

REPORT NUMBER: RAB04729

PAGE: 1 OF 10

ISSUE DATE: 12/13/18

DATE SAMPLE TESTED: 12/13/18

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: W34-70L-830-480

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

LAMPS: ONE HUNDRED AND FORTY FOUR WHITE LIGHT EMITTING DIODES (LEDs)

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

WATT: TOTAL INPUT WATTS = 67.3 W AT 480.0 VAC.

LED DRIVER: LED DRIVER: XH095C275V054BSF1M

PROCEDURE: TEST PROCEDURE: IESNA LM-79-08

NOTE: LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE
AMBIENT: 24.0

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

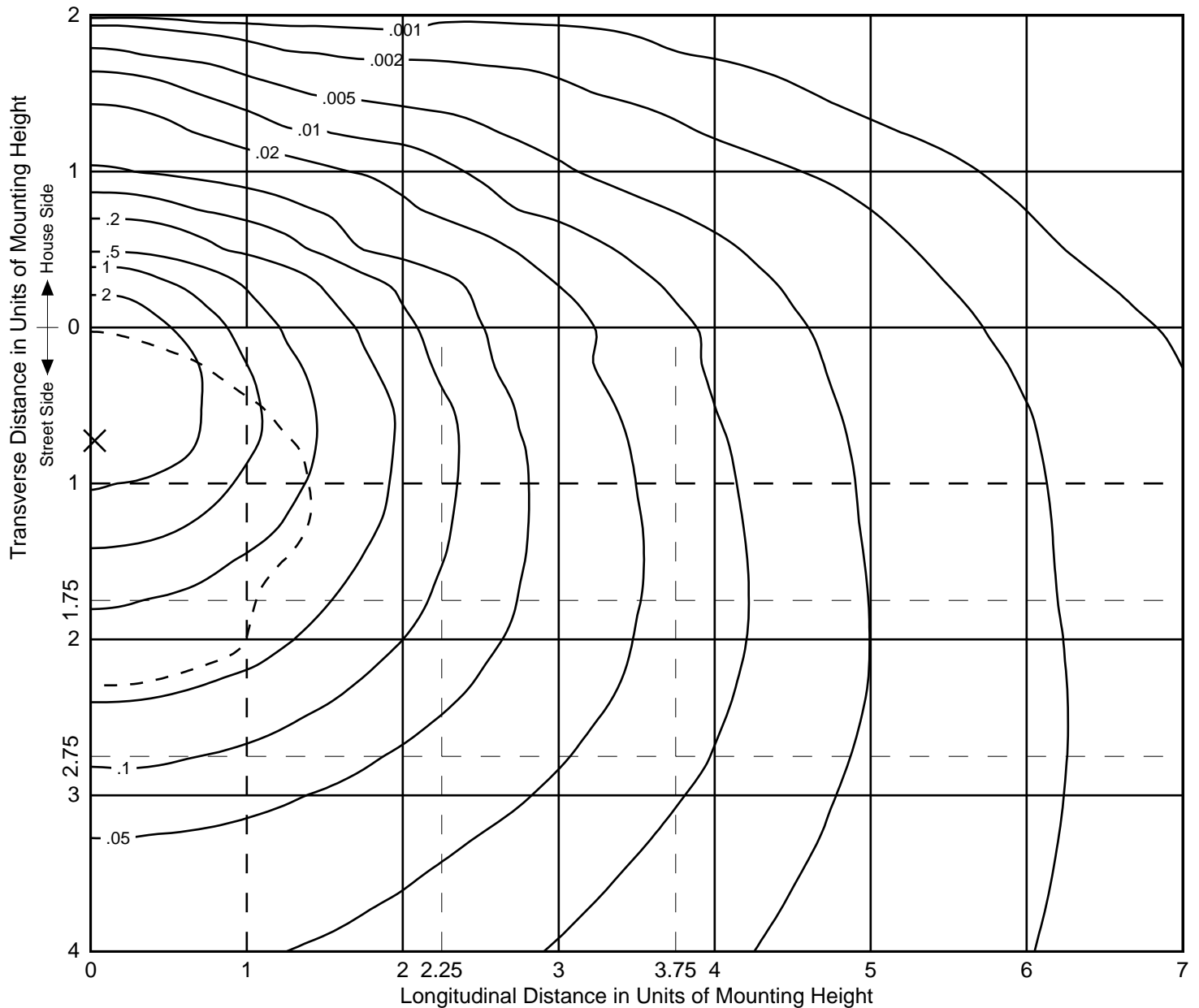
Values based on 24-foot mounting height

IES Classification: (does not classify)

