

REPORT NUMBER: RAB00722

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ISSUE DATE: 03/04/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCOR230W

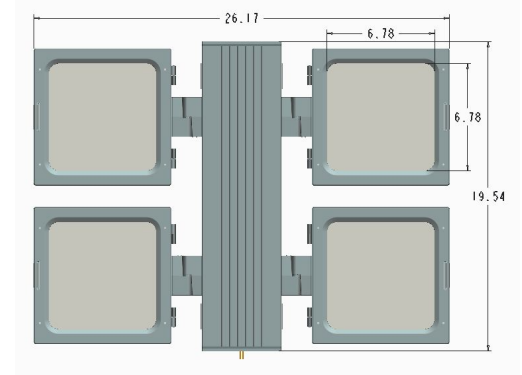
LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO PAIRS OF HEADS. EACH PAIR MOUNTED IN OPPOSING DIRECTIONS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 24 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

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

### CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	9083	9083	9083	9083	9083	
5	9122	9075	9016	8985	8957	856
15	8731	8671	8619	8596	8608	2440
25	8158	8088	8036	8059	8069	3725
35	7100	7062	7211	7322	7334	4491
45	5538	5574	5851	5793	5740	4379
55	3427	3572	4040	3608	3386	3263
65	1544	1694	1944	1571	1346	1691
75	559	617	667	521	439	635
85	81	92	106	72	60	118
90	3	3	2	2	2	
95	0	1	0	1	0	1
105	1	1	1	1	1	1
115	2	2	1	1	1	2
125	2	2	2	2	2	2
135	3	3	3	3	3	2
145	4	4	4	4	4	2
155	4	4	4	5	5	2
165	4	4	4	4	5	1
175	5	5	5	5	5	0
180	5	5	5	5	5	

### FLUX



### ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	7021	32.5
0- 40	11512	53.3
0- 60	19154	88.6
0- 90	21599	99.9
90-120	3	0.0
90-130	5	0.0
90-150	10	0.0
90-180	14	0.1
0-180	21612	100.0

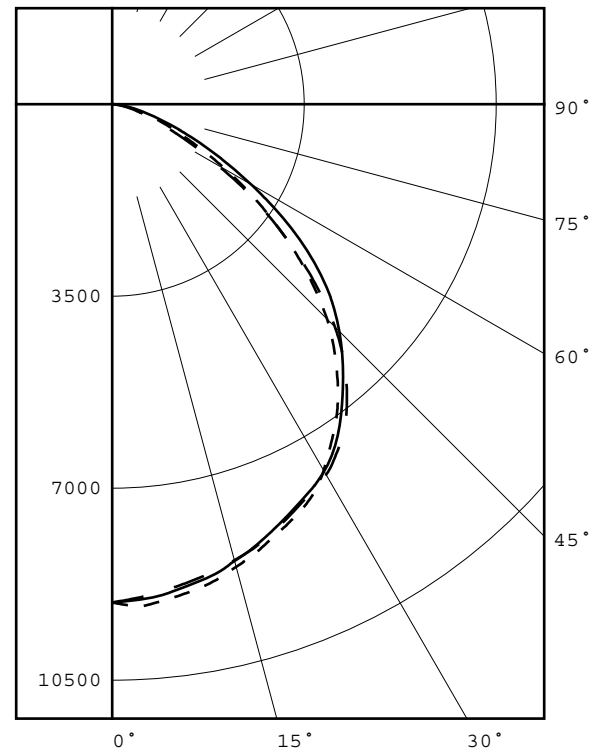
TOTAL INPUT WATTS = 234.8

EFFICACY = 92.0 Lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.3 1.3



#### LEGEND:

0-deg: - - - - -  
 45-deg: \_\_\_\_\_  
 90-deg: - - - - -

Checked

X.CAO

Approved

D.WANG-MUNSON

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ADDITIONAL INFORMATION

LAMP: NINTY-SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), VERTICAL  
BASE-UP POSITION.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS =234.78 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%) : 99.4 X 100.1 DEGREES  
FIELD ANGLE (10%): 141.1 X 137.2 DEGREES

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PLANE : 0-DEG 90-DEG  
LUMINOUS LENGTH :19.540 26.170

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
45	23731.	25072.	24597.
55	18104.	21342.	17887.
65	11070.	13938.	9650.
75	6544.	7809.	5139.
85	2816.	3685.	2086.

