

REPORT NUMBER: RAB00738

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ISSUE DATE: 03/13/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCOR160NW

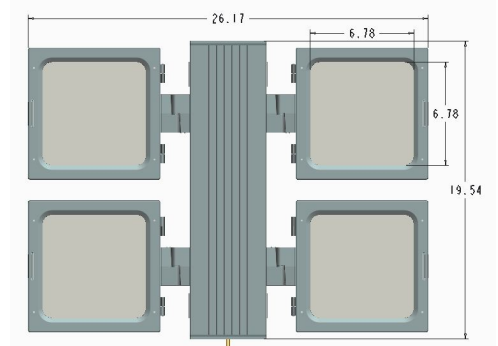
LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO PAIRS OF HEADS. EACH PAIR MOUNTED IN OPPOSING DIRECTIONS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 16 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	5535	5535	5535	5535	5535	
5	5547	5539	5498	5482	5493	522
15	5323	5295	5215	5195	5178	1478
25	4976	4877	4771	4804	4858	2236
35	4440	4310	4253	4413	4517	2721
45	3584	3499	3507	3621	3636	2741
55	2329	2436	2701	2442	2293	2199
65	1153	1245	1446	1180	1024	1249
75	440	480	536	427	374	506
85	76	84	98	71	60	104
90	7	5	6	5	4	
95	0	0	0	0	0	1
105	1	1	1	1	1	1
115	1	1	1	1	1	1
125	1	1	1	1	1	1
135	2	2	2	2	2	1
145	2	2	2	2	2	1
155	3	2	2	3	3	1
165	3	3	3	3	3	1
175	3	3	3	3	3	0
180	3	3	3	3	3	

FLUX



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	4237	30.8
0- 40	6958	50.5
0- 60	11898	86.4
0- 90	13757	99.9
90-120	3	0.0
90-130	4	0.0
90-150	6	0.0
90-180	9	0.1
0-180	13766	100.0

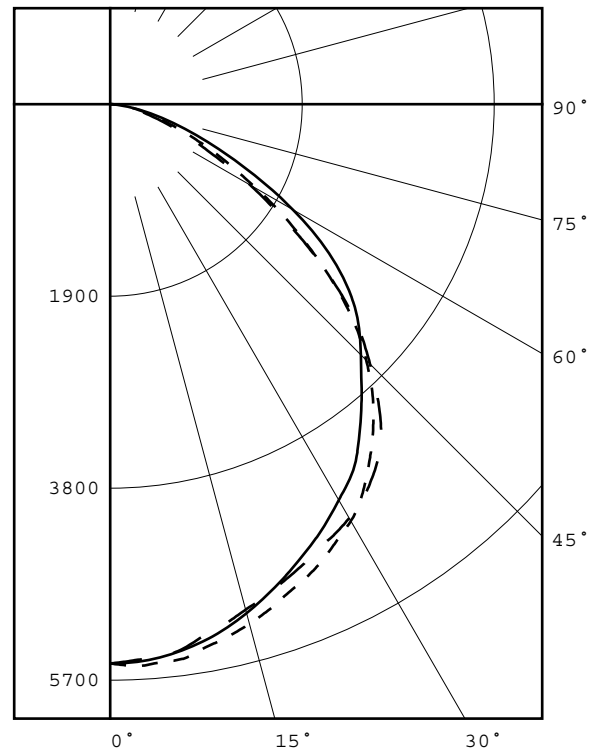
TOTAL INPUT WATTS = 159.5

EFFICACY = 86.3 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: SIXTY-FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), VERTICAL
BASE-UP POSITION.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS =159.53 AT 120.0 VAC.

LED DRIVER: RD-144-Q0700-R

TEST PROCEDURE: IESNA LM-79-08

ACCREDITED LABORATORY CODE 201058-0

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PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 103.4 X 103.5 DEGREES
FIELD ANGLE (10%) : 145.5 X 143.0 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	15358.	15028.	15581.
55	12303.	14269.	12113.
65	8267.	10367.	7342.
75	5151.	6275.	4378.
85	2642.	3407.	2086.

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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	5535	5535	5535	5535	5535
5.0	5547	5539	5498	5482	5493
10.0	5456	5453	5391	5350	5342
15.0	5323	5295	5215	5195	5178
20.0	5147	5087	4999	5012	5023
25.0	4976	4877	4771	4804	4858
30.0	4763	4637	4524	4625	4730
35.0	4440	4310	4253	4413	4517
40.0	4053	3917	3869	4065	4169
45.0	3584	3499	3507	3621	3636
50.0	3007	3013	3169	3096	3042
55.0	2329	2436	2701	2442	2293
60.0	1680	1811	2089	1764	1596
65.0	1153	1245	1446	1180	1024
70.0	728	801	922	725	652
75.0	440	480	536	427	374
80.0	230	250	264	218	186
85.0	76	84	98	71	60
90.0	7	5	6	5	4
95.0	0	0	0	0	0
100.0	0	1	1	1	0
105.0	1	1	1	1	1
110.0	1	1	1	1	1
115.0	1	1	1	1	1
120.0	1	1	1	1	1
125.0	1	1	1	1	1
130.0	1	1	1	1	1
135.0	2	2	2	2	2
140.0	2	2	2	2	2
145.0	2	2	2	2	2
150.0	2	2	2	3	3
155.0	3	2	2	3	3
160.0	3	3	3	3	3
165.0	3	3	3	3	3
170.0	3	3	2	3	3
175.0	3	3	3	3	3
180.0	3	3	3	3	3