Cutoff Classification (deprecated): Semicutoff

— — — — — 1/2 Maximum Candela trace

× Maximum Candela point



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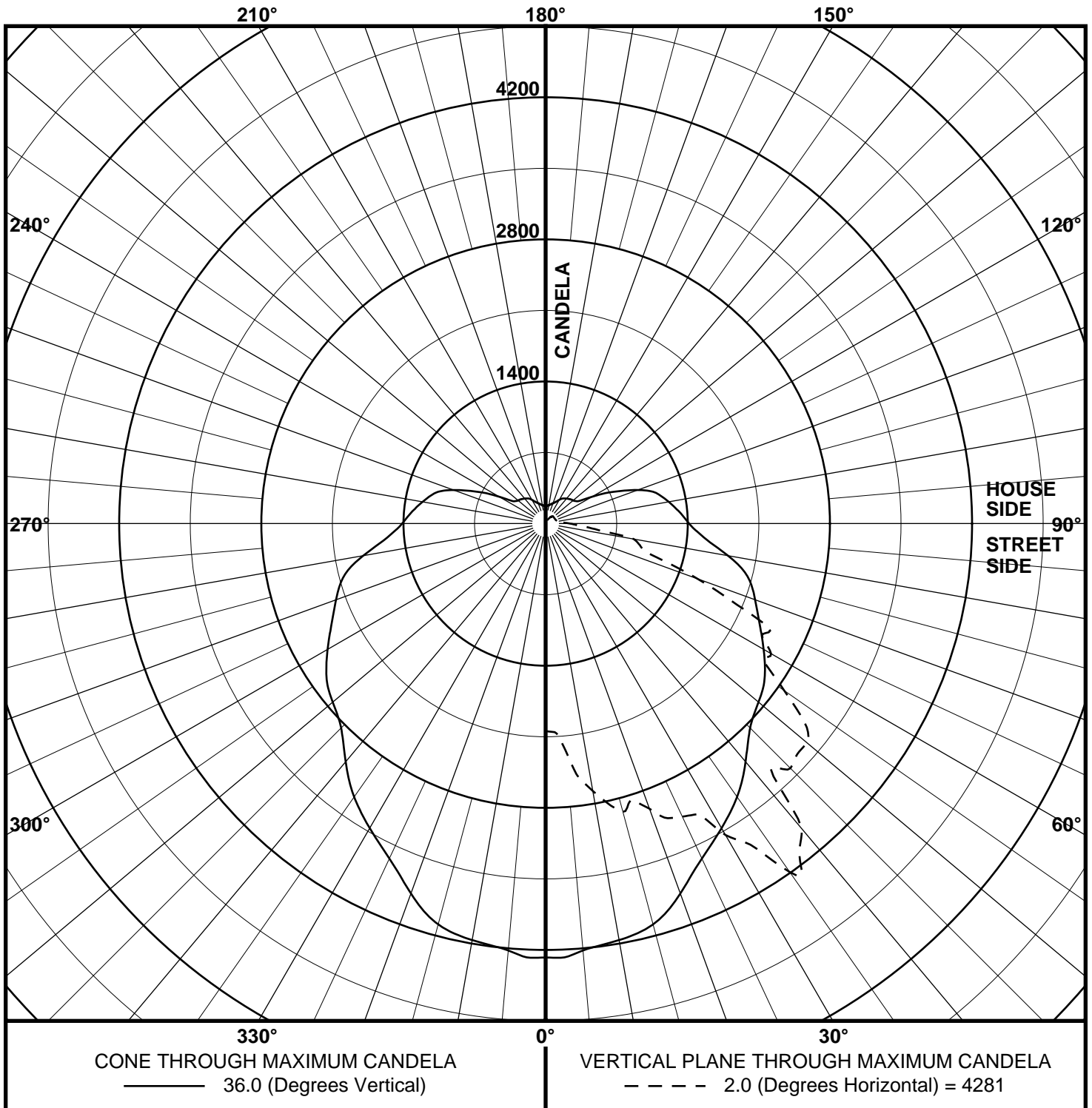
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



