

REPORT NUMBER: RAB00909

PAGE: 1 OF 8

ISSUE DATE: 05/26/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCORA80YW

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.

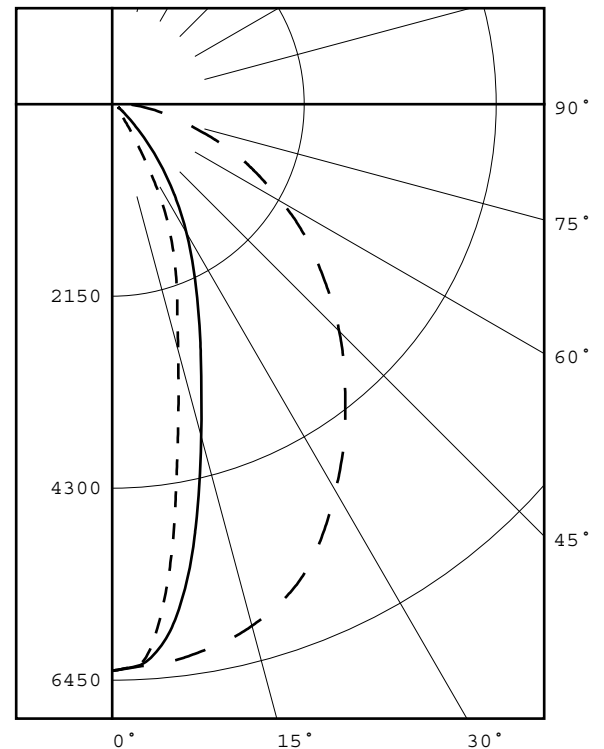
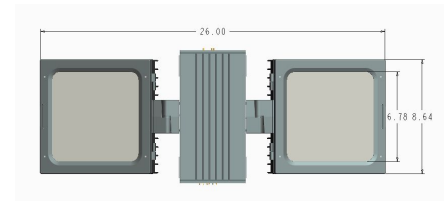
(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	6345	6345	6345	6345	6345
5	5872	5979	6109	6222	6288
15	2851	3076	3850	5362	6047
25	1488	1665	2204	3755	5459
35	336	503	1181	2368	4539
45	79	132	434	1477	3595
55	43	54	148	864	2670
65	29	37	68	404	1746
75	17	22	35	147	891
85	4	9	21	67	342
90	0	5	16	46	174
95	0	2	8	29	76
105	0	2	0	0	0
115	0	2	0	0	0
125	0	2	0	0	0
135	0	2	1	1	1
145	0	2	2	1	1
155	1	3	3	1	0
165	2	4	3	0	0
175	3	5	4	1	0
180	3	3	3	3	3

FLUX

552
1173
1269
1027
757
545
348
179
76
22
2
0
1
1
1
1
1
0



LEGEND:

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

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	2994	50.3
0- 40	4021	67.5
0- 60	5323	89.4
0- 90	5926	99.5
90-120	24	0.4
90-130	25	0.4
90-150	27	0.4
90-180	28	0.5
0-180	5954	100.0

TOTAL INPUT WATTS = 81.9

EFFICACY = 72.7 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 0.4 1.2

Checked X.CAO
Approved D.WANG-MUNSON

REPORT NUMBER: RAB00909
ISSUE DATE: 05/26/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 8

ADDITIONAL INFORMATION

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
TOTAL INPUT WATTS =81.946 AT 120.0 VAC.
LED DRIVER: RD-075-A1400
TEST PROCEDURE: IESNA LM-79-08
ACCREDITED LABORATORY CODE 201058-0

REPORT NUMBER: RAB00909
ISSUE DATE: 05/26/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 3 OF 8

PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 27.2 X 98.9 DEGREES
FIELD ANGLE (10%): 62.6 X 158.2 DEGREES

REPORT NUMBER: RAB00909
 ISSUE DATE: 05/26/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 4 OF 8

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	6345	6345	6345	6345	6345
5.0	5872	5979	6109	6222	6288
10.0	4166	4459	5138	5912	6191
15.0	2851	3076	3850	5362	6047
20.0	2104	2259	2891	4574	5821
25.0	1488	1665	2204	3755	5459
30.0	778	1047	1668	2999	5000
35.0	336	503	1181	2368	4539
40.0	160	249	767	1872	4054
45.0	79	132	434	1477	3595
50.0	53	74	244	1155	3119
55.0	43	54	148	864	2670
60.0	36	45	97	615	2195
65.0	29	37	68	404	1746
70.0	23	30	50	243	1307
75.0	17	22	35	147	891
80.0	11	15	26	99	582
85.0	4	9	21	67	342
90.0	0	5	16	46	174
95.0	0	2	8	29	76
100.0	0	2	1	10	26
105.0	0	2	0	0	0
110.0	0	2	0	0	0
115.0	0	2	0	0	0
120.0	0	1	0	0	0
125.0	0	2	0	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	0	2	2	1	1
150.0	1	3	2	1	0
155.0	1	3	3	1	0
160.0	2	4	2	0	0
165.0	2	4	3	0	0
170.0	3	5	3	0	0
175.0	3	5	4	1	0
180.0	3	3	3	3	3

