

REPORT NUMBER: PRORATED FROM RAB02635

ISSUE DATE: 10/25/16

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: SHARK8-100W/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 = 96.2 AT 277.0 VOLTS

LED DRIVERS: 2 X RD-052-A1050-C-089C

(SEE PAGE 2 FOR MORE INFORMATION)

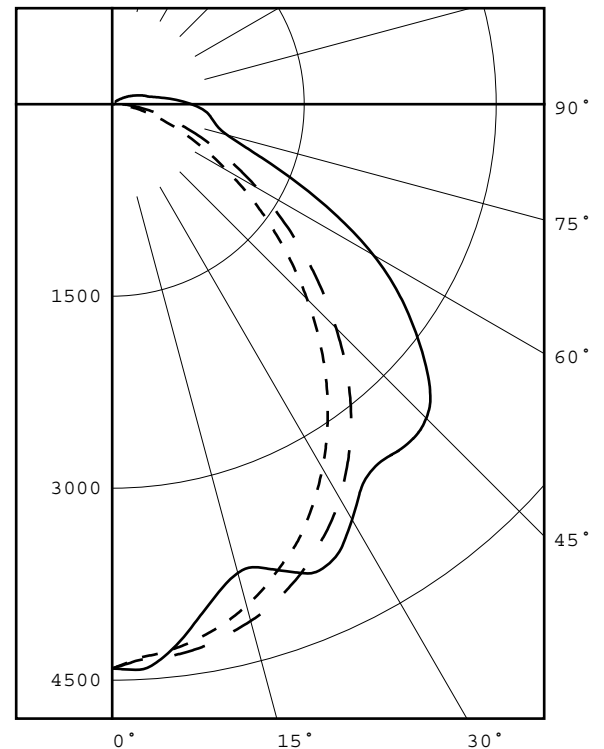
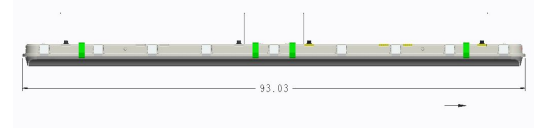
PAGE: 1 OF 8

DATE SAMPLE TESTED: 10/25/16

CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0
0	4408	4408	4408	4408	4408
5	4306	4366	4354	4402	4344
15	4056	3850	3792	3920	4180
25	3596	3604	3974	3696	3810
35	2936	3468	3512	3628	3240
45	2154	2890	3470	3068	2474
55	1380	2558	2812	2796	1670
65	752	1700	1796	1944	984
75	326	868	932	1004	488
85	74	496	744	580	168
90	4	396	616	468	64
95	4	308	466	366	44
105	4	140	258	174	30
115	4	54	148	72	18
125	4	16	56	22	12
135	6	10	16	12	8
145	8	8	10	8	8
155	8	6	8	6	8
165	8	6	6	4	8
175	8	6	6	6	8
180	6	6	6	6	6

FLUX



LEGEND:

0-deg: - - - - -
90-deg: _____
180-deg: - . - . - .

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	3240	24.1
0- 40	5351	39.9
0- 60	9837	73.3
0- 90	12843	95.6
90-120	542	4.0
90-130	566	4.2
90-150	581	4.3
90-180	586	4.4
0-180	13429	100.0

TOTAL INPUT WATTS = 96.2

EFFICACY = 139.6 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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PAGE: 2 OF 8
DATE SAMPLE TESTED: 10/25/16

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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PAGE: 3 OF 8
DATE SAMPLE TESTED: 10/25/16

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

REPORT NUMBER: PRORATED FROM RAB02635
ISSUE DATE: 10/25/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 5 OF 8
DATE SAMPLE TESTED: 10/25/16

ZONAL LUMEN SUMMARY

0- 5	105.
5- 10	305.
10- 15	478.
15- 20	634.
20- 25	790.
25- 30	928.
30- 35	1023.
35- 40	1088.
40- 45	1144.
45- 50	1168.
50- 55	1135.
55- 60	1039.
60- 65	884.
65- 70	693.
70- 75	510.
75- 80	380.
80- 85	300.
85- 90	240.
90- 95	186.
95-100	132.
100-105	90.
105-110	63.
110-115	43.
115-120	28.
120-125	16.
125-130	8.
130-135	5.
135-140	4.
140-145	3.
145-150	2.
150-155	2.
155-160	1.
160-165	1.
165-170	1.
170-175	0.
175-180	0.