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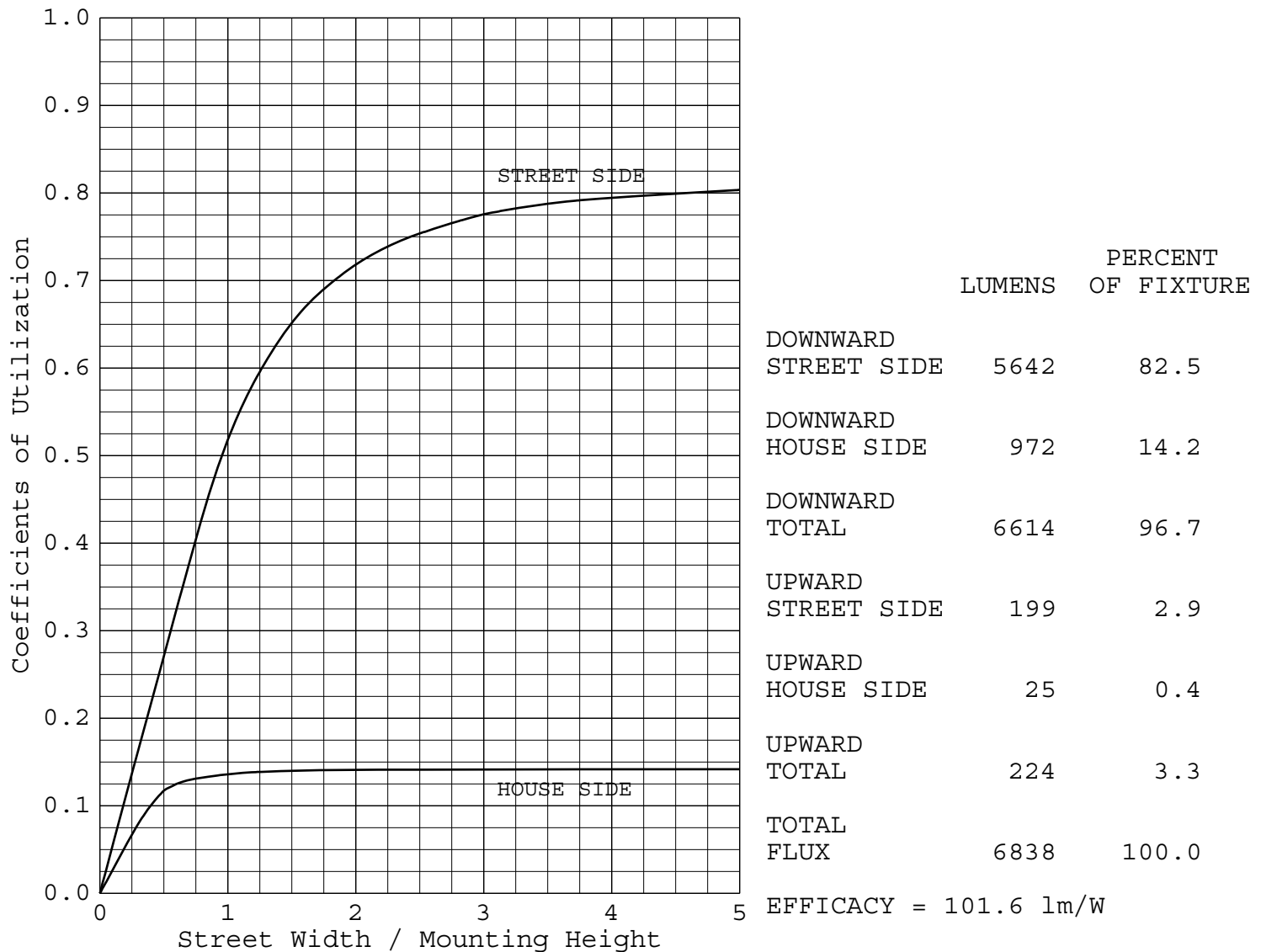
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



