

REPORT NUMBER: RAB00734

PAGE: 1 OF 9

ISSUE DATE: 03/16/15

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: FALCOR160W

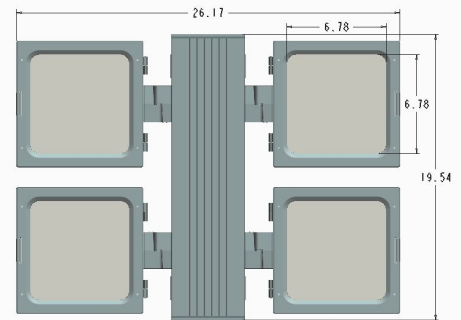
LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO PAIRS OF HEADS. EACH PAIR MOUNTED IN OPPOSING DIRECTIONS, EACH LIGHT HEAD CONSISTING OF: CAST FINNED METAL HOUSING, MOLDED PLASTIC REFLECTOR WITH SPECULAR FINISH, ONE CIRCUIT BOARD WITH 16 LEDS, CLEAR FLAT PRISMATIC GLASS LENS.

(SEE PAGE 2 FOR MORE INFORMATION)

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	
0	5527	5527	5527	5527	5527	
5	5529	5513	5478	5457	5469	521
15	5304	5267	5209	5191	5207	1478
25	4994	4895	4820	4857	4936	2255
35	4534	4393	4349	4489	4613	2775
45	3715	3655	3646	3729	3817	2848
55	2492	2587	2858	2624	2515	2348
65	1252	1363	1581	1335	1193	1379
75	482	533	599	494	448	572
85	83	95	106	87	70	119
90	6	7	5	5	3	
95	1	1	1	0	0	1
105	1	1	1	1	1	1
115	1	1	1	1	1	1
125	1	1	1	1	2	1
135	2	2	2	2	2	2
145	3	3	3	3	3	2
155	3	3	3	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	4253	29.7
0- 40	7028	49.1
0- 60	12224	85.5
0- 90	14294	99.9
90-120	3	0.0
90-130	5	0.0
90-150	8	0.1
90-180	10	0.1
0-180	14304	100.0

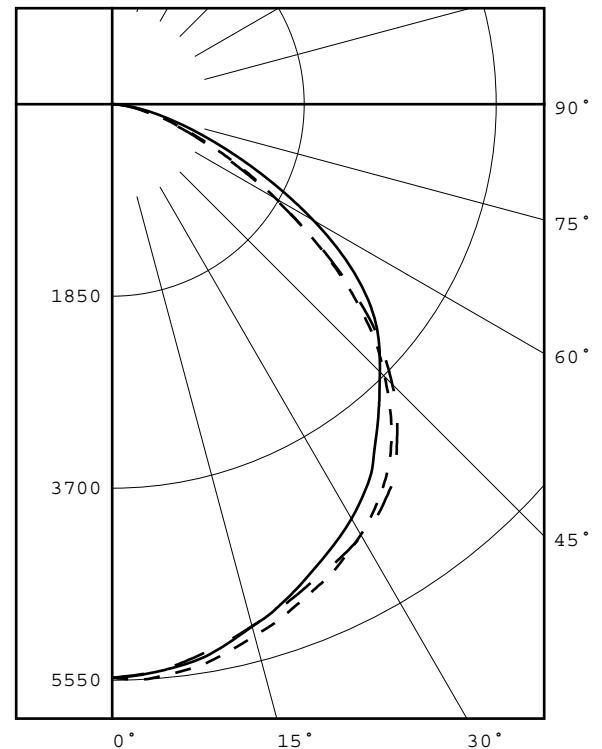
TOTAL INPUT WATTS = 157.1

EFFICACY = 91.1 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

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
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PAGE: 2 OF 9

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 =157.14 AT 120.0 VAC.

LED DRIVER: RD-144-Q0700-R

TEST PROCEDURE: IESNA LM-79-08

ACCREDITED LABORATORY CODE 201058-0

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
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PAGE: 3 OF 9

PLANE : 0-DEG 90-DEG
BEAM ANGLE (50%) : 105.9 X 106.5 DEGREES
FIELD ANGLE (10%) : 147.4 X 146.1 DEGREES

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
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PAGE: 4 OF 9

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	15919.	15624.	16356.
55	13164.	15098.	13286.
65	8976.	11335.	8553.
75	5643.	7013.	5245.
85	2886.	3685.	2434.

