

REPORT NUMBER: RAB04745

PAGE: 1 OF 10

ISSUE DATE: 01/02/19

DATE SAMPLE TESTED: 01/02/19

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: W34-150L-830

LUMINAIRE: WALLPACK WITH ALUMINUM PRECISION DIE CAST CONSTRUCTION, CLEAR GLASS LENS AND SPECULAR ALUMINUM REFLECTOR.

LAMPS: THREE HUNDRED AND FORTY TWO WHITE LIGHT EMITTING DIODES (LEDs)

ABSOLUTE: NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

WATT: TOTAL INPUT WATTS = 136.4 W AT 120.0 VAC.

LED DRIVER: RDD-U130-A2300-DO1

PROCEDURE: TEST PROCEDURE: IESNA LM-79-08

NOTE: LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.1

NVLAP LAB CODE: ACCREDITED LABORATORY CODE 201058-0



THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.

Checked X.CAO

Approved D.WANG-MUNSON

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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

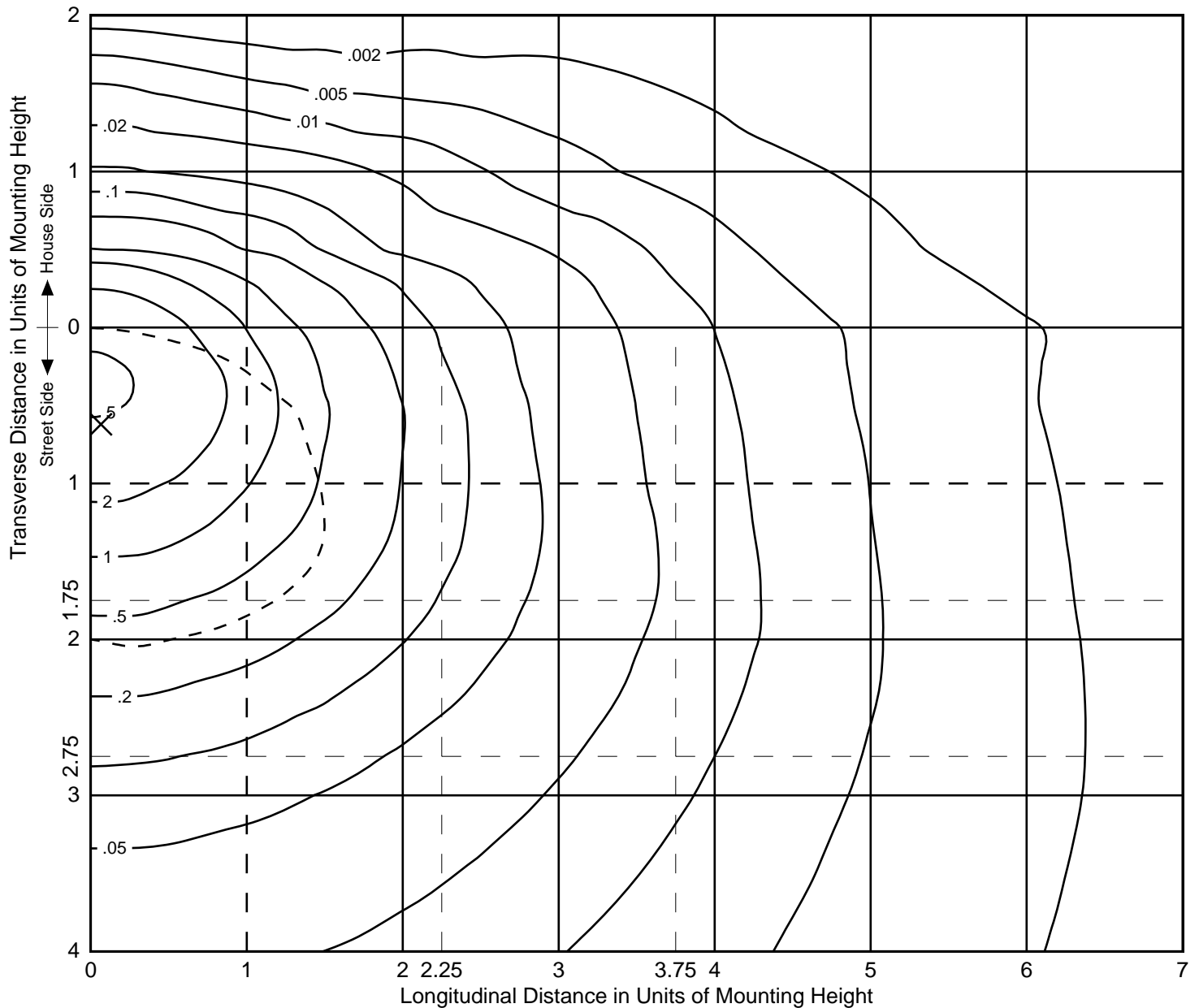
Values based on 32-foot mounting height

IES Classification: (does not classify)