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			B1 U3 G2		
Zonal Summary			Zone Ratings		
			B	U	G
Forward					
FL	(0° – 30°)	5642			
FM	(30° – 60°)	1087.4			
FH	(60° – 80°)	3024.1			
FVH	(80° – 90°)	1341.6			G1
		189.2			G2
Backward					
BL	(0° – 30°)	972			
BM	(30° – 60°)	444.1	B1		
BH	(60° – 80°)	423.0	B1		
BVH	(80° – 90°)	94.0	B0		G0
		10.7			G1
Upward					
UL	(90° – 100°)	224			
UH	(100° – 180°)	65.7		U3	
		158.3		U3	
Trapped Light					
Total Flux					
		0			
		6838			
		100.0			

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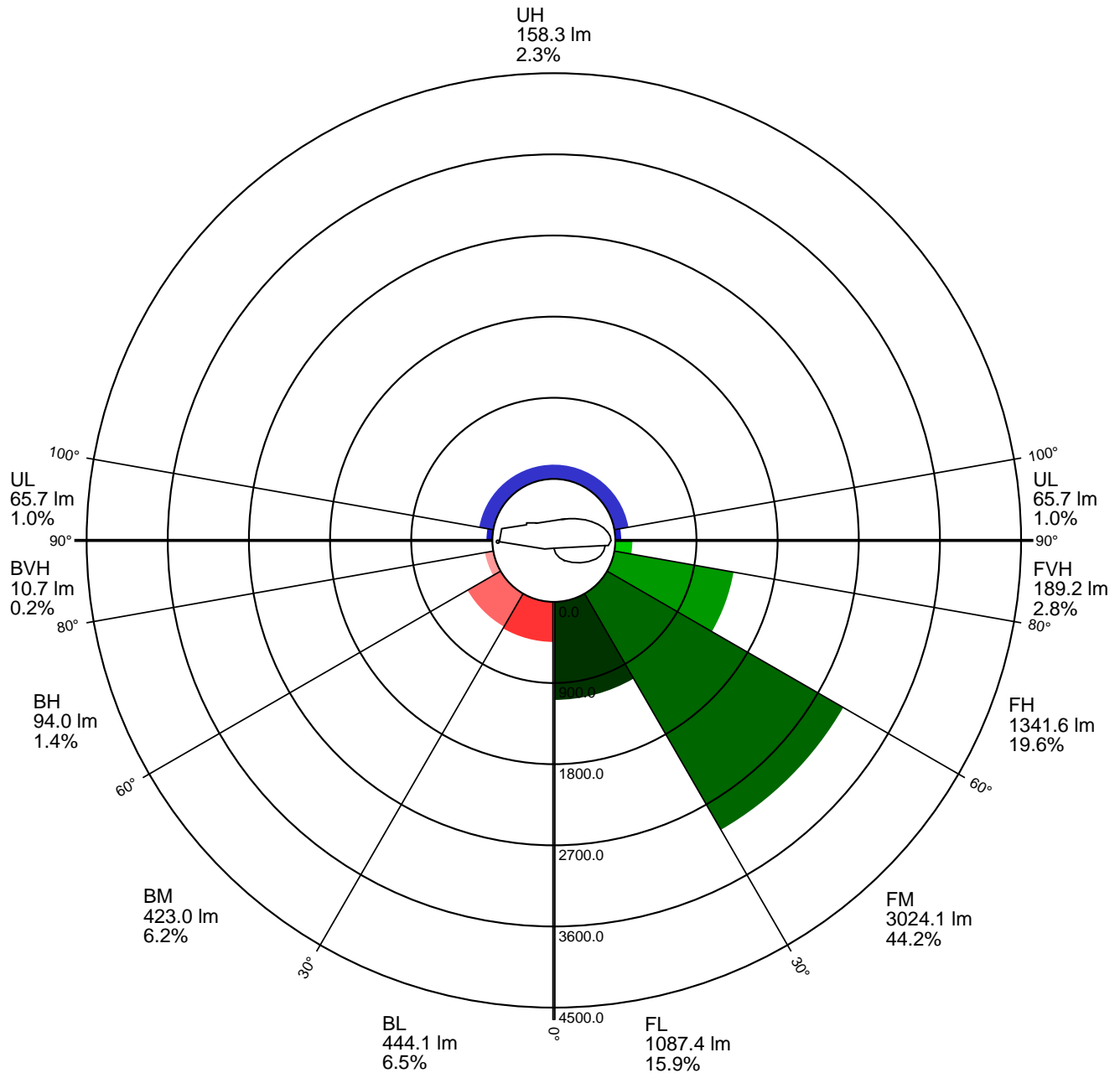
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Zonal Lumen Summary

