

REPORT NUMBER: RAB00905

ISSUE DATE: 05/22/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCORA80W

LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO OPPOSING LIGHT HEADS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 16 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

LAMPS: THIRTY TWO WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), TILTED 15-DEGREES FROM VERTICAL BASE-UP POSITION.

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

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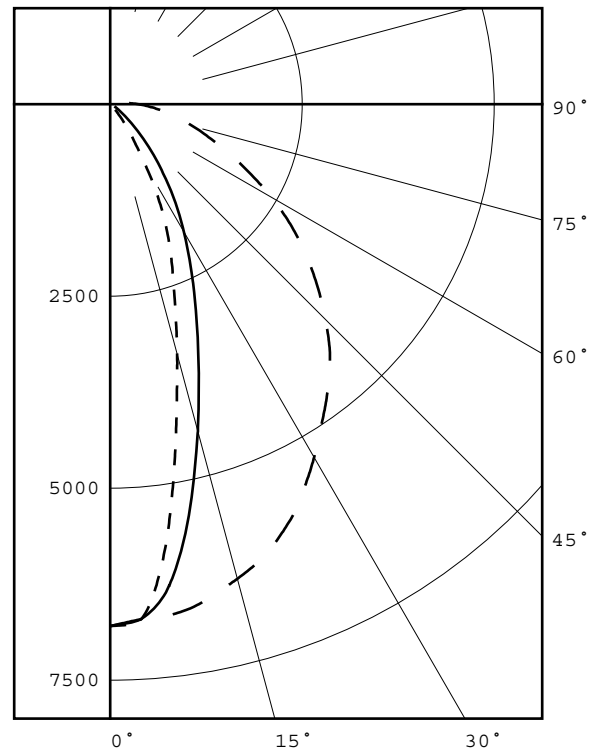
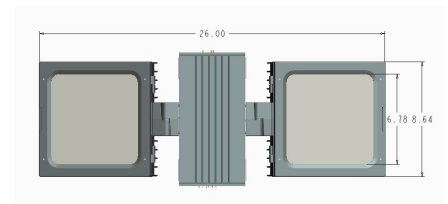
DATE SAMPLE TESTED: 05/22/15

### CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	6794	6794	6794	6794	6794
5	6420	6449	6588	6663	6723
15	3371	3585	4409	5779	6397
25	1689	1880	2547	4176	5775
35	417	612	1383	2782	4865
45	77	121	538	1770	3960
55	42	54	155	1047	2954
65	27	32	56	531	1901
75	14	18	29	223	1121
85	3	7	16	94	577
90	0	4	10	57	362
95	0	2	5	28	186
105	0	2	0	0	1
115	0	2	0	0	0
125	0	2	1	0	0
135	0	2	1	1	1
145	1	3	3	1	1
155	1	4	3	1	0
165	3	5	3	0	0
175	4	6	4	1	0
180	4	4	4	4	4

### FLUX

598
1303
1413
1171
869
620
397
225
113
37
2
0
1
1
1
1
1
0
0



LEGEND:

0-deg: - - - - -  
45-deg: - - - - -  
90-deg: - - - - -

### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	3313	49.1
0- 40	4484	66.4
0- 60	5972	88.5
0- 90	6706	99.4
90-120	39	0.6
90-130	40	0.6
90-150	42	0.6
90-180	44	0.6
0-180	6750	100.0

TOTAL INPUT WATTS = 78.9

EFFICACY = 85.6 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 0.5 1.2

Checked X.CAO  
Approved D.WANG-MUNSON

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ADDITIONAL INFORMATION

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.  
TOTAL INPUT WATTS =78.867 AT 120.0 VAC.  
LED DRIVER: RD-075-A1400  
TEST PROCEDURE: IESNA LM-79-08  
ACCREDITED LABORATORY CODE 201058-0

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PLANE : 0-DEG 90-DEG  
BEAM ANGLE (50%) : 29.8 X 101.3 DEGREES  
FIELD ANGLE (10%): 64.0 X 165.9 DEGREES

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### CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	6794	6794	6794	6794	6794
5.0	6420	6449	6588	6663	6723
10.0	4807	4994	5661	6364	6614
15.0	3371	3585	4409	5779	6397
20.0	2391	2585	3350	4992	6142
25.0	1689	1880	2547	4176	5775
30.0	932	1216	1917	3431	5310
35.0	417	612	1383	2782	4865
40.0	154	280	919	2259	4451
45.0	77	121	538	1770	3960
50.0	57	73	292	1371	3461
55.0	42	54	155	1047	2954
60.0	33	41	86	775	2424
65.0	27	32	56	531	1901
70.0	20	25	40	346	1464
75.0	14	18	29	223	1121
80.0	8	12	21	146	829
85.0	3	7	16	94	577
90.0	0	4	10	57	362
95.0	0	2	5	28	186
100.0	0	2	0	7	55
105.0	0	2	0	0	1
110.0	0	2	0	0	0
115.0	0	2	0	0	0
120.0	0	2	0	0	0
125.0	0	2	1	0	0
130.0	0	2	1	0	0
135.0	0	2	1	1	1
140.0	0	2	2	1	1
145.0	1	3	3	1	1
150.0	1	3	3	1	0
155.0	1	4	3	1	0
160.0	2	4	3	0	0
165.0	3	5	3	0	0
170.0	3	5	3	0	0
175.0	4	6	4	1	0
180.0	4	4	4	4	4