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## CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	9083	9083	9083	9083	9083
5.0	9122	9075	9016	8985	8957
10.0	8968	8923	8851	8810	8793
15.0	8731	8671	8619	8596	8608
20.0	8443	8404	8341	8331	8352
25.0	8158	8088	8036	8059	8069
30.0	7709	7682	7725	7755	7800
35.0	7100	7062	7211	7322	7334
40.0	6375	6369	6544	6625	6643
45.0	5538	5574	5851	5793	5740
50.0	4514	4608	5049	4731	4591
55.0	3427	3572	4040	3608	3386
60.0	2408	2574	2920	2523	2205
65.0	1544	1694	1944	1571	1346
70.0	963	1054	1189	924	776
75.0	559	617	667	521	439
80.0	279	316	332	256	210
85.0	81	92	106	72	60
90.0	3	3	2	2	2
95.0	0	1	0	1	0
100.0	1	1	1	1	0
105.0	1	1	1	1	1
110.0	1	1	2	1	1
115.0	2	2	1	1	1
120.0	2	2	2	2	2
125.0	2	2	2	2	2
130.0	2	2	2	2	2
135.0	3	3	3	3	3
140.0	3	3	3	4	4
145.0	4	4	4	4	4
150.0	4	4	4	4	5
155.0	4	4	4	5	5
160.0	5	4	4	5	5
165.0	4	4	4	4	5
170.0	5	5	4	5	5
175.0	5	5	5	5	5
180.0	5	5	5	5	5

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## ZONAL LUMEN SUMMARY

0- 5	217.
5- 10	640.
10- 15	1038.
15- 20	1402.
20- 25	1724.
25- 30	2001.
30- 35	2201.
35- 40	2290.
40- 45	2265.
45- 50	2114.
50- 55	1822.
55- 60	1440.
60- 65	1023.
65- 70	668.
70- 75	408.
75- 80	227.
80- 85	98.
85- 90	20.
90- 95	0.
95-100	0.
100-105	1.
105-110	1.
110-115	1.
115-120	1.
120-125	1.
125-130	1.
130-135	1.
135-140	1.
140-145	1.
145-150	1.
150-155	1.
155-160	1.
160-165	1.
165-170	1.
170-175	0.
175-180	0.

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### 5-DEGREE ZONAL LUMEN SUMMARY

0- 5	217
5- 10	640
10- 15	1038
15- 20	1402
20- 25	1724
25- 30	2001
30- 35	2201
35- 40	2290
40- 45	2265
45- 50	2114
50- 55	1822
55- 60	1440
60- 65	1023
65- 70	668
70- 75	408
75- 80	227
80- 85	98
85- 90	20
90- 95	0
95-100	0
100-105	1
105-110	1
110-115	1
115-120	1
120-125	1
125-130	1
130-135	1
135-140	1
140-145	1
145-150	1
150-155	1
155-160	1
160-165	1
165-170	1
170-175	0
175-180	0

### 10-DEGREE ZONAL LUMEN SUMMARY

0- 10	856
0- 20	3296
0- 30	7021
0- 40	11512
0- 50	15891
0- 60	19154
0- 70	20845
0- 80	21481
0- 90	21599
0-100	21600
0-110	21601
0-120	21602
0-130	21604
0-140	21606
0-150	21609
0-160	21611
0-170	21612
0-180	21612

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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	100
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	94	88	83	99	93	87	82	89	84	80	86	82	79	83	80	77	75
3	93	84	77	71	91	82	76	70	80	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	71	65	60	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	58	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	58	51	46	57	51	46	55	50	45	43
7	68	56	47	42	67	55	47	41	53	46	41	52	46	41	51	45	41	39
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	47	41	36	35
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31
10	56	43	36	31	55	43	35	30	42	35	30	41	35	30	40	34	30	28

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.

