

REPORT NUMBER: RAB00907

ISSUE DATE: 05/22/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCORA80NW

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)

PAGE: 1 OF 8

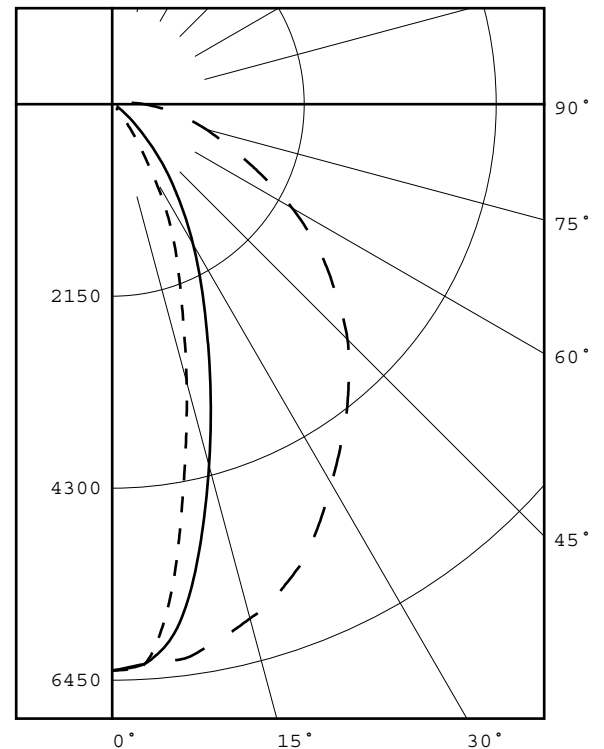
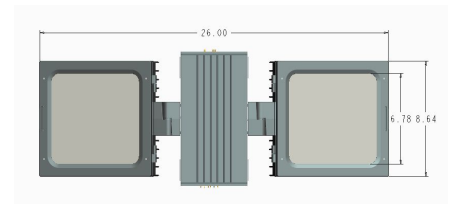
DATE SAMPLE TESTED: 05/22/15

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	6343	6343	6343	6343	6343
5	5992	6027	6154	6214	6274
15	3219	3432	4191	5441	5962
25	1588	1776	2416	3974	5349
35	430	611	1306	2654	4504
45	77	131	532	1693	3726
55	40	51	164	1021	2812
65	24	30	53	526	1820
75	12	16	26	221	1089
85	3	7	15	99	563
90	0	4	10	61	358
95	0	2	5	32	192
105	0	2	0	0	7
115	0	1	0	0	0
125	0	2	0	0	0
135	0	2	1	0	0
145	0	2	2	1	0
155	1	3	2	0	0
165	2	4	3	0	0
175	4	6	4	1	0
180	3	3	3	3	3

FLUX

560
1232
1333
1110
830
598
384
218
112
38
3
0
0
1
1
1
1
0



LEGEND:

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

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	3124	48.7
0- 40	4234	65.9
0- 60	5662	88.2
0- 90	6375	99.3
90-120	42	0.7
90-130	42	0.7
90-150	44	0.7
90-180	45	0.7
0-180	6421	100.0

TOTAL INPUT WATTS = 80.0

EFFICACY = 80.3 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 0.5 1.2

Checked X.CAO
 Approved D.WANG-MUNSON

REPORT NUMBER: RAB00907
ISSUE DATE: 05/22/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 2 OF 8
DATE SAMPLE TESTED: 05/22/15

ADDITIONAL INFORMATION

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
TOTAL INPUT WATTS =79.966 AT 120.0 VAC.
LED DRIVER: RD-075-A1400
TEST PROCEDURE: IESNA LM-79-08
ACCREDITED LABORATORY CODE 201058-0

REPORT NUMBER: RAB00907
ISSUE DATE: 05/22/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 3 OF 8
DATE SAMPLE TESTED: 05/22/15

PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 30.4 X 102.0 DEGREES
FIELD ANGLE (10%): 64.9 X 167.0 DEGREES

REPORT NUMBER: RAB00907
 ISSUE DATE: 05/22/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 4 OF 8
 DATE SAMPLE TESTED: 05/22/15

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	6343	6343	6343	6343	6343
5.0	5992	6027	6154	6214	6274
10.0	4524	4747	5335	5949	6165
15.0	3219	3432	4191	5441	5962
20.0	2246	2451	3202	4732	5708
25.0	1588	1776	2416	3974	5349
30.0	908	1159	1815	3258	4909
35.0	430	611	1306	2654	4504
40.0	171	296	890	2140	4118
45.0	77	131	532	1693	3726
50.0	53	71	300	1319	3255
55.0	40	51	164	1021	2812
60.0	31	39	89	756	2327
65.0	24	30	53	526	1820
70.0	18	23	37	339	1402
75.0	12	16	26	221	1089
80.0	7	11	20	149	808
85.0	3	7	15	99	563
90.0	0	4	10	61	358
95.0	0	2	5	32	192
100.0	0	1	1	9	67
105.0	0	2	0	0	7
110.0	0	1	0	0	0
115.0	0	1	0	0	0
120.0	0	2	0	0	0
125.0	0	2	0	0	0
130.0	0	2	1	0	0
135.0	0	2	1	0	0
140.0	0	2	2	1	1
145.0	0	2	2	1	0
150.0	1	3	2	1	0
155.0	1	3	2	0	0
160.0	2	4	3	0	0
165.0	2	4	3	0	0
170.0	3	5	3	0	0
175.0	4	6	4	1	0
180.0	3	3	3	3	3