REPORT NUMBER: RAB00909
ISSUE DATE: 05/26/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 5 OF 8

ZONAL LUMEN SUMMARY

0- 5	149.
5- 10	403.
10- 15	551.
15- 20	623.
20- 25	648.
25- 30	621.
30- 35	551.
35- 40	475.
40- 45	409.
45- 50	349.
50- 55	297.
55- 60	248.
60- 65	198.
65- 70	151.
70- 75	106.
75- 80	72.
80- 85	48.
85- 90	29.
90- 95	15.
95-100	7.
100-105	1.
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.

REPORT NUMBER: RAB00909
 ISSUE DATE: 05/26/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 6 OF 8

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	149
5- 10	403
10- 15	551
15- 20	623
20- 25	648
25- 30	621
30- 35	551
35- 40	475
40- 45	409
45- 50	349
50- 55	297
55- 60	248
60- 65	198
65- 70	151
70- 75	106
75- 80	72
80- 85	48
85- 90	29
90- 95	15
95-100	7
100-105	1
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	552
0- 20	1725
0- 30	2994
0- 40	4021
0- 50	4778
0- 60	5323
0- 70	5671
0- 80	5850
0- 90	5926
0-100	5948
0-110	5950
0-120	5951
0-130	5951
0-140	5952
0-150	5953
0-160	5954
0-170	5954
0-180	5954

REPORT NUMBER: RAB00909
ISSUE DATE: 05/26/15

PAGE: 7 OF 8

PREPARED FOR: RAB LIGHTING INC.

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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	80	78
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63
5	85	74	67	61	83	73	66	61	71	65	61	69	64	60	68	63	59	57
6	80	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53
7	75	64	56	51	73	63	56	51	61	55	51	60	55	50	59	54	50	48
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	46	45
9	67	56	49	44	66	55	48	44	54	48	44	53	47	44	52	47	43	42
10	64	52	46	41	62	52	45	41	51	45	41	50	45	41	49	44	41	39

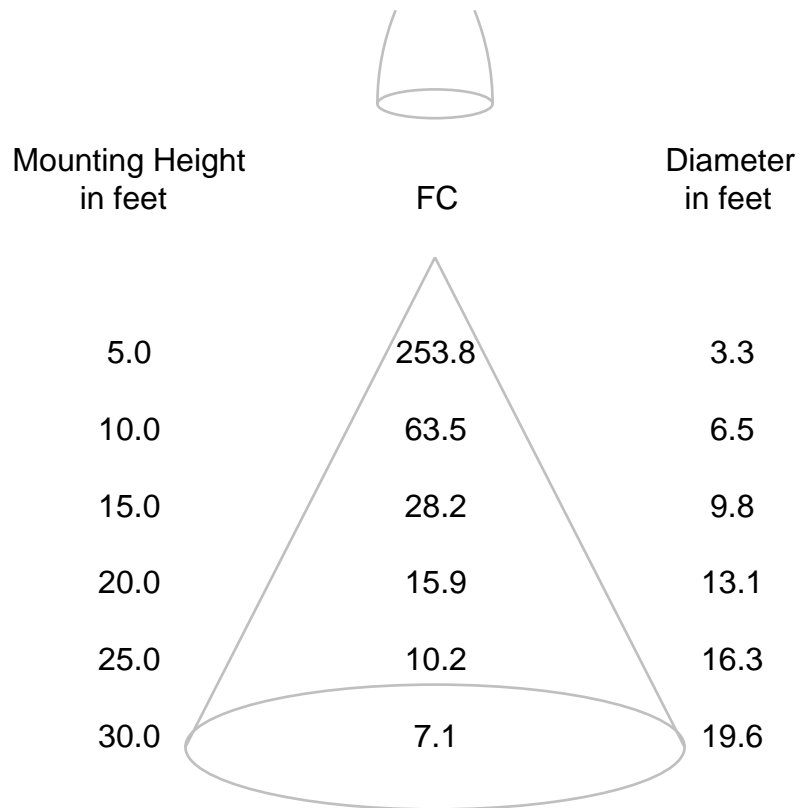
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

REPORT NUMBER: RAB00909
ISSUE DATE: 05/26/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 8

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.