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ZONAL LUMEN SUMMARY

0- 5	160.
5- 10	438.
10- 15	609.
15- 20	693.
20- 25	718.
25- 30	695.
30- 35	625.
35- 40	546.
40- 45	469.
45- 50	399.
50- 55	338.
55- 60	281.
60- 65	225.
65- 70	172.
70- 75	129.
75- 80	96.
80- 85	68.
85- 90	45.
90- 95	26.
95-100	11.
100-105	2.
105-110	0.
110-115	0.
115-120	0.
120-125	0.
125-130	0.
130-135	0.
135-140	0.
140-145	1.
145-150	1.
150-155	0.
155-160	0.
160-165	0.
165-170	0.
170-175	0.
175-180	0.

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### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	160
5- 10	438
10- 15	609
15- 20	693
20- 25	718
25- 30	695
30- 35	625
35- 40	546
40- 45	469
45- 50	399
50- 55	338
55- 60	281
60- 65	225
65- 70	172
70- 75	129
75- 80	96
80- 85	68
85- 90	45
90- 95	26
95-100	11
100-105	2
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
140-145	1
145-150	1
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	598
0- 20	1900
0- 30	3313
0- 40	4484
0- 50	5352
0- 60	5972
0- 70	6369
0- 80	6593
0- 90	6706
0-100	6743
0-110	6745
0-120	6746
0-130	6746
0-140	6747
0-150	6748
0-160	6749
0-170	6750
0-180	6750

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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	101	101	101	99
1	111	107	103	100	108	105	102	99	100	98	95	96	94	92	93	91	90	88
2	103	96	91	86	101	95	90	85	91	87	83	88	84	81	85	82	80	78
3	96	88	81	76	94	86	80	75	83	78	74	80	76	72	78	74	71	69
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	62
5	84	74	66	61	82	72	66	60	70	64	60	69	63	59	67	62	58	57
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52
7	74	63	56	51	73	62	55	50	61	55	50	59	54	50	58	53	49	48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	49	46	44
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	42	41
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	48	43	40	38

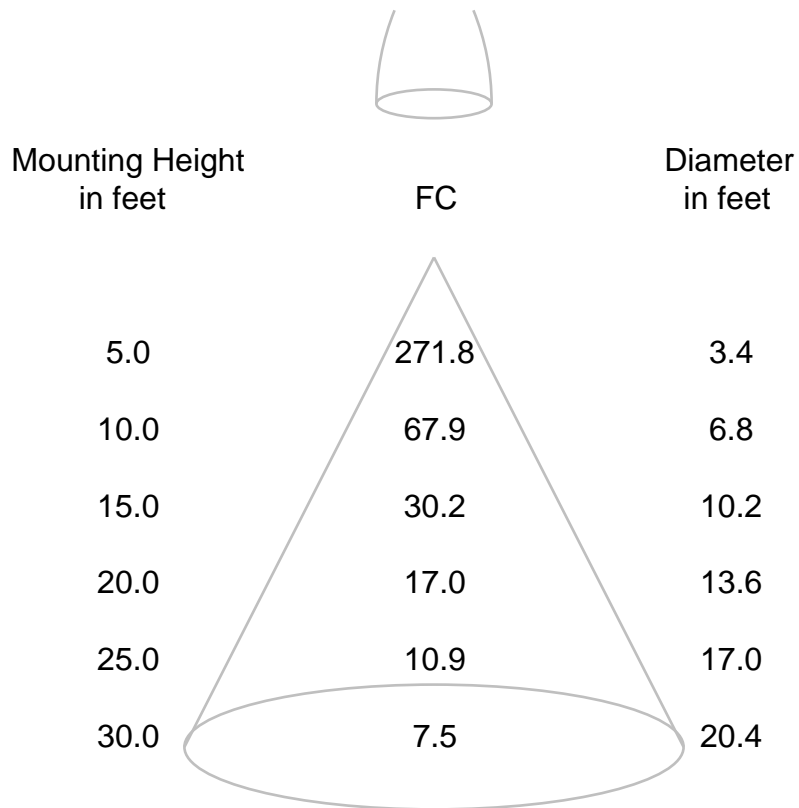
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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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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ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO OPPOSING LIGHT HEADS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 16 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

LAMP: THIRTY TWO WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), TILTED 15-DEGREES FROM VERTICAL BASE-UP POSITION.