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ZONAL LUMEN SUMMARY

0- 5	132.
5- 10	390.
10- 15	631.
15- 20	847.
20- 25	1037.
25- 30	1199.
30- 35	1327.
35- 40	1394.
40- 45	1398.
45- 50	1343.
50- 55	1207.
55- 60	992.
60- 65	741.
65- 70	508.
70- 75	322.
75- 80	184.
80- 85	84.
85- 90	20.
90- 95	1.
95-100	0.
100-105	0.
105-110	1.
110-115	1.
115-120	0.
120-125	0.
125-130	0.
130-135	1.
135-140	1.
140-145	1.
145-150	1.
150-155	1.
155-160	1.
160-165	0.
165-170	0.
170-175	0.
175-180	0.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	132
5- 10	390
10- 15	631
15- 20	847
20- 25	1037
25- 30	1199
30- 35	1327
35- 40	1394
40- 45	1398
45- 50	1343
50- 55	1207
55- 60	992
60- 65	741
65- 70	508
70- 75	322
75- 80	184
80- 85	84
85- 90	20
90- 95	1
95-100	0
100-105	0
105-110	1
110-115	1
115-120	0
120-125	0
125-130	0
130-135	1
135-140	1
140-145	1
145-150	1
150-155	1
155-160	1
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	522
0- 20	2001
0- 30	4237
0- 40	6958
0- 50	9699
0- 60	11898
0- 70	13147
0- 80	13653
0- 90	13757
0-100	13758
0-110	13759
0-120	13760
0-130	13761
0-140	13762
0-150	13763
0-160	13765
0-170	13765
0-180	13766

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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	102	99	107	104	100	97	99	97	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	75	69	90	81	74	69	78	72	67	76	71	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	54
5	78	66	58	51	76	65	57	51	63	56	51	61	55	50	59	54	50	48
6	73	60	51	45	71	59	51	45	57	50	45	55	49	44	54	48	44	42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	43	39	37
8	63	50	41	36	61	49	41	36	48	41	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

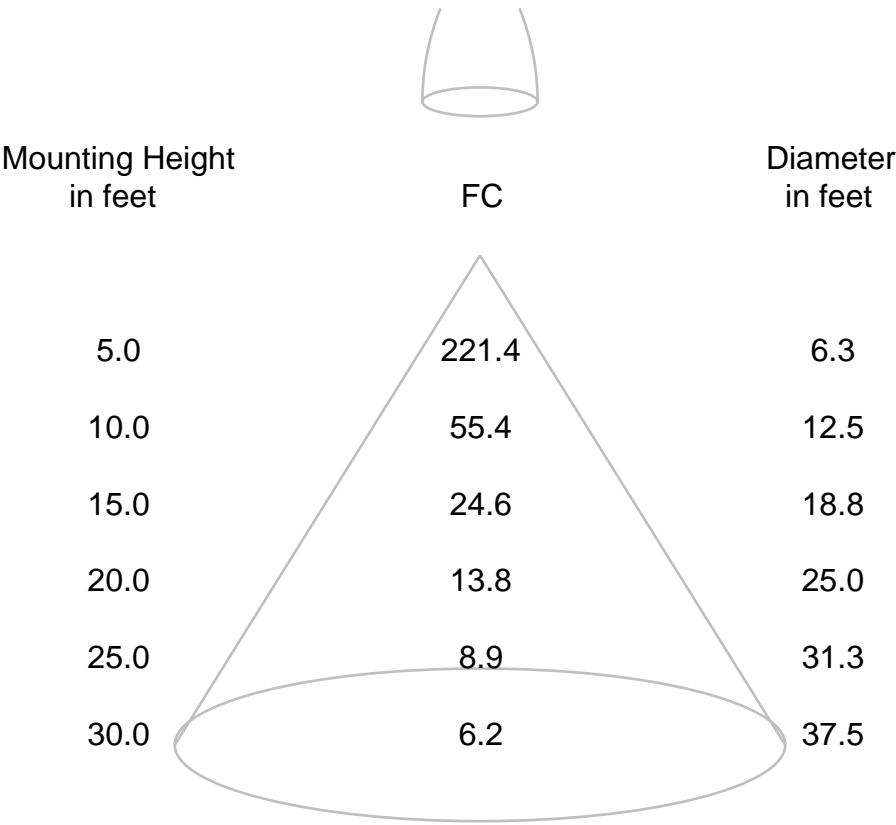
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

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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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CATALOG NUMBER: FALCOR160NW

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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 16 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

LAMP: SIXTY-FOUR WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.

