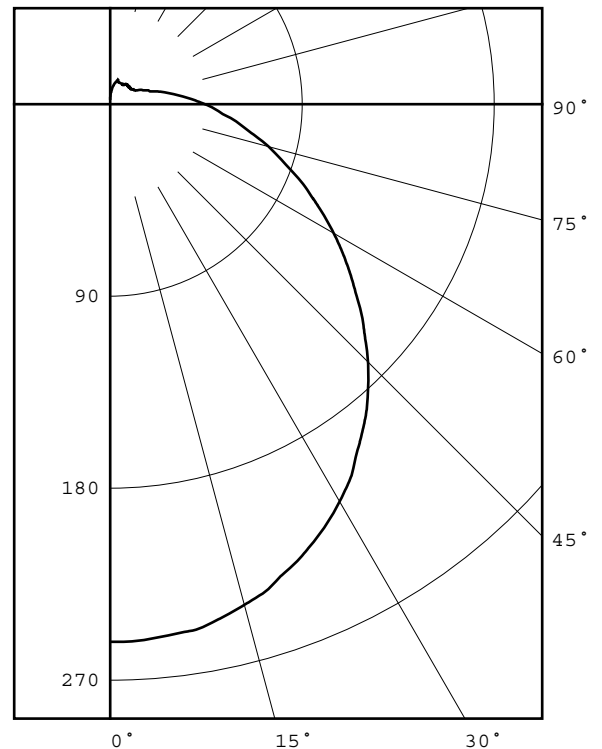
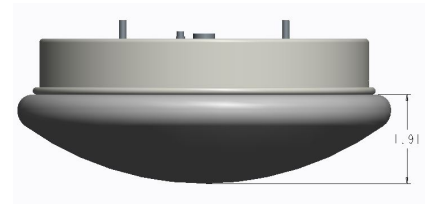
ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	197	21.0
0- 40	323	34.4
0- 60	577	61.6
0- 90	821	87.6
90-120	80	8.5
90-130	91	9.7
90-150	107	11.4
90-180	116	12.4
0-180	938	100.0

TOTAL INPUT WATTS = 10.3

EFFICACY = 91.1 Lm/W

CIE TYPE - SEMI-DIRECT

LUMINAIRE SPACING CRITERION = 1.3



Checked X.CAO
Approved D.WANG-MUNSON

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ADDITIONAL INFORMATION

TEST DISTANCE = 25.25 FEET

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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LUMINOUS DIAMETER: 8.040
HEIGHT OF SIDE : 1.910

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE

IN DEG

45	5667.
55	5091.
65	4599.
75	4265.
85	4164.

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CANDELA DISTRIBUTION

	0.0
0.0	252
5.0	251
10.0	249
15.0	243
20.0	235
25.0	226
30.0	215
35.0	201
40.0	187
45.0	171
50.0	154
55.0	137
60.0	121
65.0	105
70.0	90
75.0	77
80.0	64
85.0	53
90.0	44
95.0	36
100.0	29
105.0	23
110.0	19
115.0	16
120.0	13
125.0	12
130.0	12
135.0	12
140.0	12
145.0	11
150.0	11
155.0	11
160.0	11
165.0	11
170.0	9
175.0	6
180.0	2

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ZONAL LUMEN SUMMARY

0- 5	6.
5- 10	18.
10- 15	29.
15- 20	39.
20- 25	48.
25- 30	56.
30- 35	61.
35- 40	65.
40- 45	66.
45- 50	66.
50- 55	63.
55- 60	60.
60- 65	55.
65- 70	49.
70- 75	44.
75- 80	38.
80- 85	32.
85- 90	27.
90- 95	22.
95-100	18.
100-105	14.
105-110	11.
110-115	9.
115-120	7.
120-125	6.
125-130	5.
130-135	5.
135-140	4.
140-145	4.
145-150	3.
150-155	3.
155-160	2.
160-165	2.
165-170	1.
170-175	1.
175-180	0.

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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	6
5- 10	18
10- 15	29
15- 20	39
20- 25	48
25- 30	56
30- 35	61
35- 40	65
40- 45	66
45- 50	66
50- 55	63
55- 60	60
60- 65	55
65- 70	49
70- 75	44
75- 80	38
80- 85	32
85- 90	27
90- 95	22
95-100	18
100-105	14
105-110	11
110-115	9
115-120	7
120-125	6
125-130	5
130-135	5
135-140	4
140-145	4
145-150	3
150-155	3
155-160	2
160-165	2
165-170	1
170-175	1
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	24
0- 20	93
0- 30	197
0- 40	323
0- 50	455
0- 60	577
0- 70	682
0- 80	763
0- 90	821
0-100	861
0-110	886
0-120	901
0-130	912
0-140	922
0-150	929
0-160	934
0-170	937
0-180	938

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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	88
1	104	98	93	88	100	95	90	86	88	84	81	82	79	76	76	74	72	69
2	94	84	77	71	90	81	75	69	76	70	65	71	66	62	66	62	59	56
3	85	74	65	58	81	71	63	57	66	60	54	62	56	51	58	53	49	46
4	78	65	56	49	74	63	54	48	59	51	46	55	49	44	51	46	42	39
5	71	58	48	42	68	56	47	41	52	45	39	49	43	38	46	41	36	34
6	66	52	43	36	63	50	42	35	47	40	34	44	38	33	42	36	32	29
7	61	47	38	32	58	46	37	31	43	35	30	40	34	29	38	32	28	26
8	57	43	34	28	54	42	33	28	39	32	27	37	31	26	35	29	25	23
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	32	27	23	21
10	49	36	28	23	48	35	28	22	33	26	22	32	25	21	30	24	20	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 LUMINAIRE SAMPLE.

