

REPORT NUMBER: PRORATED FROM RAB02635

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ISSUE DATE: 12/15/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: SHARK8-100YNW/480/D10, SHARK8-100YNW/347/D10

LUMINAIRE: FABRICATED WHITE PLASTIC HOUSING, PERFORATED WHITE METAL HEAT SINK, 4 WHITE CIRCUIT BOARDS EACH WITH 64 LEDS, FROSTED POLYCARBONATE LENS ENCLOSURE.

LAMPS: TWO HUNDRED AND FIFTY SIX WHITE EMITTING DIODES (LEDs), TILTED 15-DEGREE FROM VERTICAL BASE-UP POSITION.

TOTAL INPUT WATTS = 98.1 AT 480.0 VOLTS

LED DRIVERS: 2 X RD-H0650A1810-480

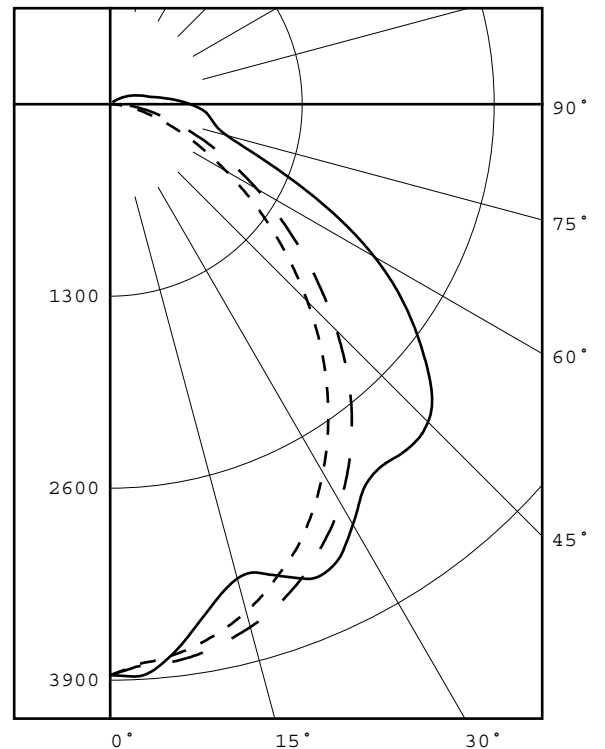
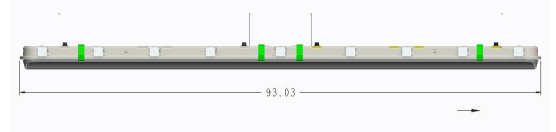
(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0
0	3866	3866	3866	3866	3866
5	3776	3829	3819	3861	3810
15	3557	3376	3326	3438	3666
25	3154	3161	3485	3241	3341
35	2575	3041	3080	3182	2842
45	1889	2535	3043	2691	2170
55	1210	2243	2466	2452	1465
65	660	1491	1575	1705	863
75	286	761	817	881	428
85	65	435	652	509	147
90	4	347	540	410	56
95	4	270	409	321	39
105	4	123	226	153	26
115	4	47	130	63	16
125	4	14	49	19	11
135	5	9	14	11	7
145	7	7	9	7	7
155	7	5	7	5	7
165	7	5	5	4	7
175	7	5	5	5	7
180	5	5	5	5	5

FLUX

359
975
1507
1852
2027
1907
1382
780
474
279
134
62
21
8
5
3
1
0



LEGEND:

0-deg: - - - - -
 90-deg: — — — — —
 180-deg: - . - . - .

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	2841	24.1
0- 40	4693	39.9
0- 60	8627	73.3
0- 90	11263	95.6
90-120	475	4.0
90-130	496	4.2
90-150	509	4.3
90-180	514	4.4
0-180	11777	100.0

TOTAL INPUT WATTS = 98.1

EFFICACY = 120.1 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG 180-DEG

SPACING CRITERIA : 1.1 1.3 1.2

Checked X.CAO
 Approved D.WANG-MUNSON

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ADDITIONAL INFORMATION

THIS REPORT WAS PRORATED FROM RAB TEST NUMBER 2635 WHICH WAS A 4' (128 LED) LUMINAIRE. THE DATA WAS DOUBLED TO REPRESENT AN 8' LUMINAIRE WITH 256 LEDS AND USING TWO OF THE SAME DRIVERS AS WAS USED FOR THE 4' TEST. ACTUAL PERFORMANCE MAY VARY.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 28.25 FEET

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PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 92.3 X 122.5 DEGREES
FIELD ANGLE (10%): 147.9 X 191.5 DEGREES

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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 96.060 5.150
HEIGHT OF SIDE : 1.860 1.860

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 90-DEG	AVERAGE 180-DEG
45	8208.	9903.	9428.
55	6431.	8884.	7782.
65	4693.	6578.	6141.
75	3227.	4213.	4830.
85	1910.	4572.	4335.