DRIVER: RD-144-Q0700-R

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	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 (CRI_a, 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)	13766 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3845
Chromaticity Ordinate y	0.3856
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2243
Chromaticity Ordinate v'	0.5060
Correlated Color Temp CCT (K)	3956
ANSI C78.377-2008 Duv	0.003
Total Radiant Flux (milliWatts)	40265 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	1.33
Input Power (Watts)	159.1
Input Power Factor (%)	99.7
Input Current THD (%)	2.9
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	86.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.591
Input Power (Watts)	156.2
Input Power Factor (%)	95.4
Input Current THD (%)	8.2
Input Voltage THD (%)	0.1
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	74
R1 Light greyish red	72
R2 Dark greyish yellow	79
R3 Strong yellowish green	85
R4 Moderate yellowish green	75
R5 Light bluish green	71
R6 Light blue	71
R7 Light violet	84
R8 Light reddish purple	58
R9 Strong red	-14
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:

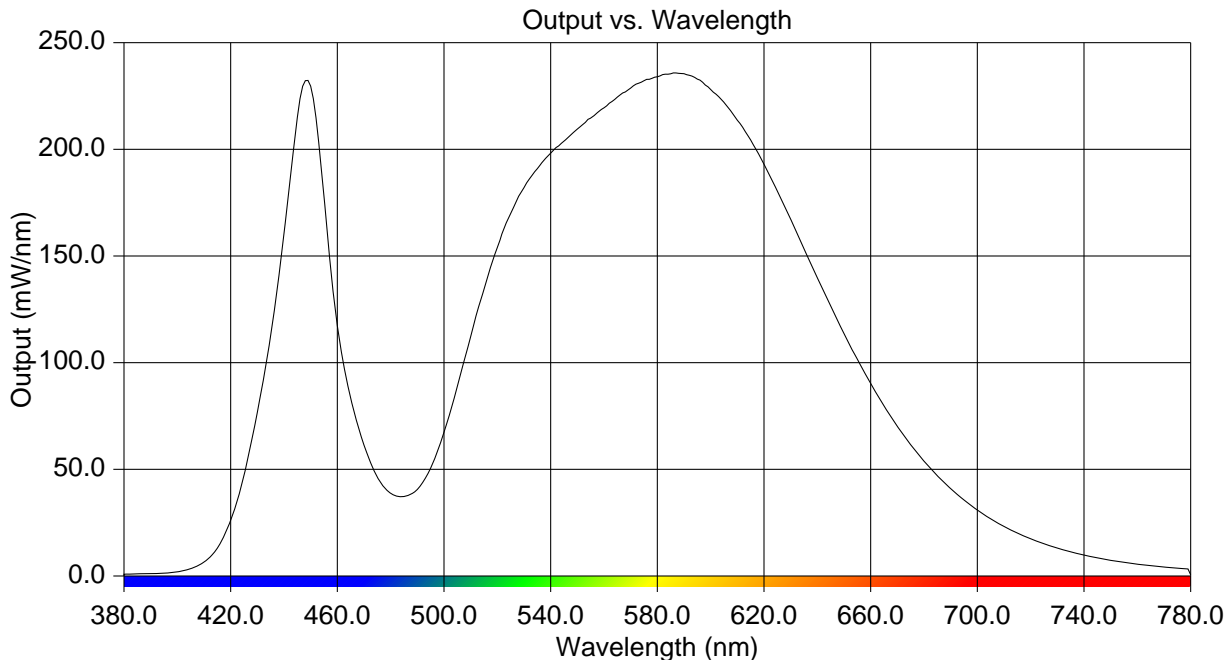
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even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

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.827	515	134.410	650	113.687
385	0.964	520	153.994	655	101.638
390	1.074	525	169.943	660	90.162
395	1.375	530	182.045	665	79.825
400	1.990	535	190.928	670	70.068
405	3.383	540	198.264	675	61.613
410	6.514	545	203.878	680	53.926
415	13.040	550	209.502	685	46.991
420	25.996	555	214.669	690	40.947
425	46.983	560	219.455	695	35.636
430	76.698	565	224.487	700	31.037
435	112.995	570	228.713	705	26.787
440	160.363	575	232.168	710	23.241
445	214.938	580	234.006	715	20.128
450	229.624	585	235.408	720	17.411
455	177.273	590	235.458	725	15.030
460	117.426	595	232.915	730	13.058
465	83.264	600	228.050	735	11.303
470	61.337	605	221.872	740	9.787
475	46.369	610	213.642	745	8.513
480	38.750	615	204.386	750	7.366
485	37.259	620	192.819	755	6.414
490	40.561	625	180.622	760	5.553
495	50.572	630	167.066	765	4.830
500	67.416	635	153.382	770	4.199
505	88.830	640	139.823	775	3.680
510	112.201	645	126.526	780	0.559



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CIE Chromaticity Diagram