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ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: STAMPED STEEL CEILING PAN WITH WHITE FINISH, 7 LED BOARDS EACH WITH 6 LEDS, ACRYLIC DROP LENS WITH SMOOTH FINISH.

LAMP: FORTY-TWO WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP POSITION.

DRIVER: RDD-MK015-MKP40-A0500

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 (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. 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 X.CAO

Approved D.WANG-MUNSON
Lighting Engineer

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RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4641
Chromaticity Ordinate y	0.4149
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2633
Chromaticity Ordinate v'	0.5296
Correlated Color Temp CCT (K)	2675
Color Rendering Index (CRIa)	82
Color Rendering Index 1 (Light greyish red)	81
Color Rendering Index 2 (Dark greyish yellow)	92
Color Rendering Index 3 (Strong yellowish green)	95
Color Rendering Index 4 (Moderate yellowish green)	80
Color Rendering Index 5 (Light bluish green)	81
Color Rendering Index 6 (Light blue)	92
Color Rendering Index 7 (Light violet)	81
Color Rendering Index 8 (Light reddish purple)	57
Color Rendering Index 9 (Strong red)	8
Color Rendering Index 10 (Strong yellow)	82
Color Rendering Index 11 (Strong green)	79
Color Rendering Index 12 (Strong blue)	76
Color Rendering Index 13 (Light yellowish pink (skin))	83
Color Rendering Index 14 (Moderate olive green (leaf))	98
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	2911 *
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.089
Input Power (Watts)	10.3
Input Power Factor (%)	95.9
Input Current THD (%)	22.0
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

*NOTE:

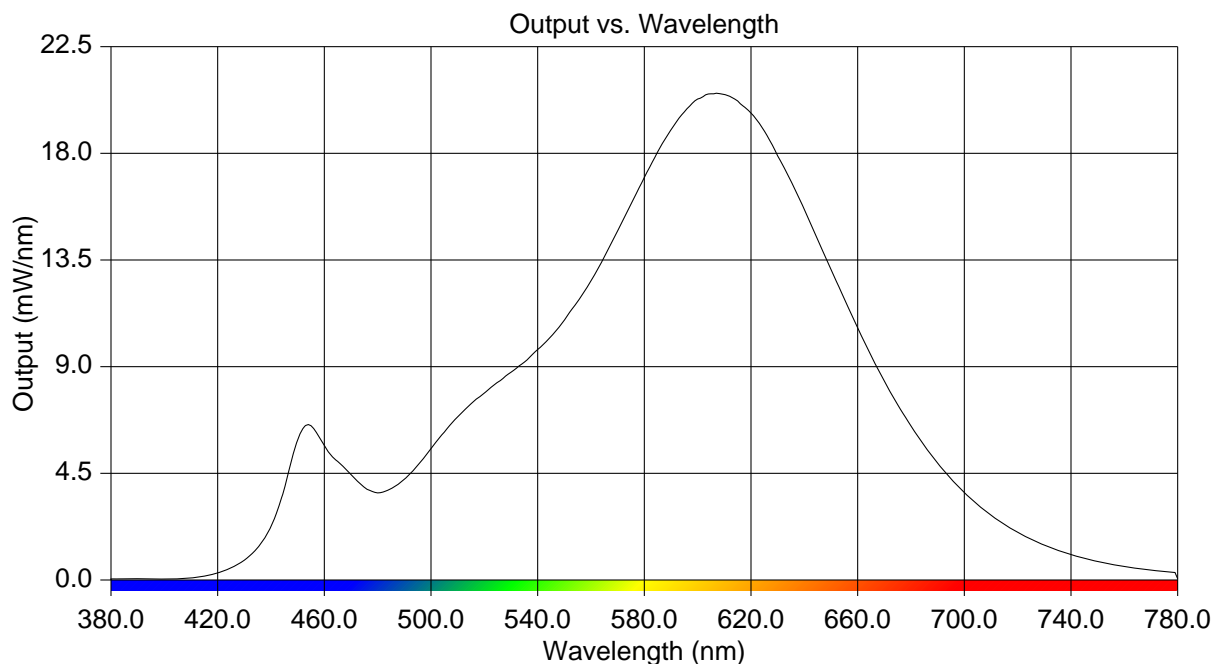
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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.

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.045	515	7.433	650	13.099
385	0.045	520	7.880	655	11.862
390	0.041	525	8.338	660	10.633
395	0.045	530	8.765	665	9.460
400	0.045	535	9.190	670	8.383
405	0.055	540	9.724	675	7.397
410	0.087	545	10.267	680	6.484
415	0.163	550	10.952	685	5.657
420	0.296	555	11.744	690	4.929
425	0.509	560	12.616	695	4.280
430	0.835	565	13.607	700	3.692
435	1.365	570	14.730	705	3.180
440	2.256	575	15.858	710	2.733
445	3.887	580	16.983	715	2.342
450	5.923	585	18.058	720	2.011
455	6.510	590	18.991	725	1.716
460	5.656	595	19.748	730	1.468
465	5.003	600	20.291	735	1.256
470	4.441	605	20.511	740	1.070
475	3.904	610	20.491	745	0.911
480	3.674	615	20.210	750	0.781
485	3.854	620	19.701	755	0.669
490	4.238	625	18.963	760	0.572
495	4.831	630	17.892	765	0.489
500	5.539	635	16.837	770	0.418
505	6.238	640	15.628	775	0.359
510	6.894	645	14.366	780	0.054



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CIE Chromaticity Diagram