(Linear scale)

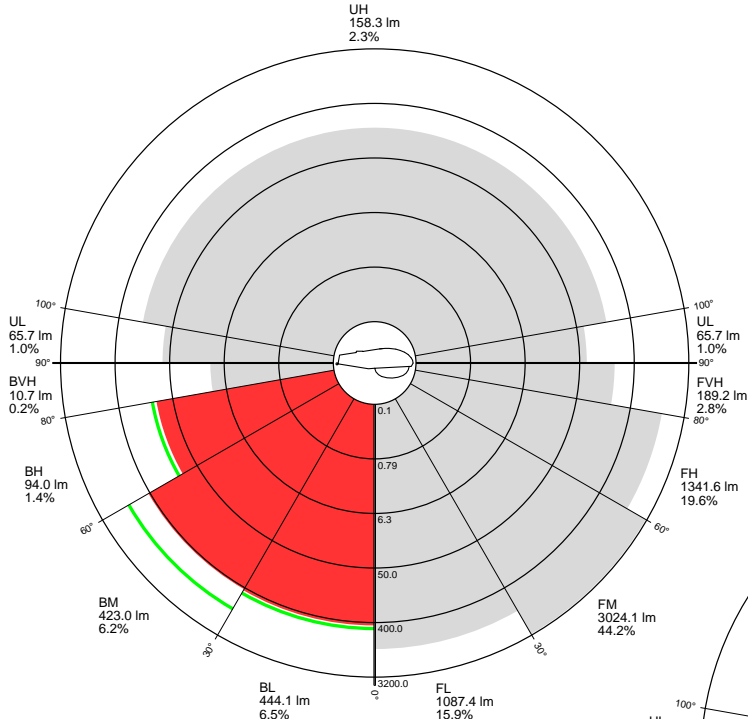


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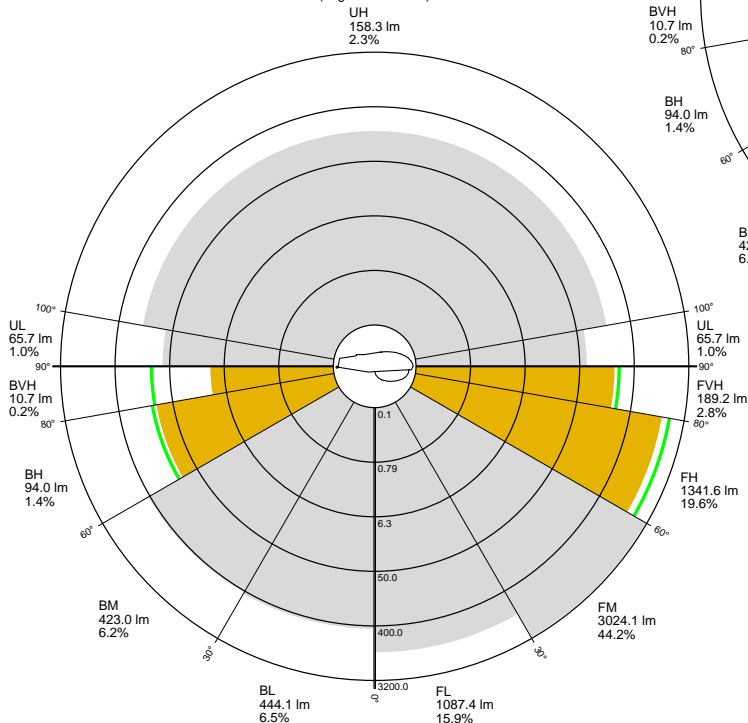
Backlight Rating Details