REPORT NUMBER: RAB00907
ISSUE DATE: 05/22/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 5 OF 8
DATE SAMPLE TESTED: 05/22/15

ZONAL LUMEN SUMMARY

0- 5	149.
5- 10	411.
10- 15	575.
15- 20	656.
20- 25	678.
25- 30	655.
30- 35	592.
35- 40	518.
40- 45	448.
45- 50	382.
50- 55	326.
55- 60	272.
60- 65	218.
65- 70	166.
70- 75	125.
75- 80	94.
80- 85	67.
85- 90	45.
90- 95	26.
95-100	12.
100-105	3.
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: RAB00907
 ISSUE DATE: 05/22/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 6 OF 8
 DATE SAMPLE TESTED: 05/22/15

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	149
5- 10	411
10- 15	575
15- 20	656
20- 25	678
25- 30	655
30- 35	592
35- 40	518
40- 45	448
45- 50	382
50- 55	326
55- 60	272
60- 65	218
65- 70	166
70- 75	125
75- 80	94
80- 85	67
85- 90	45
90- 95	26
95-100	12
100-105	3
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	560
0- 20	1791
0- 30	3124
0- 40	4234
0- 50	5064
0- 60	5662
0- 70	6045
0- 80	6264
0- 90	6375
0-100	6414
0-110	6417
0-120	6417
0-130	6417
0-140	6418
0-150	6419
0-160	6420
0-170	6420
0-180	6421

REPORT NUMBER: RAB00907
ISSUE DATE: 05/22/15

PAGE: 7 OF 8
DATE SAMPLE TESTED: 05/22/15

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	101	101	101	99
1	111	107	103	100	108	105	101	99	100	98	95	96	94	92	93	91	89	87
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69
4	90	80	73	67	87	78	72	67	76	70	66	74	69	65	72	67	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	66	62	58	56
6	79	68	60	55	77	67	60	55	65	59	54	63	58	54	62	57	53	51
7	74	63	55	50	73	62	55	50	61	54	50	59	54	49	58	53	49	47
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	39	38

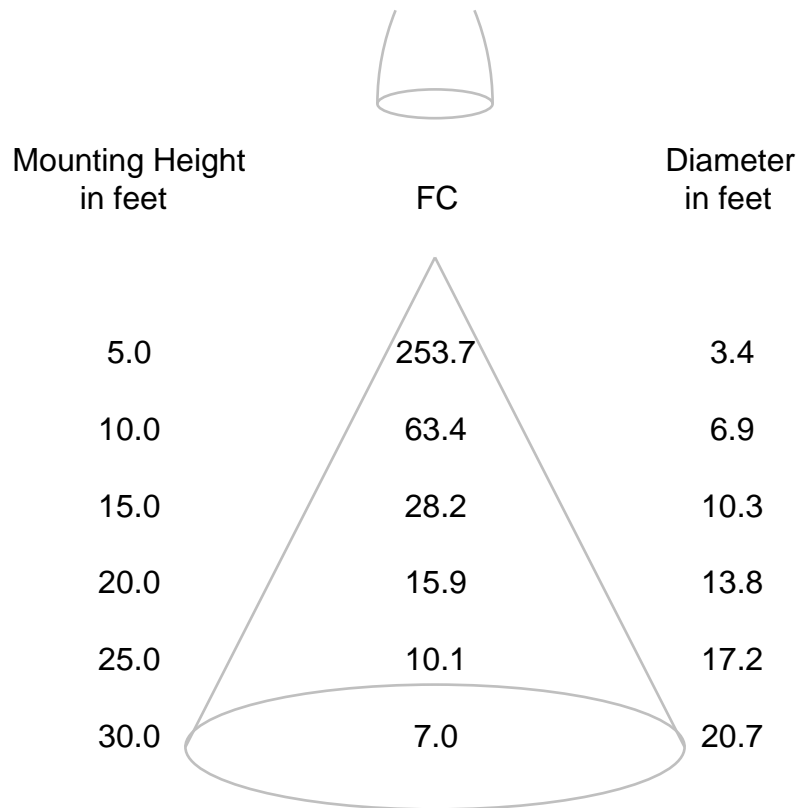
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

REPORT NUMBER: RAB00907
ISSUE DATE: 05/22/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 8
DATE SAMPLE TESTED: 05/22/15

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: RAB00908
DATE: 5/22/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FALCORA80NW

Page 1 of 4

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: RAB00908
 DATE: 5/22/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: FALCORA80NW

