

REPORT NUMBER: RAB00731

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ISSUE DATE: 03/05/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCORA230YW

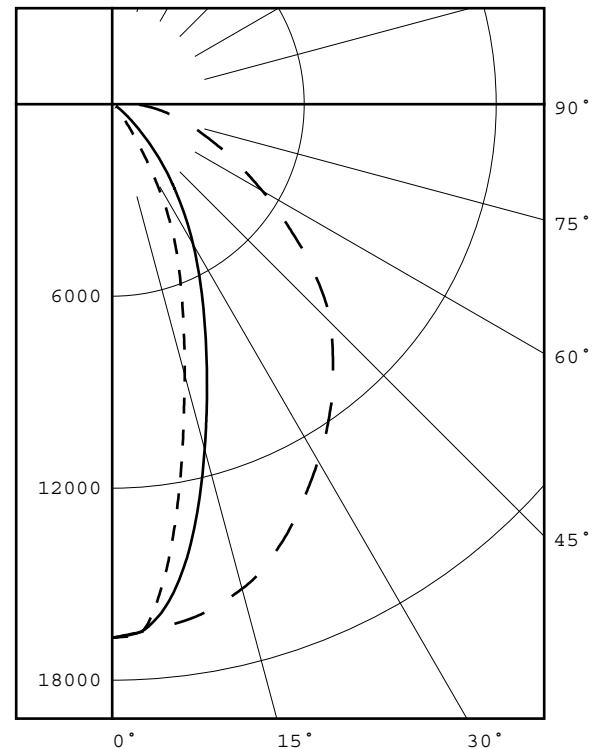
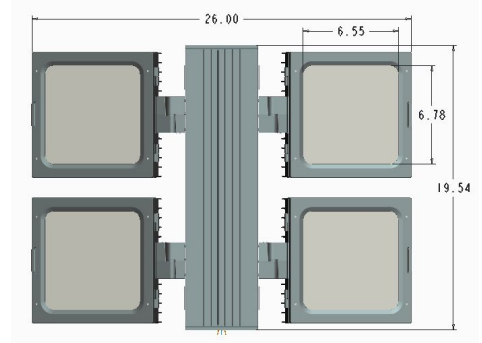
LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO PAIRS OF HEADS. EACH PAIR MOUNTED IN OPPOSING DIRECTIONS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 24 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	16673	16673	16673	16673	16673	
5	15705	15843	16111	16374	16449	1471
15	8760	9270	11161	14184	15680	3270
25	4520	4998	6649	10379	13895	3583
35	1140	1699	3652	7042	11842	2977
45	165	289	1426	4516	9638	2170
55	91	111	389	2651	6769	1484
65	57	70	120	1276	4239	908
75	29	37	60	497	2510	503
85	6	13	31	213	1254	246
90	1	7	19	125	755	
95	0	3	7	56	367	72
105	0	2	0	0	0	3
115	0	2	0	0	0	0
125	0	3	0	0	0	1
135	0	3	2	0	0	1
145	2	6	4	1	0	2
155	4	8	6	1	0	2
165	8	12	8	1	0	2
175	11	14	10	2	0	1
180	8	8	8	8	8	

FLUX



LEGEND:

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

ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	8323	49.9
0- 40	11300	67.7
0- 60	14954	89.6
0- 90	16611	99.5
90-120	75	0.5
90-130	76	0.5
90-150	79	0.5
90-180	83	0.5
0-180	16694	100.0

TOTAL INPUT WATTS = 242.8

EFFICACY = 68.8 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

LAMP: NINTY-SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), TILTED
15-DEGREES FROM VERTICAL BASE-UP POSITION.
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
TOTAL INPUT WATTS =242.77 AT 120.0 VAC.
LED DRIVER: RD-144-Q0700-R + 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%) : 31.6 X 99.5 DEGREES
FIELD ANGLE (10%): 65.7 X 163.1 DEGREES

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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH :19.540 26.000

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	712.	6151.	41570.
55	484.	2068.	35992.
65	411.	866.	30591.
75	342.	707.	29577.
85	210.	1085.	43881.

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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	16673	16673	16673	16673	16673
5.0	15705	15843	16111	16374	16449
10.0	12132	12595	14027	15557	16173
15.0	8760	9270	11161	14184	15680
20.0	6352	6818	8638	12366	14899
25.0	4520	4998	6649	10379	13895
30.0	2599	3278	5060	8589	12870
35.0	1140	1699	3652	7042	11842
40.0	414	748	2447	5708	10736
45.0	165	289	1426	4516	9638
50.0	115	151	750	3503	8269
55.0	91	111	389	2651	6769
60.0	73	88	198	1907	5420
65.0	57	70	120	1276	4239
70.0	43	53	85	796	3284
75.0	29	37	60	497	2510
80.0	16	24	43	330	1858
85.0	6	13	31	213	1254
90.0	1	7	19	125	755
95.0	0	3	7	56	367
100.0	0	2	0	8	89
105.0	0	2	0	0	0
110.0	0	2	0	0	0
115.0	0	2	0	0	0
120.0	0	2	0	0	0
125.0	0	3	0	0	0
130.0	0	3	1	0	0
135.0	0	3	2	0	0
140.0	1	4	3	1	0
145.0	2	6	4	1	0
150.0	3	7	5	1	0
155.0	4	8	6	1	0
160.0	7	10	7	1	0
165.0	8	12	8	1	0
170.0	10	13	9	2	0
175.0	11	14	10	2	0
180.0	8	8	8	8	8