REPORT NUMBER: PRORATED FROM RAB02635
ISSUE DATE: 10/25/16
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PAGE: 6 OF 8
DATE SAMPLE TESTED: 10/25/16

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	105
5- 10	305
10- 15	478
15- 20	634
20- 25	790
25- 30	928
30- 35	1023
35- 40	1088
40- 45	1144
45- 50	1168
50- 55	1135
55- 60	1039
60- 65	884
65- 70	693
70- 75	510
75- 80	380
80- 85	300
85- 90	240
90- 95	186
95-100	132
100-105	90
105-110	63
110-115	43
115-120	28
120-125	16
125-130	8
130-135	5
135-140	4
140-145	3
145-150	2
150-155	2
155-160	1
160-165	1
165-170	1
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	410
0- 20	1522
0- 30	3240
0- 40	5351
0- 50	7663
0- 60	9837
0- 70	11413
0- 80	12302
0- 90	12843
0-100	13161
0-110	13314
0-120	13385
0-130	13409
0-140	13418
0-150	13423
0-160	13426
0-170	13428
0-180	13429

REPORT NUMBER: PRORATED FROM RAB02635
 ISSUE DATE: 10/25/16

PAGE: 7 OF 8
 DATE SAMPLE TESTED: 10/25/16

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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	24	22

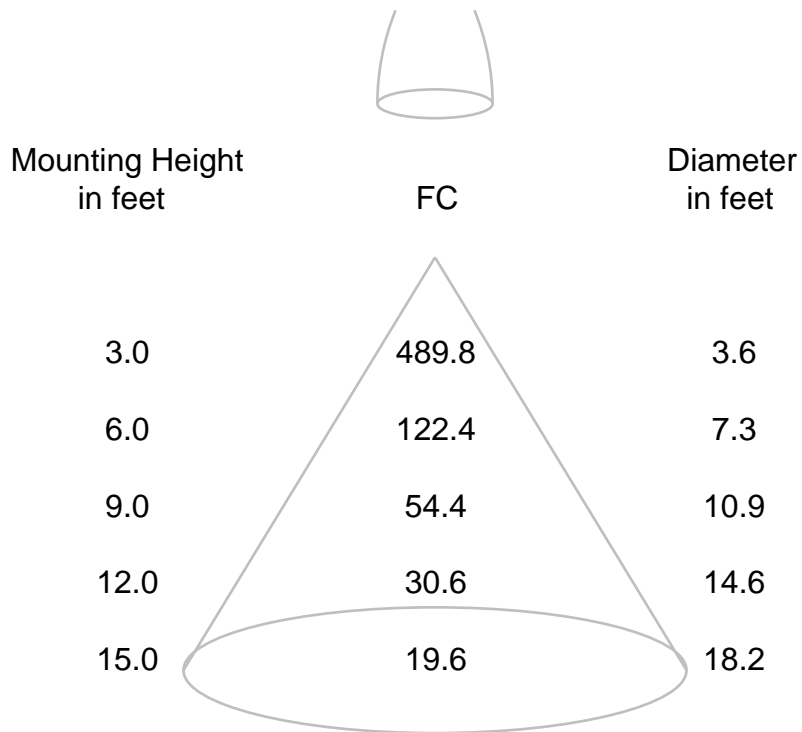
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE
 BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES
 ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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ISSUE DATE: 10/25/16
PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 8
DATE SAMPLE TESTED: 10/25/16

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: 11/17/2016
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CATALOG NUMBER: SHARK8-100W/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-052-A1050-C-089C

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:
	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	11/14/17

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 (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 X.CAO

Approved D.WANG-MUNSON
Lighting Engineer

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 CATALOG NUMBER: SHARK8-100W/D10

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	13429 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3445
Chromaticity Ordinate y	0.3533
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2104
Chromaticity Ordinate v'	0.4854
Correlated Color Temp CCT (K)	5028
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	40428 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.362
Input Power (Watts)	95.5
Input Power Factor (%)	95.2
Input Current THD (%)	10.4
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
	140.6
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.797
Input Power (Watts)	95.0
Input Power Factor (%)	99.3
Input Current THD (%)	7.2
Input Voltage THD (%)	0.1
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	77
R1 Light greyish red	74
R2 Dark greyish yellow	82
R3 Strong yellowish green	88
R4 Moderate yellowish green	77
R5 Light bluish green	75
R6 Light blue	75
R7 Light violet	83
R8 Light reddish purple	58
R9 Strong red	-21
R10 Strong yellow	57
R11 Strong green	75
R12 Strong blue	52
R13 Light yellowish pink (skin)	75
R14 Moderate olive green (leaf)	93