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	6421 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3830
Chromaticity Ordinate y	0.3841
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2239
Chromaticity Ordinate v'	0.5052
Correlated Color Temp CCT (K)	3985
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	18849 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.669
Input Power (Watts)	80.0
Input Power Factor (%)	99.7
Input Current THD (%)	4.6
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	80.3
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.298
Input Power (Watts)	78.2
Input Power Factor (%)	94.7
Input Current THD (%)	9.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	75
R1 Light greyish red	72
R2 Dark greyish yellow	79
R3 Strong yellowish green	84
R4 Moderate yellowish green	75
R5 Light bluish green	72
R6 Light blue	71
R7 Light violet	84
R8 Light reddish purple	59
R9 Strong red	-13
R10 Strong yellow	51
R11 Strong green	71
R12 Strong blue	45
R13 Light yellowish pink (skin)	73
R14 Moderate olive green (leaf)	91

*NOTE:

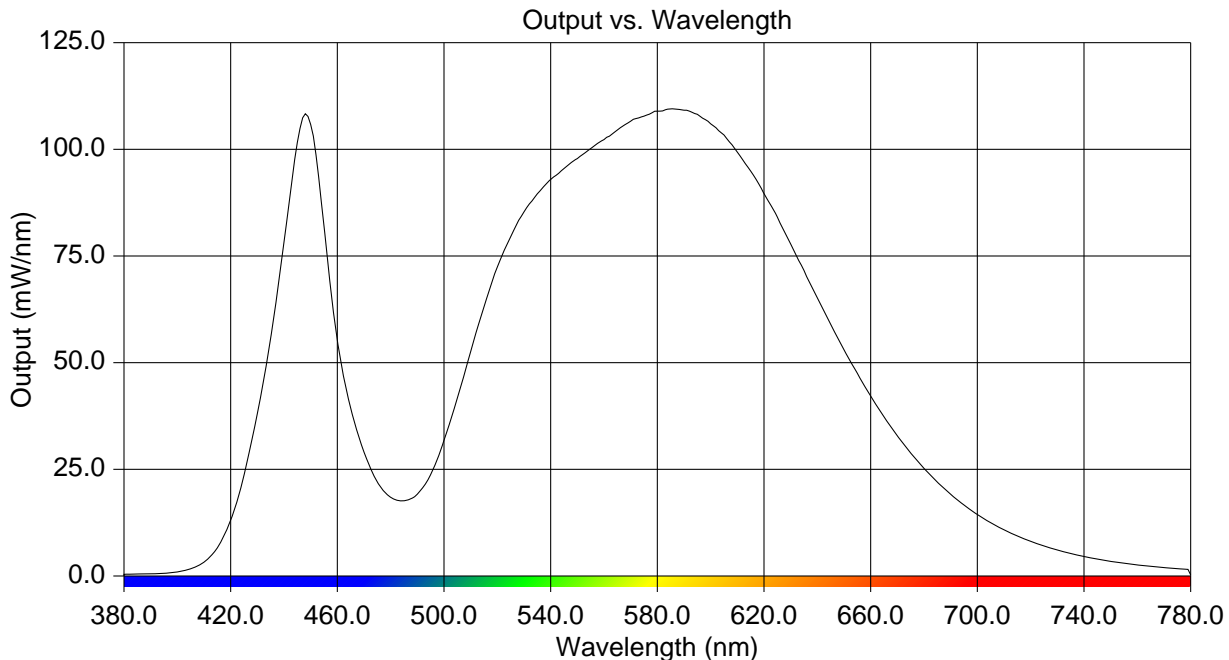
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB00908
 DATE: 5/22/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: FALCORA80NW

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.390	515	63.067	650	53.004
385	0.445	520	72.416	655	47.519
390	0.505	525	79.457	660	42.188
395	0.653	530	85.340	665	37.303
400	0.967	535	89.578	670	32.893
405	1.678	540	92.921	675	28.821
410	3.282	545	95.553	680	25.216
415	6.590	550	97.830	685	22.016
420	13.050	555	100.147	690	19.126
425	23.642	560	102.281	695	16.642
430	38.054	565	104.595	700	14.405
435	55.850	570	106.595	705	12.476
440	78.313	575	107.777	710	10.826
445	101.614	580	108.943	715	9.384
450	105.832	585	109.505	720	8.136
455	81.765	590	109.168	725	7.026
460	55.424	595	108.212	730	6.080
465	39.382	600	105.977	735	5.278
470	29.036	605	103.364	740	4.555
475	22.033	610	99.343	745	3.979
480	18.388	615	94.909	750	3.428
485	17.654	620	89.654	755	2.979
490	19.176	625	84.132	760	2.599
495	23.787	630	77.820	765	2.248
500	31.817	635	71.612	770	1.960
505	41.650	640	65.176	775	1.715
510	52.586	645	59.017	780	0.261



REPORT NUMBER: RAB00908
DATE: 5/22/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FALCORA80NW

Page 4 of 4

CIE Chromaticity Diagram