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ZONAL LUMEN SUMMARY

0- 5	92.
5- 10	267.
10- 15	419.
15- 20	556.
20- 25	693.
25- 30	814.
30- 35	897.
35- 40	955.
40- 45	1003.
45- 50	1025.
50- 55	996.
55- 60	911.
60- 65	775.
65- 70	607.
70- 75	447.
75- 80	333.
80- 85	263.
85- 90	211.
90- 95	163.
95-100	116.
100-105	79.
105-110	55.
110-115	38.
115-120	24.
120-125	14.
125-130	7.
130-135	5.
135-140	3.
140-145	3.
145-150	2.
150-155	1.
155-160	1.
160-165	1.
165-170	1.
170-175	0.
175-180	0.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	92
5- 10	267
10- 15	419
15- 20	556
20- 25	693
25- 30	814
30- 35	897
35- 40	955
40- 45	1003
45- 50	1025
50- 55	996
55- 60	911
60- 65	775
65- 70	607
70- 75	447
75- 80	333
80- 85	263
85- 90	211
90- 95	163
95-100	116
100-105	79
105-110	55
110-115	38
115-120	24
120-125	14
125-130	7
130-135	5
135-140	3
140-145	3
145-150	2
150-155	1
155-160	1
160-165	1
165-170	1
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	359
0- 20	1335
0- 30	2841
0- 40	4693
0- 50	6721
0- 60	8627
0- 70	10009
0- 80	10789
0- 90	11263
0-100	11542
0-110	11676
0-120	11739
0-130	11760
0-140	11768
0-150	11772
0-160	11775
0-170	11777
0-180	11777

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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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96
1	107	102	97	93	104	99	95	91	94	90	87	89	86	84	85	83	81	78
2	97	88	81	75	94	86	79	74	82	76	71	78	73	69	74	70	67	65
3	88	77	69	62	85	75	67	61	72	65	60	68	63	58	65	60	56	54
4	81	68	59	52	78	67	58	52	63	56	50	61	54	49	58	53	48	46
5	74	61	52	45	71	59	51	44	57	49	43	54	48	43	52	46	42	39
6	68	55	45	39	66	53	45	39	51	43	38	49	42	37	47	41	36	34
7	63	49	40	34	61	48	40	34	46	39	33	45	38	33	43	37	32	30
8	59	45	36	30	57	44	36	30	42	35	30	41	34	29	39	33	29	27
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	36	30	26	24
10	51	38	30	25	50	37	30	24	36	29	24	35	28	24	34	28	23	22

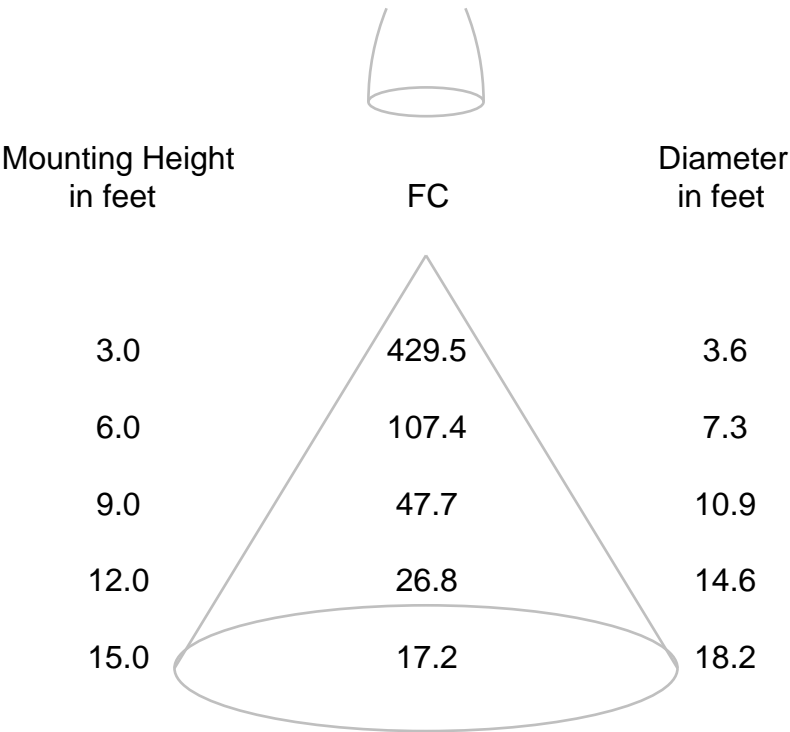
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE
BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES
ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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CONE OF LIGHT DIAGRAM

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



Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.

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DATE: 12/14/2016
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: SHARK8-100YNW/480/D10, SHARK8-100YNW/347/D10

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: FABRICATED WHITE PLASTIC HOUSING, PERFORATED WHITE METAL HEAT SINK, 4 WHITE CIRCUIT BOARDS EACH WITH 64 LEDS, FROSTED POLYCARBONATE LENS ENCLOSURE.

LAMP: TWO HUNDRED AND FIFTY SIX WHITE EMITTING DIODES (LEDs), TILTED 15-DEGREE FROM VERTICAL BASE-UP POSITION.