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
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PAGE: 5 OF 9

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0.0	5527	5527	5527	5527	5527
5.0	5529	5513	5478	5457	5469
10.0	5449	5420	5384	5346	5347
15.0	5304	5267	5209	5191	5207
20.0	5149	5082	5030	5027	5070
25.0	4994	4895	4820	4857	4936
30.0	4792	4683	4612	4699	4806
35.0	4534	4393	4349	4489	4613
40.0	4186	4034	3983	4150	4268
45.0	3715	3655	3646	3729	3817
50.0	3165	3166	3322	3238	3253
55.0	2492	2587	2858	2624	2515
60.0	1828	1947	2239	1941	1801
65.0	1252	1363	1581	1335	1193
70.0	799	884	1020	828	758
75.0	482	533	599	494	448
80.0	253	279	301	263	226
85.0	83	95	106	87	70
90.0	6	7	5	5	3
95.0	1	1	1	0	0
100.0	1	1	1	1	1
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	2
130.0	2	2	2	2	2
135.0	2	2	2	2	2
140.0	2	2	2	2	2
145.0	3	3	3	3	3
150.0	3	3	3	3	3
155.0	3	3	3	3	3
160.0	3	3	3	3	3
165.0	3	3	3	3	3
170.0	3	3	3	3	3
175.0	3	3	3	3	3
180.0	3	3	3	3	3

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 6 OF 9

ZONAL LUMEN SUMMARY

0- 5	132.
5- 10	389.
10- 15	630.
15- 20	848.
20- 25	1042.
25- 30	1212.
30- 35	1348.
35- 40	1427.
40- 45	1445.
45- 50	1403.
50- 55	1280.
55- 60	1068.
60- 65	814.
65- 70	566.
70- 75	362.
75- 80	210.
80- 85	96.
85- 90	23.
90- 95	1.
95-100	0.
100-105	1.
105-110	1.
110-115	1.
115-120	0.
120-125	0.
125-130	1.
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.

REPORT NUMBER: RAB00734
 ISSUE DATE: 03/16/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 9

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	132
5- 10	389
10- 15	630
15- 20	848
20- 25	1042
25- 30	1212
30- 35	1348
35- 40	1427
40- 45	1445
45- 50	1403
50- 55	1280
55- 60	1068
60- 65	814
65- 70	566
70- 75	362
75- 80	210
80- 85	96
85- 90	23
90- 95	1
95-100	0
100-105	1
105-110	1
110-115	1
115-120	0
120-125	0
125-130	1
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	521
0- 20	1999
0- 30	4253
0- 40	7028
0- 50	9876
0- 60	12224
0- 70	13603
0- 80	14175
0- 90	14294
0-100	14295
0-110	14296
0-120	14297
0-130	14298
0-140	14300
0-150	14302
0-160	14303
0-170	14304
0-180	14304

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15

PAGE: 8 OF 9

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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	81	98	91	85	80	88	83	79	84	80	77	81	78	75	73
3	92	82	75	68	90	81	74	68	78	72	67	75	70	66	72	68	64	62
4	85	73	65	58	82	72	64	58	69	63	57	67	61	56	65	60	56	54
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49	47
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	49	43	38	36
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	45	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	34	28	40	33	28	39	33	28	38	32	28	26

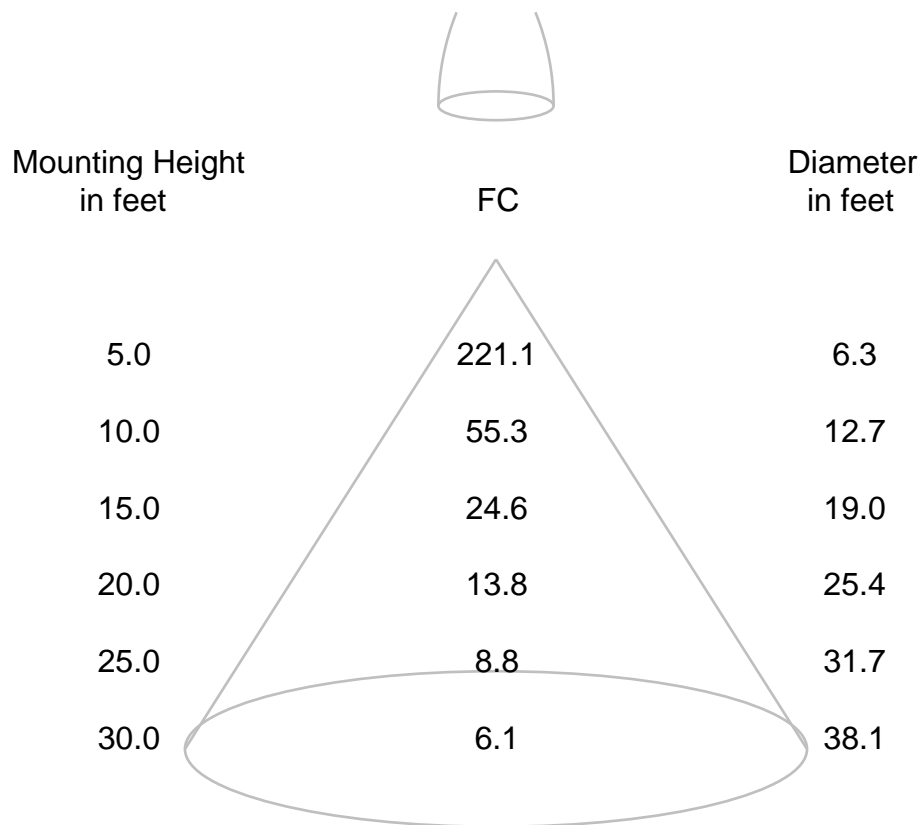
ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

REPORT NUMBER: RAB00734
ISSUE DATE: 03/16/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 9 OF 9