(Logarithmic scale)



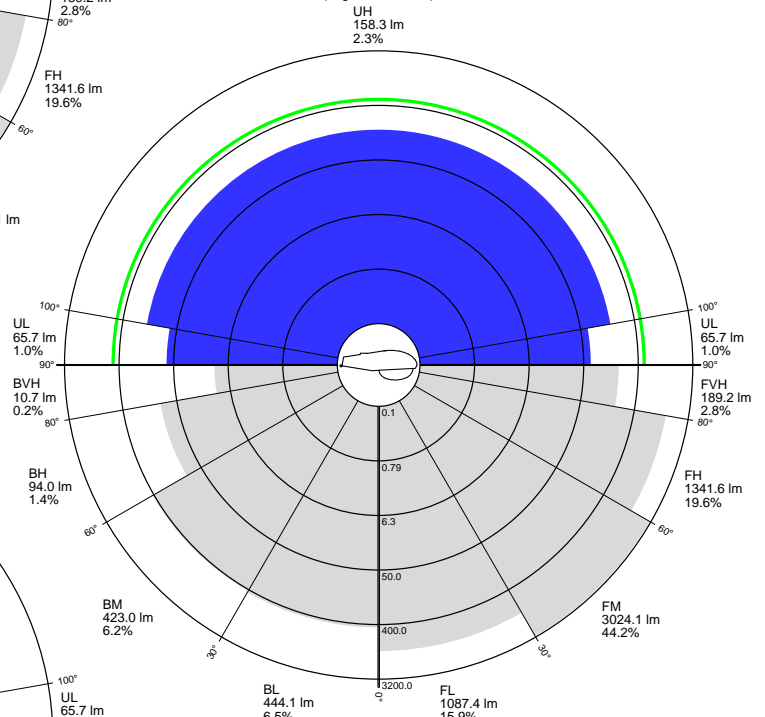
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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CANDELA TABULATION

	STREET SIDE										
	0.0	2.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
	180.0	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
	175.0	2.	2.	2.	2.	3.	4.	4.	5.	6.	6.
	165.0	11.	11.	11.	10.	9.	8.	7.	6.	6.	7.
	155.0	30.	30.	30.	28.	26.	21.	17.	12.	9.	7.
	145.0	68.	69.	68.	64.	57.	46.	36.	25.	15.	10.
	135.0	103.	103.	102.	96.	85.	71.	57.	41.	27.	14.
	125.0	112.	112.	111.	107.	94.	78.	64.	50.	35.	19.
	115.0	104.	104.	103.	97.	86.	74.	63.	52.	42.	32.
	105.0	127.	127.	126.	115.	102.	85.	73.	62.	51.	37.
	95.0	144.	143.	143.	137.	135.	124.	111.	100.	88.	57.
	92.5	184.	184.	187.	180.	169.	148.	135.	129.	111.	69.
	90.0	235.	238.	236.	226.	211.	184.	180.	172.	140.	88.
	87.5	296.	300.	299.	285.	274.	267.	261.	235.	199.	119.
	85.0	392.	408.	396.	382.	370.	357.	392.	358.	271.	173.
V	82.5	553.	554.	558.	556.	621.	580.	548.	452.	350.	259.
E	80.0	878.	882.	879.	874.	811.	714.	618.	559.	481.	355.
R	77.5	931.	943.	943.	919.	843.	764.	758.	759.	638.	465.
T	75.0	973.	993.	971.	961.	961.	948.	1036.	983.	791.	576.
I	72.5	1197.	1215.	1204.	1226.	1264.	1330.	1352.	1222.	949.	705.
C	70.0	1585.	1595.	1643.	1674.	1682.	1669.	1616.	1422.	1121.	860.
A	67.5	1953.	1963.	1948.	1964.	2071.	1990.	1779.	1549.	1292.	1051.
L	65.0	2381.	2417.	2407.	2402.	2214.	2012.	1932.	1788.	1429.	1217.
	62.5	2378.	2403.	2384.	2322.	2249.	2214.	2087.	1988.	1614.	1317.
A	60.0	2552.	2565.	2526.	2502.	2454.	2320.	2391.	2102.	1822.	1402.
N	57.5	2539.	2562.	2504.	2587.	2583.	2680.	2548.	2229.	1940.	1458.
G	55.0	2859.	2871.	2847.	2885.	3002.	2861.	2607.	2405.	2025.	1524.
L	52.5	3231.	3211.	3184.	3228.	3157.	2913.	2702.	2575.	2120.	1566.
E	50.0	3370.	3355.	3365.	3217.	3160.	3001.	2890.	2652.	2171.	1617.
	47.5	3403.	3363.	3374.	3358.	3188.	3117.	3066.	2659.	2189.	1704.
	45.0	3449.	3410.	3394.	3294.	3267.	3414.	3170.	2684.	2209.	1809.
	42.5	3289.	3283.	3297.	3484.	3707.	3608.	3067.	2679.	2251.	1881.
	40.0	3881.	3923.	3922.	3953.	3916.	3581.	3008.	2674.	2289.	1934.
	37.5	4056.	4103.	4086.	4147.	3890.	3354.	2930.	2663.	2339.	2025.
	36.0<<	4275.	4281.	4221.	4089.	3641.	3288.	2849.	2635.	2324.	2067.
	35.0	4179.	4192.	4136.	3937.	3523.	3233.	2860.	2638.	2349.	2093.
	30.0	3533.	3543.	3553.	3442.	3130.	3059.	2785.	2650.	2417.	2209.
	25.0	3198.	3186.	3154.	3118.	3041.	2851.	2762.	2584.	2599.	2267.
	20.0	3016.	2991.	2966.	2947.	2944.	2674.	2629.	2568.	2478.	2088.
	15.0	2943.	2940.	2900.	2794.	2656.	2810.	2605.	2676.	2532.	2172.
	10.0	2681.	2676.	2655.	2757.	2811.	2645.	2506.	2397.	2191.	2087.
	5.0	2232.	2244.	2241.	2205.	2206.	2252.	2231.	2141.	1987.	1920.
	0.0	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.