Cutoff Classification (deprecated): Semicutoff

— — — — — 1/2 Maximum Candela trace

× Maximum Candela point



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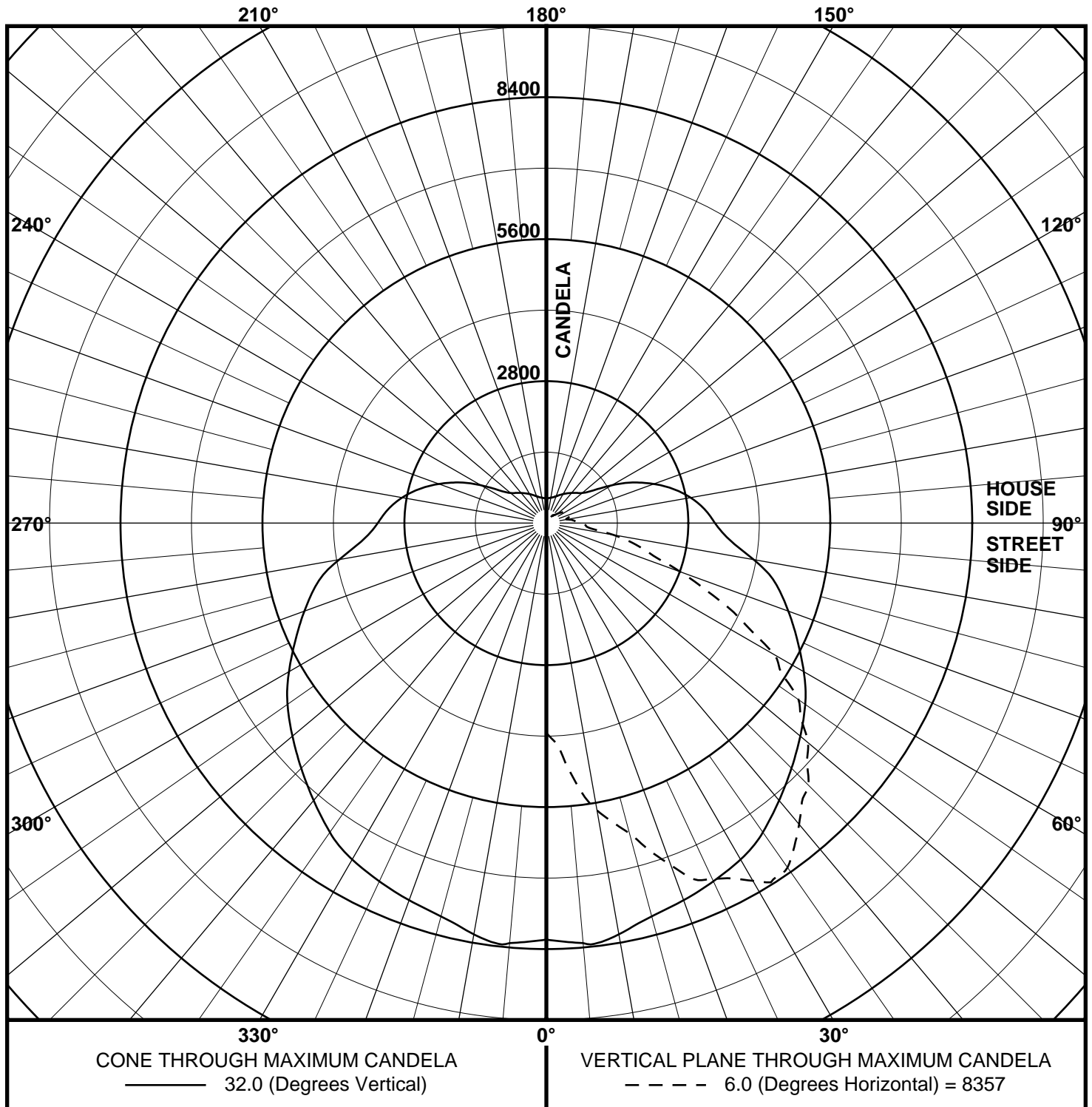
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