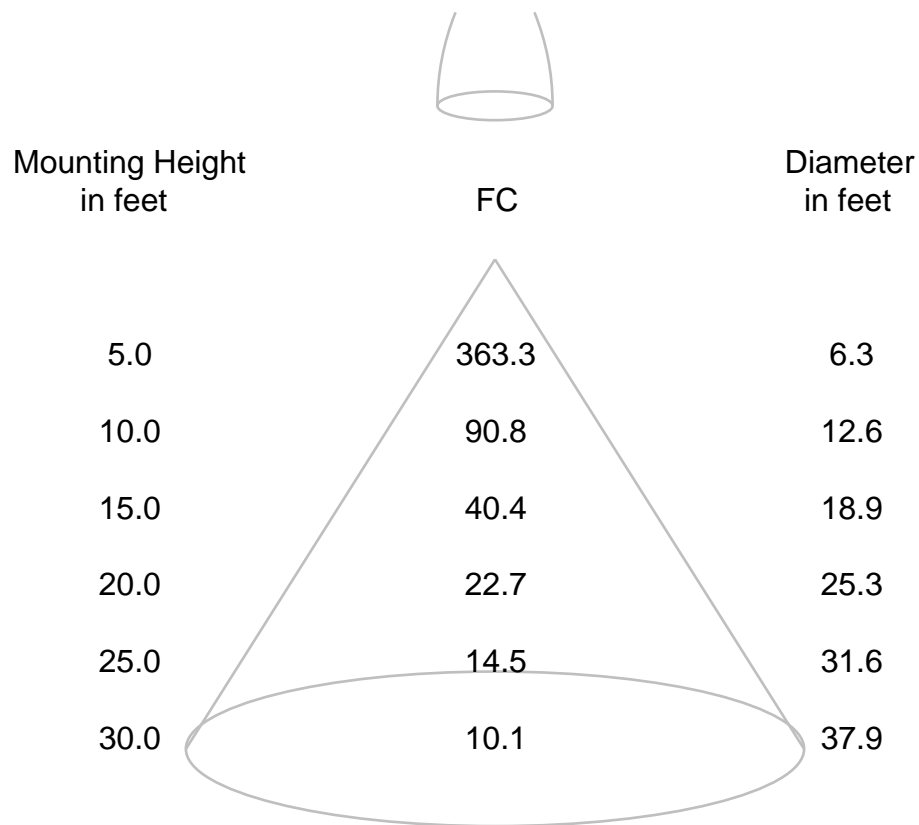


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## CONE OF LIGHT DIAGRAM

(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 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), 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 (120.1 AND 277.1 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	2/5/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	2/5/16

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 (277.1 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)	21612 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3506
Chromaticity Ordinate y	0.3610
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2115
Chromaticity Ordinate v'	0.4900
Correlated Color Temp CCT (K)	4833
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	65327 *
ELECTRICAL	
Input Voltage (Volts AC)	120.1
Input Current (Amps AC)	1.96
Input Power (Watts)	235.0
Input Power Factor (%)	99.8
Input Current THD (%)	4.3
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
	92.0
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.1
Input Current (Amps AC)	0.874
Input Power (Watts)	230.3
Input Power Factor (%)	95.1
Input Current THD (%)	9.1
Input Voltage THD (%)	0.1
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	71
R1 Light greyish red	70
R2 Dark greyish yellow	73
R3 Strong yellowish green	76
R4 Moderate yellowish green	72
R5 Light bluish green	70
R6 Light blue	65
R7 Light violet	78
R8 Light reddish purple	59
R9 Strong red	-22
R10 Strong yellow	37
R11 Strong green	71
R12 Strong blue	43
R13 Light yellowish pink (skin)	69
R14 Moderate olive green (leaf)	86