DRIVER: RD-075-A1400

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

INSTRUMENTS:	CHROMA PROGRAMMABLE AC POWER SOURCE MODEL 61602	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/9/16
	OCEAN OPTICS QE65PRO Spectroradiometer	5/15/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	5/15/16

OBJECT OF TEST: Measure the Absolute Flux in lumens\*, 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. 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 (277.0 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)	6750 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3404
Chromaticity Ordinate y	0.3470
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2100
Chromaticity Ordinate v'	0.4817
Correlated Color Temp CCT (K)	5171
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	21127 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.660
Input Power (Watts)	78.9
Input Power Factor (%)	99.6
Input Current THD (%)	5.0
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	85.6
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.295
Input Power (Watts)	77.2
Input Power Factor (%)	94.5
Input Current THD (%)	10.0
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	73
R2 Dark greyish yellow	74
R3 Strong yellowish green	75
R4 Moderate yellowish green	74
R5 Light bluish green	74
R6 Light blue	67
R7 Light violet	76
R8 Light reddish purple	62
R9 Strong red	-13
R10 Strong yellow	39
R11 Strong green	76
R12 Strong blue	50
R13 Light yellowish pink (skin)	71
R14 Moderate olive green (leaf)	85

### \*NOTE:

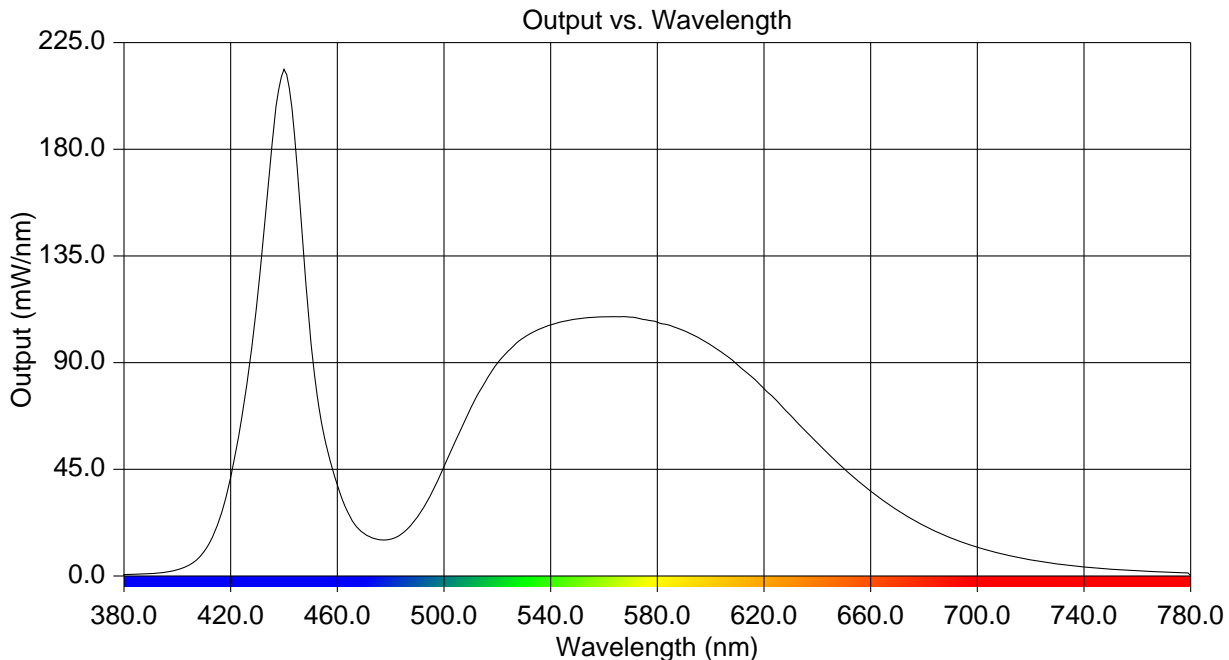
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.594	515	80.988	650	45.298
385	0.762	520	89.730	655	40.438
390	1.007	525	95.850	660	35.854
395	1.524	530	100.693	665	31.581
400	2.617	535	103.731	670	27.837
405	4.940	540	106.080	675	24.287
410	10.288	545	107.445	680	21.179
415	21.243	550	108.419	685	18.538
420	41.613	555	109.125	690	16.086
425	72.925	560	109.250	695	13.992
430	116.775	565	109.431	700	12.112
435	176.587	570	109.181	705	10.492
440	213.742	575	108.205	710	9.104
445	171.519	580	107.054	715	7.847
450	99.843	585	105.626	720	6.815
455	59.385	590	103.484	725	5.915
460	38.353	595	100.882	730	5.086
465	24.592	600	97.394	735	4.425
470	17.868	605	93.773	740	3.834
475	15.482	610	89.177	745	3.308
480	15.494	615	84.439	750	2.890
485	18.545	620	78.996	755	2.498
490	24.824	625	73.685	760	2.183
495	34.177	630	67.751	765	1.891
500	46.213	635	61.963	770	1.657
505	58.659	640	56.083	775	1.438
510	70.685	645	50.596	780	0.219



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## CIE Chromaticity Diagram