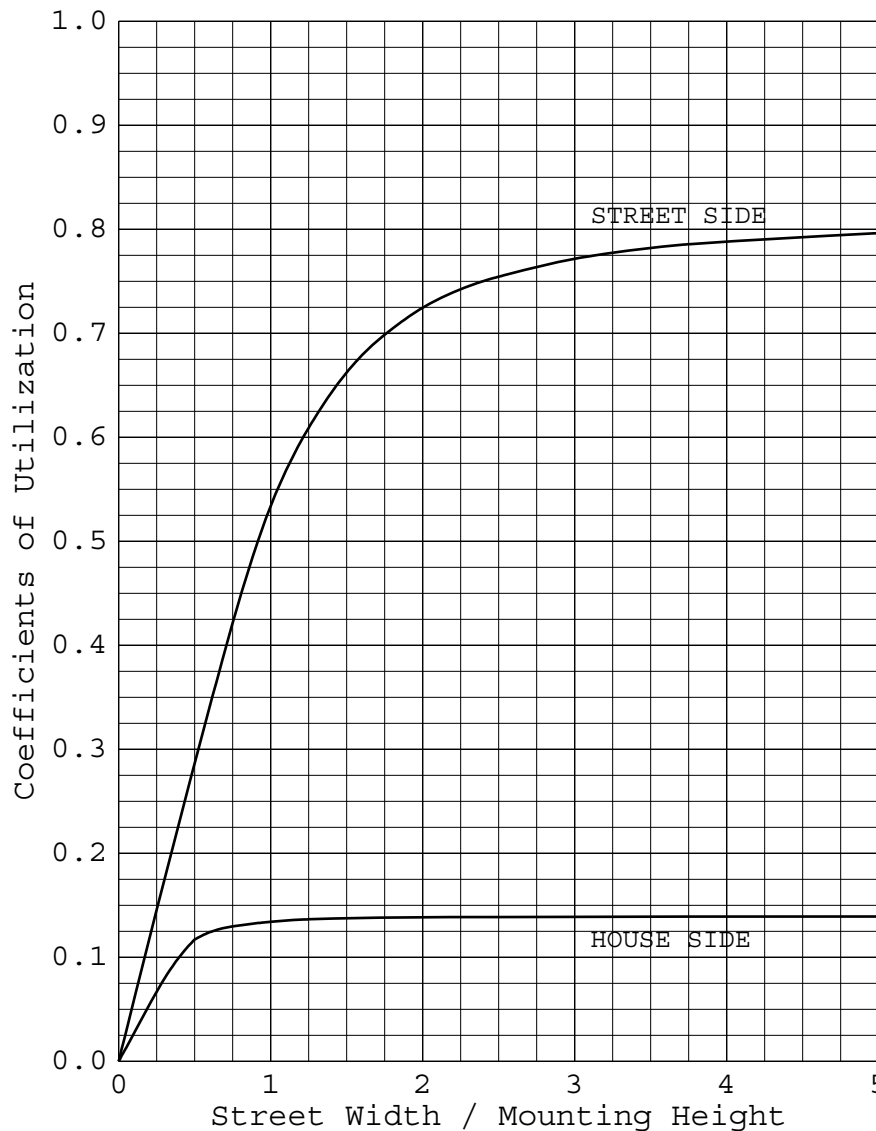
MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	11873	81.6
DOWNWARD HOUSE SIDE	2040	14.0
DOWNWARD TOTAL	13913	95.6
UPWARD STREET SIDE	585	4.0
UPWARD HOUSE SIDE	56	0.4
UPWARD TOTAL	641	4.4
TOTAL FLUX	14554	100.0