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ZONAL LUMEN SUMMARY

0- 5	392.
5- 10	1078.
10- 15	1522.
15- 20	1748.
20- 25	1819.
25- 30	1763.
30- 35	1593.
35- 40	1384.
40- 45	1178.
45- 50	992.
50- 55	821.
55- 60	663.
60- 65	517.
65- 70	391.
70- 75	289.
75- 80	213.
80- 85	150.
85- 90	96.
90- 95	53.
95-100	19.
100-105	3.
105-110	0.
110-115	0.
115-120	0.
120-125	0.
125-130	0.
130-135	0.
135-140	1.
140-145	1.
145-150	1.
150-155	1.
155-160	1.
160-165	1.
165-170	1.
170-175	1.
175-180	0.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	392
5- 10	1078
10- 15	1522
15- 20	1748
20- 25	1819
25- 30	1763
30- 35	1593
35- 40	1384
40- 45	1178
45- 50	992
50- 55	821
55- 60	663
60- 65	517
65- 70	391
70- 75	289
75- 80	213
80- 85	150
85- 90	96
90- 95	53
95-100	19
100-105	3
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	1
140-145	1
145-150	1
150-155	1
155-160	1
160-165	1
165-170	1
170-175	1
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	1471
0- 20	4741
0- 30	8323
0- 40	11300
0- 50	13470
0- 60	14954
0- 70	15862
0- 80	16364
0- 90	16611
0-100	16683
0-110	16686
0-120	16686
0-130	16687
0-140	16688
0-150	16690
0-160	16692
0-170	16693
0-180	16694

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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	102	102	102	99
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	103	97	92	87	101	95	90	86	92	88	84	88	85	82	85	83	80	78
3	97	88	82	76	94	87	81	76	84	79	74	81	77	73	79	75	72	70
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	68	65	63
5	85	74	67	61	83	73	66	61	71	65	60	69	64	60	67	63	59	57
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	52
7	75	64	56	51	73	63	56	51	61	55	51	60	54	50	59	54	50	48
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45
9	67	55	48	44	66	55	48	44	54	48	43	53	47	43	52	47	43	41
10	63	52	45	41	62	52	45	41	51	45	41	50	44	40	49	44	40	39

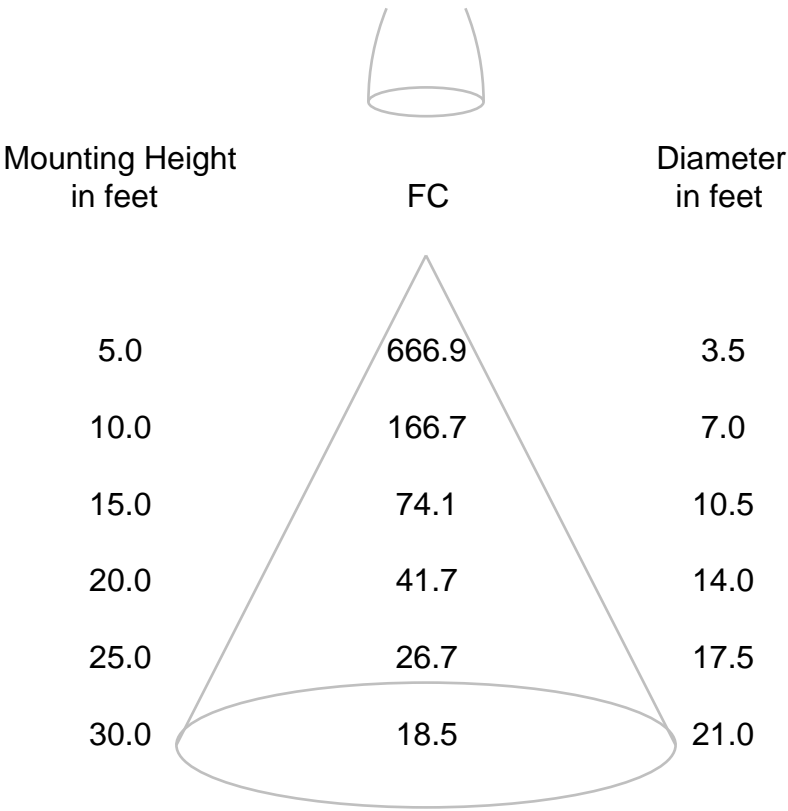
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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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: 3/9/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FALCORA230YW

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO PAIRS OF HEADS. EACH PAIR MOUNTED IN OPPOSING DIRECTIONS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 24 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