||
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	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
	175.0	7.	7.	6.	6.	6.	5.	5.	4.	4.	4.
	165.0	7.	7.	7.	7.	6.	6.	6.	6.	6.	6.
	155.0	7.	7.	7.	7.	7.	7.	7.	8.	7.	8.
	145.0	8.	8.	7.	7.	7.	7.	8.	8.	8.	8.
	135.0	10.	8.	8.	7.	7.	7.	7.	8.	8.	8.
	125.0	14.	11.	8.	7.	7.	6.	6.	7.	7.	7.
	115.0	23.	16.	10.	8.	7.	6.	6.	6.	6.	6.
	105.0	26.	22.	13.	9.	7.	6.	6.	6.	6.	6.
	95.0	23.	22.	17.	11.	7.	6.	5.	5.	5.	5.
	92.5	28.	23.	18.	12.	8.	6.	5.	4.	4.	4.
	90.0	42.	27.	22.	13.	8.	5.	4.	4.	4.	4.
	87.5	70.	39.	28.	16.	8.	5.	4.	4.	4.	4.
	85.0	116.	58.	39.	19.	9.	5.	4.	3.	3.	3.
V	82.5	171.	100.	54.	24.	11.	5.	4.	3.	3.	3.
E	80.0	227.	166.	72.	31.	13.	6.	4.	3.	2.	3.
R	77.5	306.	239.	92.	40.	15.	6.	3.	3.	2.	2.
T	75.0	387.	294.	112.	53.	19.	6.	3.	3.	2.	2.
I	72.5	451.	341.	140.	70.	27.	7.	3.	2.	2.	1.
C	70.0	521.	427.	168.	95.	38.	9.	3.	2.	2.	1.
A	67.5	597.	550.	190.	121.	50.	21.	5.	2.	1.	1.
L	65.0	687.	644.	202.	150.	66.	33.	16.	4.	1.	0.
	62.5	767.	719.	229.	180.	84.	43.	29.	22.	12.	7.
A	60.0	848.	817.	288.	211.	106.	54.	40.	35.	30.	30.
N	57.5	925.	892.	360.	234.	129.	68.	50.	47.	47.	46.
G	55.0	959.	948.	433.	256.	159.	83.	62.	57.	59.	59.
L	52.5	1026.	1019.	524.	278.	191.	99.	73.	68.	68.	70.
E	50.0	1118.	1054.	635.	299.	225.	122.	84.	76.	80.	81.
	47.5	1180.	1080.	744.	328.	254.	158.	96.	83.	82.	85.
	45.0	1243.	1141.	841.	359.	281.	200.	123.	91.	89.	87.
	42.5	1287.	1186.	910.	416.	306.	243.	164.	110.	95.	94.
	40.0	1324.	1226.	1040.	507.	331.	290.	213.	153.	121.	104.
	37.5	1377.	1299.	1113.	685.	361.	326.	269.	201.	167.	150.
	36.0<<	1412.	1321.	1140.	742.	383.	339.	302.	235.	196.	175.
	35.0	1452.	1372.	1179.	780.	401.	349.	326.	263.	220.	195.
	30.0	1567.	1424.	1324.	1004.	680.	404.	368.	347.	338.	323.
	25.0	1686.	1428.	1316.	1244.	1017.	727.	437.	409.	398.	375.
	20.0	1806.	1539.	1398.	1495.	1221.	1099.	897.	769.	498.	462.
	15.0	1929.	1704.	1462.	1442.	1568.	1242.	1117.	1161.	1112.	1046.
	10.0	1999.	1890.	1666.	1380.	1568.	1247.	1457.	1505.	1280.	1215.
	5.0	2025.	2046.	1782.	1622.	1722.	1780.	1551.	1368.	1326.	1330.
	0.0	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.	2044.