EFFICACY = 106.7 lm/W

ALL CANDELA AND LUMENS 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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BUG Rating			B2 U3 G3		
Zonal Summary			Zone Ratings		
			B	U	G
Forward					
FL	(0° – 30°)	11873			
FM	(30° – 60°)	2449.3			
FH	(60° – 80°)	6503.6			
FVH	(80° – 90°)	2569.0			G2
		351.6			G3
Backward					
BL	(0° – 30°)	2040			
BM	(30° – 60°)	952.0	B2		
BH	(60° – 80°)	872.8	B1		
BVH	(80° – 90°)	192.4	B1		G1
		22.5			G1
Upward					
UL	(90° – 100°)	641			
UH	(100° – 180°)	178.6		U3	
		462.1		U3	
Trapped Light					
Total Flux					
		0			
		14554			
		100.0			

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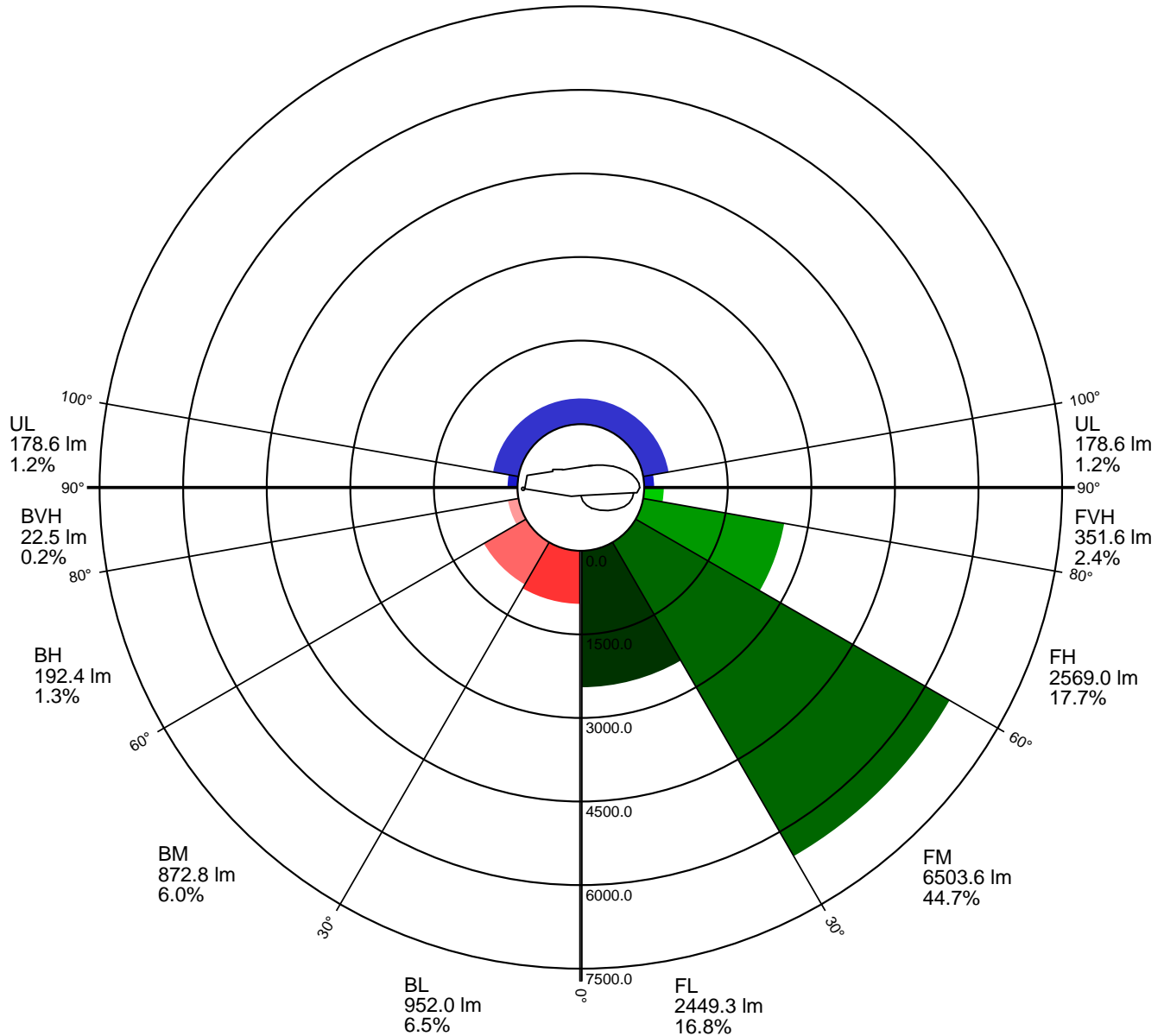
PAGE: 6 OF 10

DATE SAMPLE TESTED: 01/02/19

Zonal Lumen Summary

(Linear scale)