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: 3/13/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: FALCOR160W

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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 CATALOG NUMBER: FALCOR160W

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	14304 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3397
Chromaticity Ordinate y	0.3451
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2103
Chromaticity Ordinate v'	0.4807
Correlated Color Temp CCT (K)	5194
ANSI C78.377-2008 Duv	-0.001
Total Radiant Flux (milliWatts)	45087 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	1.31
Input Power (Watts)	156.8
Input Power Factor (%)	99.7
Input Current THD (%)	3.4
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
	91.2
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.584
Input Power (Watts)	154.1
Input Power Factor (%)	95.3
Input Current THD (%)	8.5
Input Voltage THD (%)	0.1
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	73
R2 Dark greyish yellow	74
R3 Strong yellowish green	74
R4 Moderate yellowish green	73
R5 Light bluish green	74
R6 Light blue	67
R7 Light violet	76
R8 Light reddish purple	62
R9 Strong red	-12
R10 Strong yellow	38
R11 Strong green	76
R12 Strong blue	50
R13 Light yellowish pink (skin)	71
R14 Moderate olive green (leaf)	85

*NOTE:

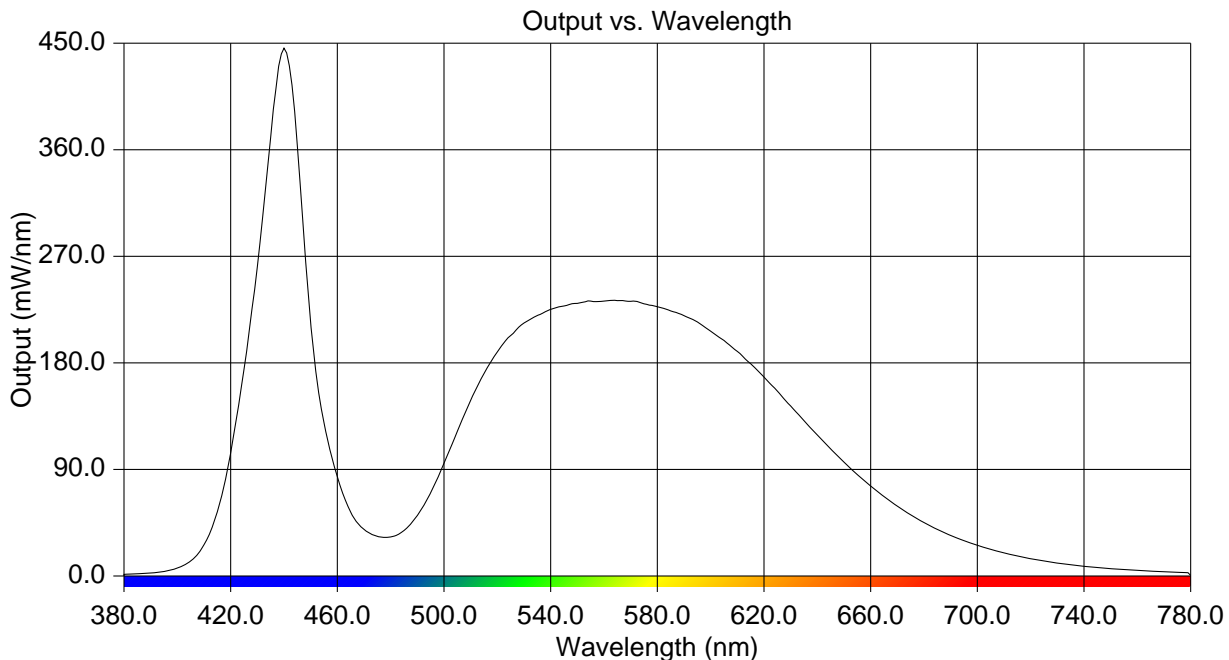
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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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Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	1.359	515	170.616	650	96.066
385	1.834	520	188.899	655	85.532
390	2.488	525	202.870	660	75.927
395	3.873	530	213.461	665	67.065
400	6.658	535	219.840	670	58.832
405	12.697	540	225.003	675	51.507
410	26.390	545	227.824	680	45.024
415	53.901	550	230.009	685	39.327
420	103.981	555	231.964	690	34.190
425	174.322	560	231.873	695	29.814
430	260.864	565	232.344	700	25.898
435	370.074	570	231.747	705	22.440
440	445.349	575	229.774	710	19.455
445	363.056	580	227.080	715	16.831
450	214.255	585	223.670	720	14.595
455	129.337	590	219.655	725	12.604
460	83.640	595	214.248	730	10.946
465	53.938	600	206.557	735	9.460
470	39.103	605	198.746	740	8.246
475	33.507	610	189.502	745	7.148
480	32.849	615	179.101	750	6.189
485	38.368	620	167.786	755	5.390
490	50.926	625	156.198	760	4.669
495	70.354	630	143.459	765	4.073
500	94.997	635	130.996	770	3.562
505	122.056	640	118.898	775	3.106
510	148.026	645	107.277	780	0.470



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Page 4 of 4

CIE Chromaticity Diagram