*NOTE:

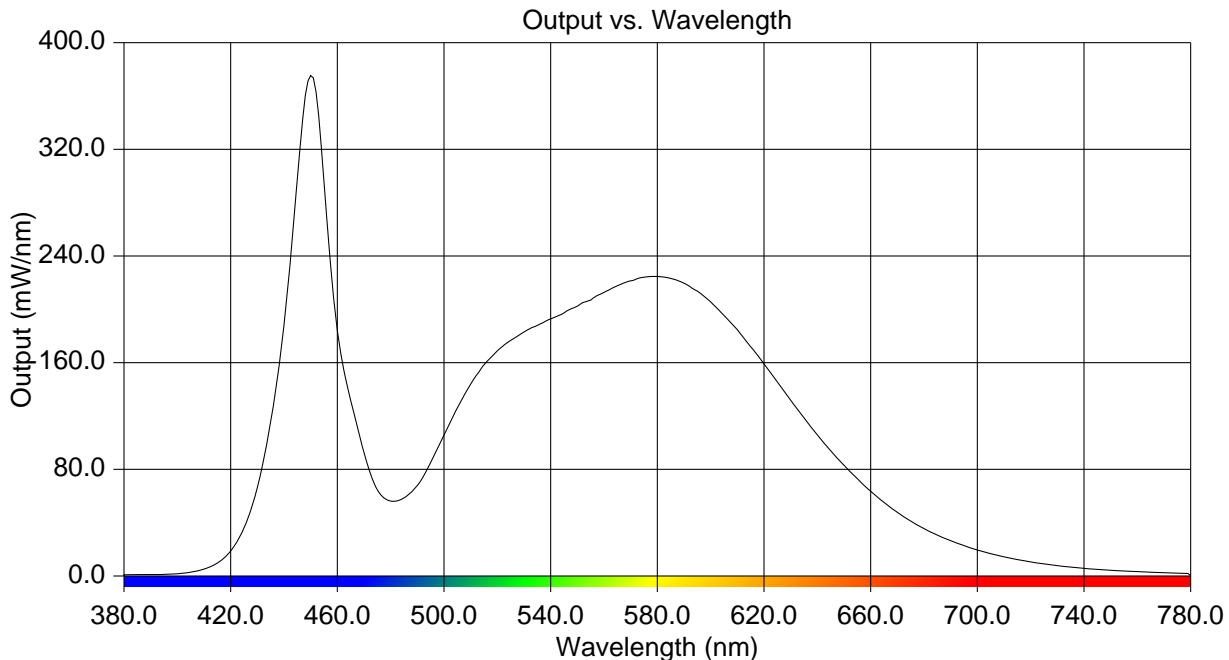
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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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Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.879	515	158.585	650	82.946
385	0.938	520	168.873	655	73.032
390	1.010	525	176.696	660	63.547
395	1.260	530	182.992	665	55.144
400	1.705	535	187.977	670	47.673
405	2.785	540	192.968	675	41.121
410	5.139	545	197.269	680	35.494
415	9.683	550	202.307	685	30.666
420	18.738	555	206.910	690	26.412
425	36.135	560	212.748	695	22.845
430	66.329	565	217.757	700	19.472
435	115.322	570	221.341	705	16.670
440	188.776	575	224.081	710	14.252
445	297.846	580	224.623	715	12.281
450	375.349	585	223.211	720	10.590
455	295.560	590	219.575	725	9.074
460	184.218	595	213.675	730	7.806
465	131.751	600	205.590	735	6.676
470	92.484	605	195.412	740	5.723
475	64.711	610	184.745	745	4.945
480	56.198	615	171.939	750	4.278
485	58.458	620	159.095	755	3.685
490	67.958	625	145.569	760	3.221
495	85.141	630	131.678	765	2.787
500	105.639	635	118.389	770	2.415
505	126.191	640	105.712	775	2.105
510	143.607	645	94.171	780	0.317



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CATALOG NUMBER: SHARK8-100W/D10

Page 4 of 4

CIE Chromaticity Diagram