UH
462.1 lm
3.2%

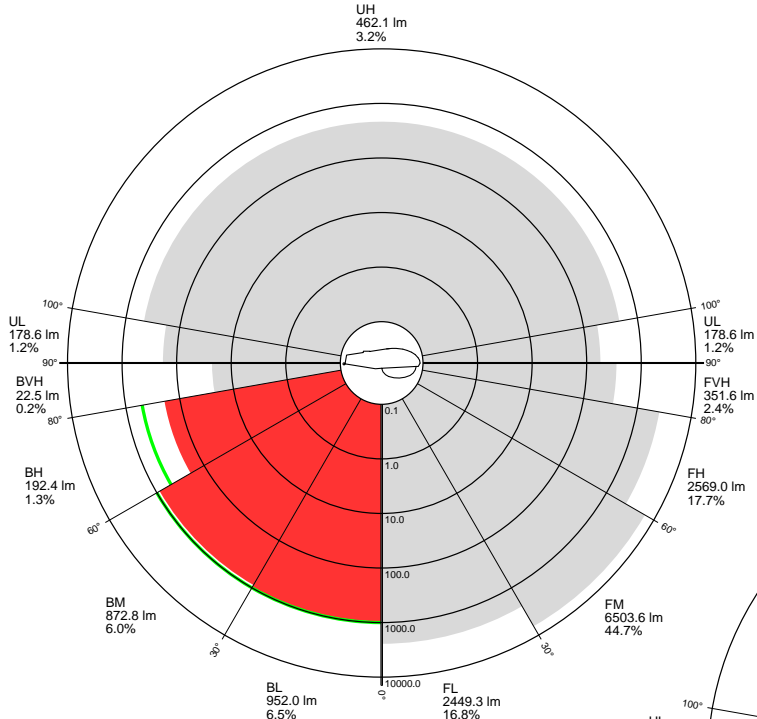


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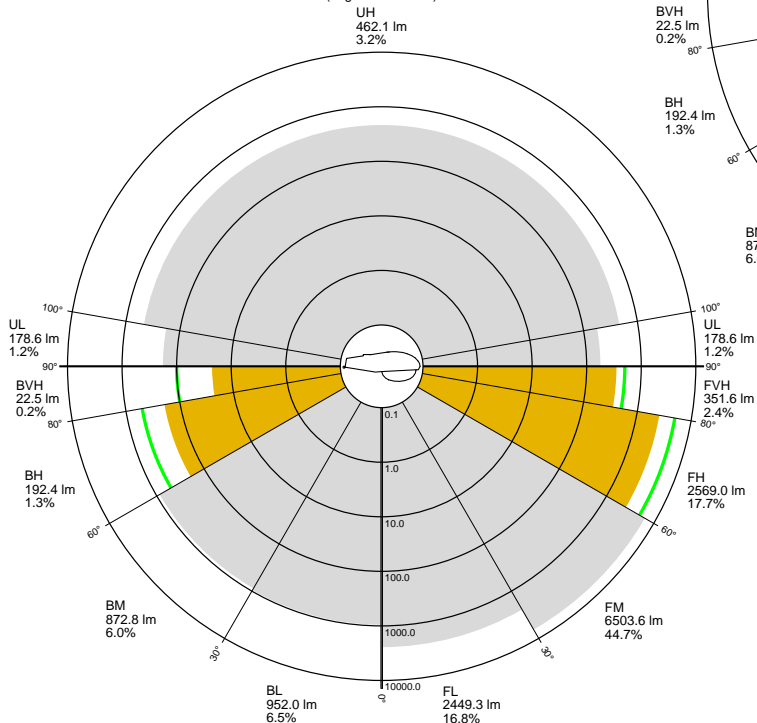
Backlight Rating Details

(Logarithmic scale)



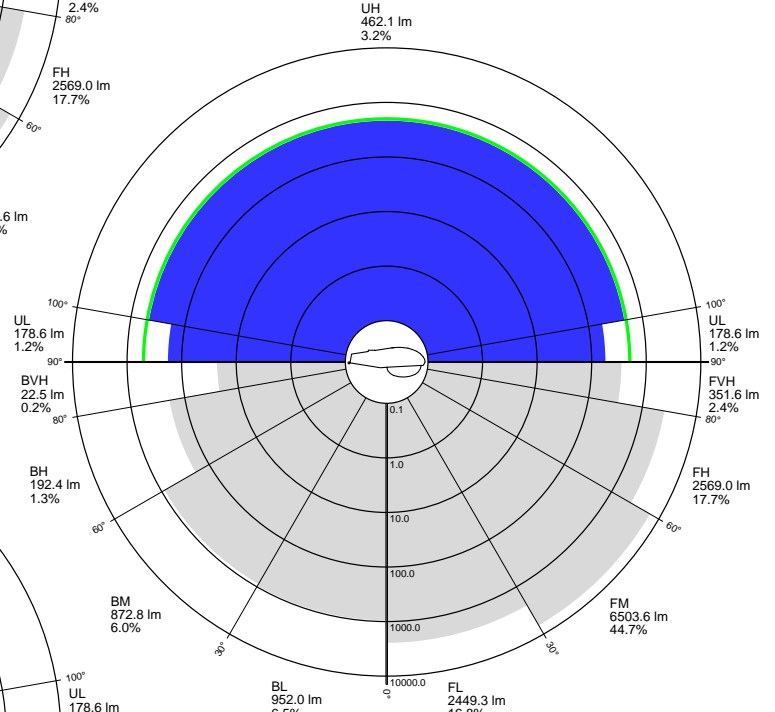
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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CANDELA TABULATION