REPORT NUMBER: RAB00910
 DATE: 5/22/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: FALCORA80YW

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 (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 (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 X.CAO

Approved D.WANG-MUNSON
 Lighting Engineer

REPORT NUMBER: RAB00910
 DATE: 5/22/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: FALCORA80YW

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	5954 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4262
Chromaticity Ordinate y	0.3969
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2467
Chromaticity Ordinate v'	0.5169
Correlated Color Temp CCT (K)	3130
ANSI C78.377-2008 Duv	-0.001
Total Radiant Flux (milliWatts)	18276 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.685
Input Power (Watts)	81.9
Input Power Factor (%)	99.6
Input Current THD (%)	4.9
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	72.7
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.304
Input Power (Watts)	80.1
Input Power Factor (%)	95.1
Input Current THD (%)	9.5
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	81
R1 Light greyish red	80
R2 Dark greyish yellow	88
R3 Strong yellowish green	94
R4 Moderate yellowish green	80
R5 Light bluish green	79
R6 Light blue	84
R7 Light violet	84
R8 Light reddish purple	62
R9 Strong red	10
R10 Strong yellow	71
R11 Strong green	77
R12 Strong blue	64
R13 Light yellowish pink (skin)	81
R14 Moderate olive green (leaf)	96

*NOTE:

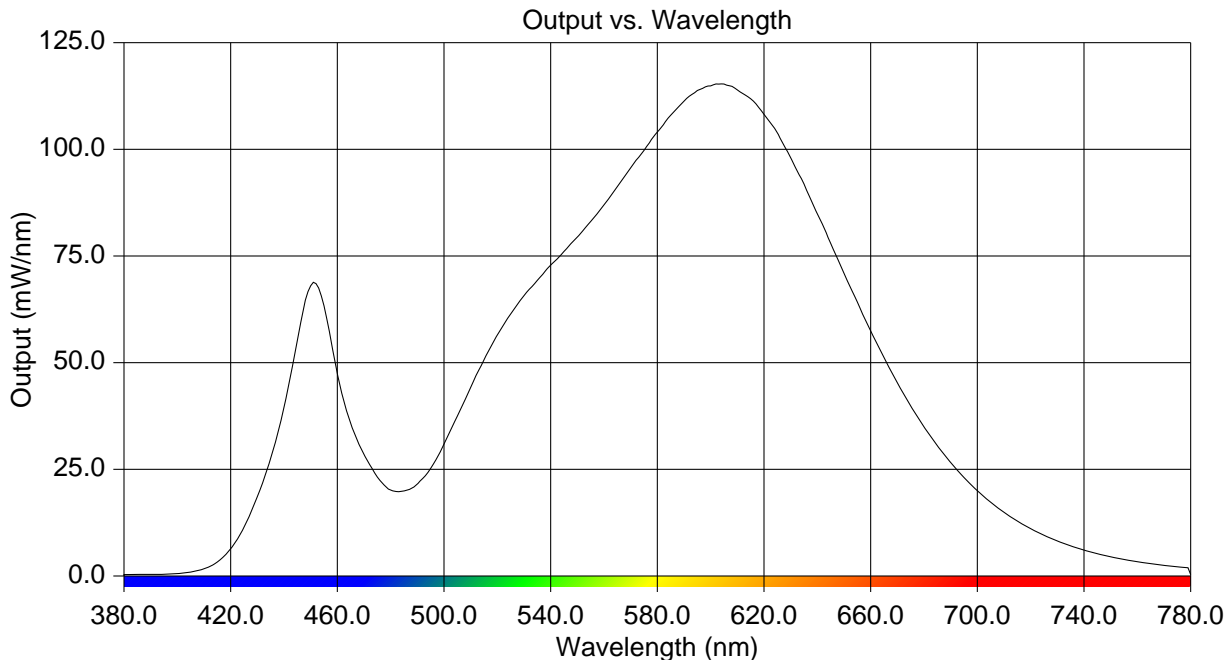
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even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

REPORT NUMBER: RAB00910
 DATE: 5/22/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: FALCORA80YW

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.321	515	50.568	650	70.991
385	0.341	520	56.567	655	64.220
390	0.356	525	61.355	660	57.547
395	0.426	530	65.705	665	51.182
400	0.584	535	69.293	670	45.338
405	0.907	540	72.868	675	39.837
410	1.668	545	76.072	680	34.917
415	3.282	550	79.411	685	30.589
420	6.361	555	83.084	690	26.579
425	11.445	560	86.877	695	23.082
430	18.580	565	91.299	700	19.983
435	27.675	570	95.673	705	17.292
440	39.511	575	99.741	710	14.938
445	55.289	580	104.075	715	12.858
450	68.014	585	107.984	720	11.085
455	63.338	590	111.245	725	9.544
460	47.625	595	113.788	730	8.180
465	35.732	600	114.866	735	7.043
470	28.567	605	115.305	740	6.062
475	23.193	610	113.927	745	5.240
480	20.109	615	111.854	750	4.503
485	19.933	620	108.203	755	3.864
490	21.566	625	103.862	760	3.351
495	25.221	630	98.073	765	2.881
500	30.945	635	91.886	770	2.493
505	37.469	640	84.932	775	2.143
510	44.181	645	77.972	780	0.328



REPORT NUMBER: RAB00910
DATE: 5/22/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FALCORA80YW

Page 4 of 4

CIE Chromaticity Diagram