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

DRIVER: RD-144-Q0700-R + 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	3/14/15
	OCEAN OPTICS QE65PRO Spectroradiometer	3/10/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	3/10/16

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 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

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	16694 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4312
Chromaticity Ordinate y	0.4020
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2478
Chromaticity Ordinate v'	0.5197
Correlated Color Temp CCT (K)	3081
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	50739 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	2.02
Input Power (Watts)	241.9
Input Power Factor (%)	99.8
Input Current THD (%)	4.0
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	69.0
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.898
Input Power (Watts)	237.1
Input Power Factor (%)	95.3
Input Current THD (%)	8.8
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	80
R1 Light greyish red	78
R2 Dark greyish yellow	87
R3 Strong yellowish green	94
R4 Moderate yellowish green	78
R5 Light bluish green	77
R6 Light blue	83
R7 Light violet	84
R8 Light reddish purple	60
R9 Strong red	5
R10 Strong yellow	69
R11 Strong green	74
R12 Strong blue	60
R13 Light yellowish pink (skin)	80
R14 Moderate olive green (leaf)	96

*NOTE:

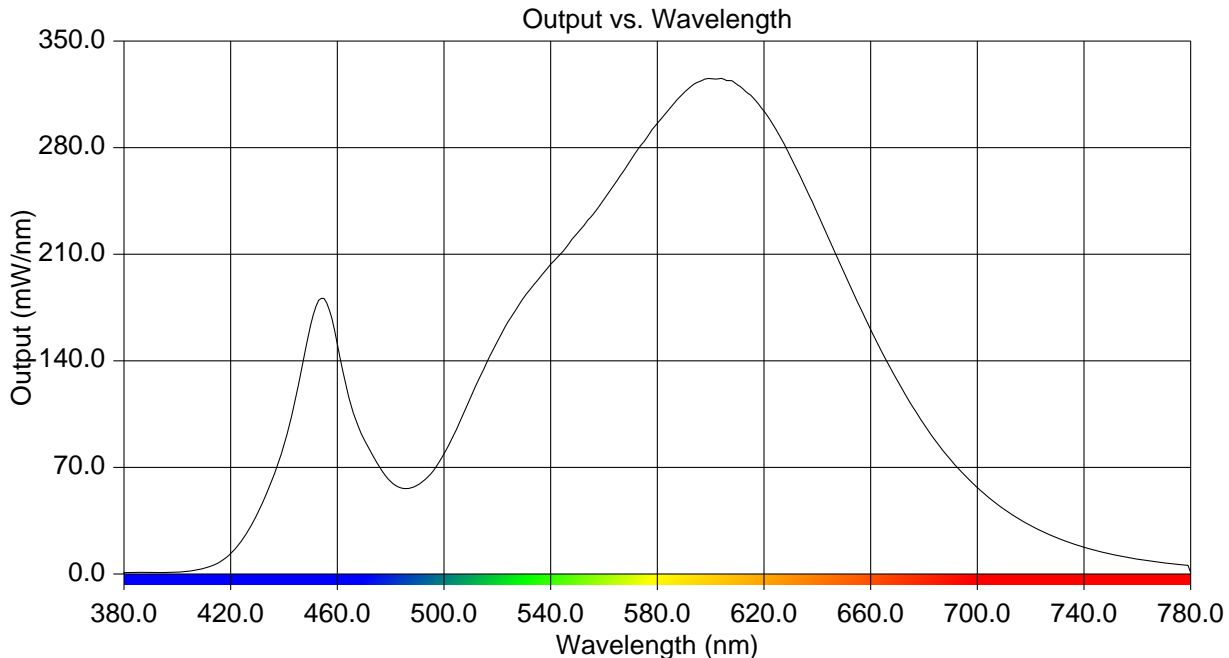
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even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

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.875	515	134.704	650	197.782
385	0.934	520	152.314	655	178.650
390	0.945	525	168.107	660	160.470
395	1.025	530	181.598	665	142.959
400	1.361	535	192.529	670	126.747
405	2.020	540	203.281	675	111.802
410	3.565	545	212.448	680	98.156
415	6.903	550	223.498	685	85.823
420	13.303	555	234.103	690	74.811
425	24.049	560	245.881	695	65.338
430	39.430	565	258.437	700	56.725
435	59.508	570	271.465	705	49.146
440	84.925	575	283.724	710	42.557
445	120.668	580	295.655	715	36.759
450	163.481	585	306.564	720	31.760
455	180.827	590	316.035	725	27.343
460	150.888	595	322.650	730	23.658
465	111.325	600	325.035	735	20.279
470	88.380	605	324.669	740	17.543
475	72.568	610	321.113	745	15.171
480	60.793	615	314.278	750	13.122
485	56.090	620	303.791	755	11.280
490	58.244	625	290.499	760	9.771
495	65.604	630	273.848	765	8.441
500	78.742	635	255.548	770	7.316
505	96.504	640	236.704	775	6.358
510	115.759	645	217.390	780	0.960



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CIE Chromaticity Diagram