	STREET SIDE			LATERAL ANGLE							
	0.0	5.0	6.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
	180.0	9.	9.	9.	9.	9.	9.	9.	9.	9.	9.
	175.0	3.	3.	3.	4.	6.	8.	9.	11.	12.	14.
	165.0	22.	21.	22.	21.	19.	17.	14.	13.	12.	14.
	155.0	58.	58.	59.	56.	49.	44.	36.	26.	18.	15.
	145.0	145.	145.	146.	138.	119.	101.	76.	51.	32.	21.
	135.0	225.	224.	226.	219.	204.	182.	147.	105.	58.	28.
	125.0	343.	352.	359.	367.	297.	264.	198.	144.	95.	43.
	115.0	432.	430.	429.	404.	352.	332.	241.	152.	107.	69.
	105.0	471.	467.	466.	408.	308.	230.	190.	146.	117.	86.
	95.0	543.	549.	550.	511.	450.	370.	298.	228.	175.	116.
	92.5	584.	588.	587.	557.	504.	424.	357.	266.	203.	132.
	90.0	635.	643.	642.	606.	559.	499.	438.	320.	250.	160.
	87.5	760.	756.	758.	732.	687.	618.	478.	426.	347.	234.
	85.0	790.	796.	797.	779.	726.	642.	631.	586.	489.	336.
V	82.5	926.	950.	950.	940.	942.	950.	931.	821.	671.	489.
E	80.0	1320.	1338.	1343.	1320.	1292.	1250.	1191.	1043.	906.	685.
R	77.5	1669.	1681.	1687.	1667.	1632.	1557.	1446.	1364.	1223.	886.
T	75.0	1947.	1977.	1995.	1968.	1902.	1840.	1864.	1815.	1578.	1093.
I	72.5	2249.	2265.	2288.	2245.	2242.	2286.	2397.	2289.	1906.	1348.
C	70.0	2783.	2767.	2816.	2799.	2823.	2939.	2952.	2754.	2248.	1659.
A	67.5	3251.	3312.	3350.	3389.	3428.	3547.	3567.	3204.	2598.	2059.
L	65.0	3898.	3944.	3982.	3975.	4055.	4118.	4028.	3632.	2902.	2436.
	62.5	4345.	4454.	4519.	4590.	4655.	4641.	4488.	4002.	3208.	2768.
A	60.0	4985.	5145.	5186.	5118.	5058.	5066.	4925.	4297.	3584.	3047.
N	57.5	5309.	5443.	5498.	5586.	5552.	5517.	5242.	4563.	4032.	3251.
G	55.0	5925.	6038.	6072.	5975.	5914.	5850.	5463.	4866.	4410.	3433.
L	52.5	6098.	6281.	6332.	6340.	6228.	6089.	5726.	5250.	4728.	3583.
E	50.0	6563.	6712.	6739.	6618.	6513.	6405.	6002.	5624.	4920.	3794.
	47.5	6789.	6937.	6975.	6893.	6871.	6646.	6318.	5864.	5116.	3957.
	45.0	7089.	7280.	7312.	7210.	7092.	6886.	6622.	6052.	5195.	4190.
	42.5	7299.	7439.	7463.	7381.	7348.	7185.	6826.	6176.	5246.	4299.
	40.0	7608.	7747.	7755.	7704.	7642.	7383.	6910.	6234.	5339.	4450.
	37.5	7908.	8046.	8037.	7903.	7858.	7463.	6963.	6241.	5471.	4507.
	35.0	8193.	8292.	8293.	8123.	7892.	7467.	6997.	6257.	5449.	4589.
	32.0<<	8215.	8315.	8357.	8029.	7795.	7445.	6838.	6233.	5461.	4700.
	30.0	8031.	8110.	8146.	7942.	7699.	7312.	6805.	6243.	5380.	4589.
	25.0	7677.	7717.	7741.	7528.	7442.	7056.	6594.	5997.	5325.	4685.
	20.0	7145.	7163.	7179.	7191.	6828.	6525.	6022.	5600.	5108.	4609.
	15.0	6391.	6324.	6338.	6205.	6123.	5956.	5744.	5269.	4958.	4478.
	10.0	5794.	5766.	5755.	5690.	5451.	5392.	5271.	4951.	4700.	4356.
	5.0	4851.	4816.	4839.	4798.	4737.	4734.	4618.	4487.	4288.	4202.
	0.0	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