### \*NOTE:

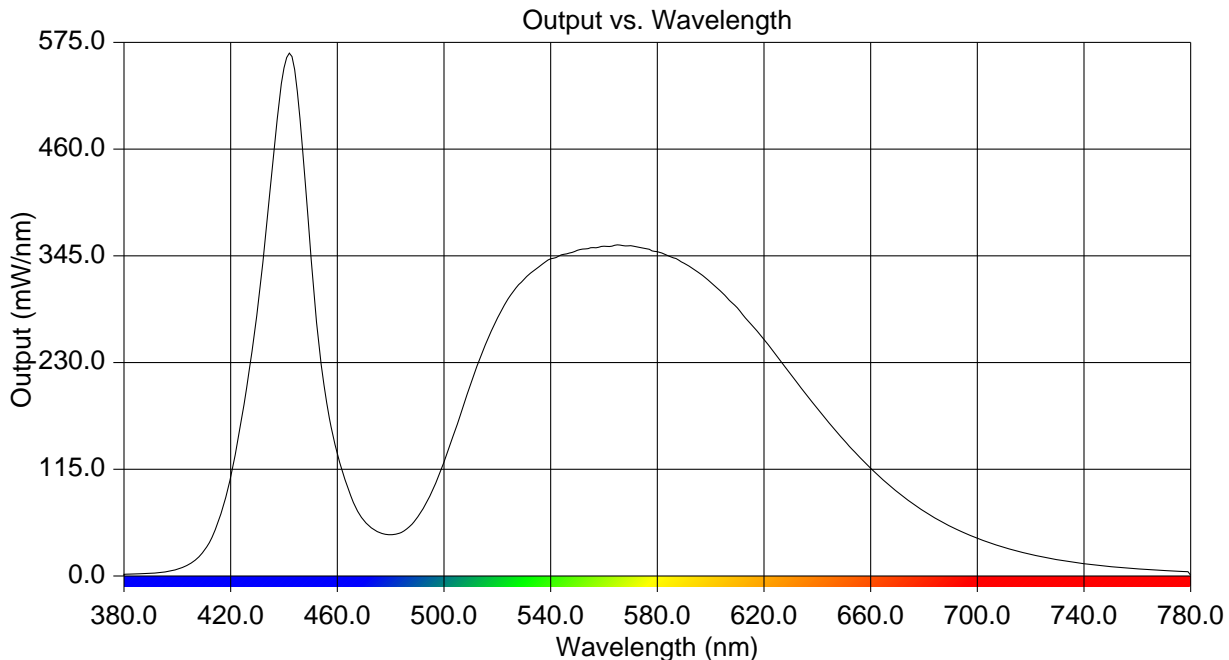
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	1.789	515	245.518	650	146.494
385	2.176	520	278.002	655	130.568
390	2.905	525	302.902	660	116.236
395	4.280	530	319.780	665	102.815
400	7.264	535	331.979	670	90.702
405	13.564	540	342.009	675	79.472
410	27.327	545	346.851	680	69.721
415	55.668	550	351.133	685	61.141
420	106.761	555	353.911	690	53.444
425	184.651	560	355.537	695	46.658
430	285.152	565	357.010	700	40.709
435	423.151	570	356.124	705	35.470
440	547.755	575	353.323	710	30.787
445	522.279	580	349.545	715	26.781
450	348.969	585	344.169	720	23.316
455	205.816	590	337.222	725	20.236
460	131.897	595	328.007	730	17.545
465	86.760	600	316.677	735	15.300
470	59.513	605	303.885	740	13.304
475	47.800	610	289.132	745	11.612
480	44.490	615	271.893	750	10.146
485	48.583	620	255.075	755	8.796
490	63.019	625	236.240	760	7.674
495	87.984	630	217.432	765	6.697
500	123.177	635	198.604	770	5.846
505	163.625	640	180.512	775	5.144
510	207.257	645	163.072	780	0.786



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## CIE Chromaticity Diagram