DRIVER: 2 X RD-H0650A1810-480

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (480.0 AND 347.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	2/26/17
	OCEAN OPTICS QE65PRO Spectroradiometer	12/05/17
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	12/05/17

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 (347.0 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)	11777 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4062
Chromaticity Ordinate y	0.3905
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2364
Chromaticity Ordinate v'	0.5113
Correlated Color Temp CCT (K)	3479
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	33851 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.230
Input Power (Watts)	98.1
Input Power Factor (%)	89.0
Input Current THD (%)	15.7
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
	120.1
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.281
Input Power (Watts)	94.9
Input Power Factor (%)	97.3
Input Current THD (%)	7.5
Input Voltage THD (%)	0.1
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	75
R1 Light greyish red	72
R2 Dark greyish yellow	84
R3 Strong yellowish green	94
R4 Moderate yellowish green	72
R5 Light bluish green	72
R6 Light blue	78
R7 Light violet	80
R8 Light reddish purple	49
R9 Strong red	-25
R10 Strong yellow	63
R11 Strong green	69
R12 Strong blue	53
R13 Light yellowish pink (skin)	74
R14 Moderate olive green (leaf)	97

*NOTE:

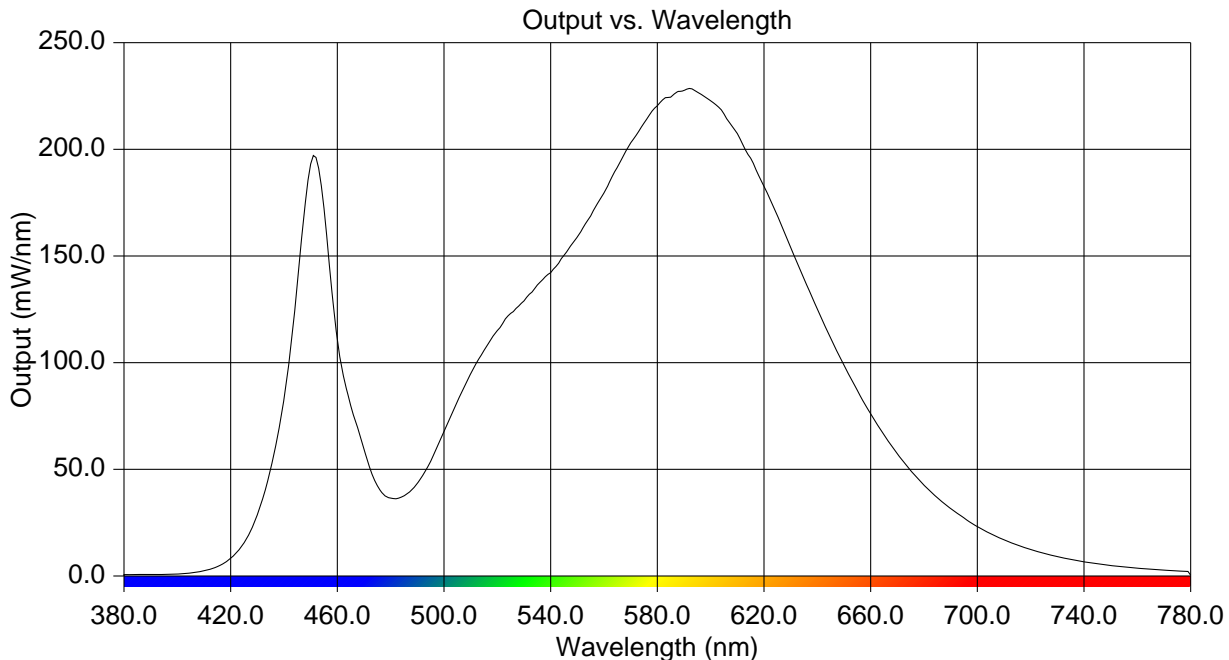
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.630	515	105.731	650	98.699
385	0.692	520	114.880	655	87.030
390	0.678	525	123.101	660	76.119
395	0.755	530	128.951	665	66.092
400	0.923	535	136.404	670	57.224
405	1.431	540	142.183	675	49.417
410	2.376	545	150.319	680	42.608
415	4.391	550	159.014	685	36.774
420	8.326	555	168.758	690	31.647
425	15.499	560	179.671	695	27.231
430	28.793	565	191.586	700	23.123
435	50.540	570	203.043	705	19.749
440	82.772	575	212.304	710	16.935
445	136.920	580	220.429	715	14.534
450	193.122	585	224.444	720	12.458
455	172.381	590	227.620	725	10.631
460	110.659	595	226.824	730	9.069
465	79.948	600	222.786	735	7.765
470	59.405	605	216.589	740	6.654
475	42.338	610	207.393	745	5.715
480	36.557	615	195.849	750	4.951
485	37.603	620	182.526	755	4.249
490	43.482	625	169.107	760	3.660
495	53.746	630	153.927	765	3.171
500	67.774	635	139.341	770	2.732
505	81.737	640	124.952	775	2.370
510	94.834	645	111.594	780	0.359



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CIE Chromaticity Diagram