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CANDELA TABULATION

HOUSE SIDE		LATERAL ANGLE									
		90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0 180.0
	180.0	9.	9.	9.	9.	9.	9.	9.	9.	9.	9.
	175.0	14.	14.	14.	13.	12.	11.	10.	9.	9.	9.
	165.0	14.	15.	15.	15.	14.	13.	13.	13.	13.	14.
	155.0	15.	16.	16.	16.	15.	15.	16.	16.	17.	17.
	145.0	18.	17.	17.	16.	16.	16.	17.	17.	18.	18.
	135.0	23.	19.	18.	16.	15.	15.	16.	16.	16.	16.
	125.0	37.	27.	20.	16.	15.	13.	13.	13.	13.	13.
	115.0	55.	41.	24.	17.	14.	13.	11.	11.	11.	12.
	105.0	70.	57.	30.	20.	15.	13.	12.	12.	11.	13.
	95.0	43.	41.	36.	25.	16.	13.	11.	10.	10.	12.
	92.5	43.	38.	37.	26.	16.	13.	10.	9.	9.	11.
	90.0	68.	43.	44.	29.	17.	13.	10.	9.	9.	11.
	87.5	142.	63.	58.	35.	19.	13.	10.	9.	9.	10.
	85.0	250.	100.	82.	45.	22.	13.	10.	9.	9.	10.
V	82.5	399.	178.	115.	57.	25.	13.	10.	8.	8.	9.
E	80.0	513.	309.	151.	71.	29.	13.	9.	7.	7.	8.
R	77.5	642.	441.	195.	93.	35.	14.	9.	7.	6.	7.
T	75.0	755.	593.	256.	125.	43.	14.	9.	6.	5.	6.
I	72.5	970.	814.	307.	160.	57.	16.	8.	6.	5.	5.
C	70.0	1131.	930.	346.	200.	82.	21.	8.	6.	4.	4.
A	67.5	1288.	1059.	377.	246.	108.	42.	9.	5.	4.	3.
L	65.0	1441.	1221.	417.	295.	138.	63.	29.	6.	3.	2.
	62.5	1612.	1383.	483.	354.	173.	84.	49.	32.	15.	7.
A	60.0	1800.	1570.	592.	413.	218.	109.	67.	51.	48.	45.
N	57.5	1996.	1741.	729.	465.	263.	138.	86.	66.	64.	63.
G	55.0	2165.	1875.	880.	519.	315.	172.	112.	82.	77.	79.
L	52.5	2336.	2058.	1085.	582.	378.	210.	138.	105.	91.	85.
E	50.0	2519.	2216.	1278.	652.	439.	255.	171.	135.	118.	102.
	47.5	2648.	2336.	1510.	733.	497.	311.	203.	163.	145.	135.
	45.0	2825.	2516.	1753.	838.	568.	382.	248.	190.	171.	160.
	42.5	2946.	2673.	1917.	946.	637.	455.	313.	225.	194.	184.
	40.0	3049.	2818.	2115.	1114.	714.	540.	392.	289.	231.	214.
	37.5	3134.	2936.	2261.	1341.	810.	637.	482.	368.	303.	273.
	35.0	3197.	2991.	2455.	1602.	921.	728.	585.	474.	393.	359.
	32.0<<	3325.	3134.	2596.	1894.	1117.	842.	715.	608.	528.	493.
	30.0	3394.	3206.	2673.	2062.	1324.	906.	791.	694.	622.	583.
	25.0	3578.	3383.	2823.	2512.	1924.	1353.	1005.	890.	834.	798.
	20.0	3771.	3526.	3148.	2802.	2482.	2064.	1800.	1381.	1204.	1114.
	15.0	3927.	3715.	3358.	3033.	2867.	2730.	2492.	2283.	2168.	2015.
	10.0	4052.	3895.	3758.	3421.	3244.	3023.	2967.	2938.	2947.	2860.
	5.0	4115.	4024.	3884.	3851.	3782.	3672.	3579.	3459.	3428.	3400.
	0.0	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.	4136.

CONE OF MAXIMUM CANDELA

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	98
5- 10	295
10- 15	491
15- 20	673
20- 25	843
25- 30	1001
30- 35	1146
35- 40	1245
40- 45	1290
45- 50	1293
50- 55	1247
55- 60	1156
60- 65	1004
65- 70	798
70- 75	571
75- 80	388
80- 85	233
85- 90	141
90- 95	100
95-100	78
100-105	65
105-110	66
110-115	65
115-120	62
120-125	55
125-130	43
130-135	33
135-140	25
140-145	18
145-150	12
150-155	8
155-160	5
160-165	3
165-170	2
170-175	1
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	393
0- 20	1558
0- 30	3401
0- 40	5792
0- 50	8375
0- 60	10778
0- 70	12580
0- 80	13539
0- 90	13913
0-100	14092
0-110	14222
0-120	14349
0-130	14447
0-140	14506
0-150	14536
0-160	14549
0-170	14553
0-180	14554

REPORT NUMBER: RAB04746
DATE: 1/2/2019
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
CATALOG NUMBER: W34-150L-830

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: WALLPACK WITH ALUMINUM PRECISION DIE CAST CONSTRUCTION, CLEAR GLASS LENS AND SPECULAR ALUMINUM REFLECTOR.

LAMP: THREE HUNDRED AND FORTY TWO WHITE LIGHT EMITTING DIODES (LEDs)

DRIVER: RDD-U130-A2300-DO1

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:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/08/19
	OCEAN OPTICS QE65PRO Spectroradiometer	12/11/19
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	12/11/19

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

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	14554 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4268
Chromaticity Ordinate y	0.3962
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2474
Chromaticity Ordinate v'	0.5167
Correlated Color Temp CCT (K)	3112
ANSI C78.377-2008 Duv	-0.002
Total Radiant Flux (milliWatts)	44874 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	1.14
Input Power (Watts)	136.4
Input Power Factor (%)	99.8
Input Current THD (%)	2.3
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	106.7
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.504
Input Power (Watts)	133.1
Input Power Factor (%)	95.4
Input Current THD (%)	6.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	81
R2 Dark greyish yellow	91
R3 Strong yellowish green	96
R4 Moderate yellowish green	80
R5 Light bluish green	81
R6 Light blue	88
R7 Light violet	83
R8 Light reddish purple	60
R9 Strong red	9
R10 Strong yellow	78
R11 Strong green	78
R12 Strong blue	70
R13 Light yellowish pink (skin)	83
R14 Moderate olive green (leaf)	98

*NOTE:

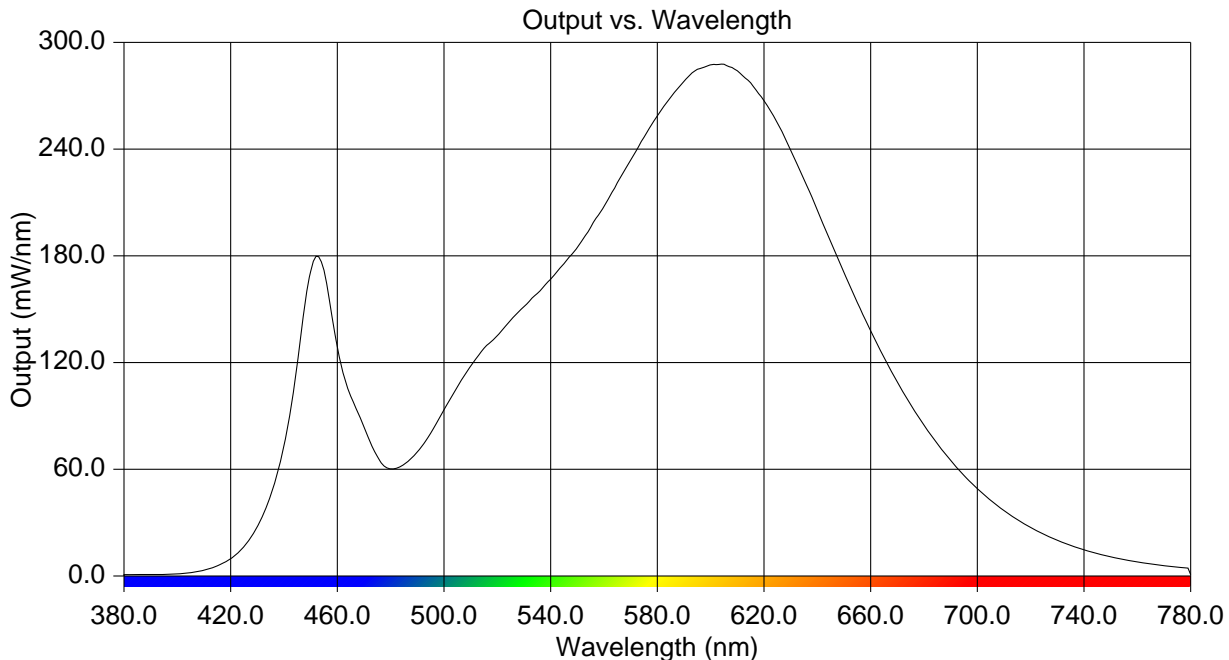
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.739	515	128.105	650	170.623
385	0.775	520	135.146	655	153.806
390	0.820	525	143.731	660	137.871
395	0.891	530	151.488	665	122.915
400	1.207	535	158.928	670	109.032
405	1.878	540	166.955	675	96.483
410	3.219	545	175.688	680	84.729
415	5.721	550	184.694	685	74.369
420	9.827	555	196.109	690	64.939
425	16.562	560	207.877	695	56.549
430	27.660	565	221.231	700	49.159
435	45.668	570	234.108	705	42.664
440	73.480	575	246.782	710	36.818
445	119.361	580	259.040	715	31.686
450	171.313	585	269.070	720	27.207
455	171.988	590	278.261	725	23.398
460	128.840	595	285.018	730	20.055
465	101.210	600	287.594	735	17.154
470	83.967	605	287.870	740	14.763
475	67.252	610	284.187	745	12.635
480	60.140	615	277.414	750	10.784
485	62.693	620	267.332	755	9.224
490	69.651	625	254.809	760	7.893
495	80.310	630	239.520	765	6.754
500	93.578	635	222.948	770	5.799
505	106.312	640	205.446	775	4.966
510	117.919	645	188.139	780	0.751



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CIE Chromaticity Diagram