CONE OF MAXIMUM CANDELA

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	45
5- 10	137
10- 15	232
15- 20	306
20- 25	374
25- 30	438
30- 35	510
35- 40	580
40- 45	598
45- 50	604
50- 55	600
55- 60	555
60- 65	500
65- 70	427
70- 75	303
75- 80	206
80- 85	133
85- 90	67
90- 95	39
95-100	27
100-105	24
105-110	20
110-115	18
115-120	17
120-125	16
125-130	15
130-135	13
135-140	11
140-145	8
145-150	6
150-155	4
155-160	2
160-165	1
165-170	1
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	182
0- 20	720
0- 30	1532
0- 40	2622
0- 50	3824
0- 60	4979
0- 70	5905
0- 80	6414
0- 90	6614
0-100	6680
0-110	6724
0-120	6760
0-130	6791
0-140	6816
0-150	6830
0-160	6836
0-170	6838
0-180	6838

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ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

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

LAMP: ONE HUNDRED AND FORTY FOUR WHITE LIGHT EMITTING DIODES (LEDs)

DRIVER: XH095C275V054BSF1M

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

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

OBJECT OF TEST: Measure the 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. Report Off-State Power.

PROCEDURE: The test sample was provided by the customer and had an unknown number of burn hours. The test sample was mounted inside the integrating sphere 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 480.0 VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. 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:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4262
Chromaticity Ordinate y	0.3980
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2462
Chromaticity Ordinate v'	0.5174
Correlated Color Temp CCT (K)	3138
Color Rendering Index (CRIa)	82
Color Rendering Index 1 (Light greyish red)	80
Color Rendering Index 2 (Dark greyish yellow)	91
Color Rendering Index 3 (Strong yellowish green)	95
Color Rendering Index 4 (Moderate yellowish green)	79
Color Rendering Index 5 (Light bluish green)	81
Color Rendering Index 6 (Light blue)	90
Color Rendering Index 7 (Light violet)	82
Color Rendering Index 8 (Light reddish purple)	58
Color Rendering Index 9 (Strong red)	5
Color Rendering Index 10 (Strong yellow)	80
Color Rendering Index 11 (Strong green)	77
Color Rendering Index 12 (Strong blue)	70
Color Rendering Index 13 (Light yellowish pink (skin))	83
Color Rendering Index 14 (Moderate olive green (leaf))	98
ANSI C78.377-2008 Duv	-0.001
Total Radiant Flux (milliWatts)	20733 *
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.143
Input Power (Watts)	67.3
Input Power Factor (%)	98.0
Input Current THD (%)	10.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

*NOTE:

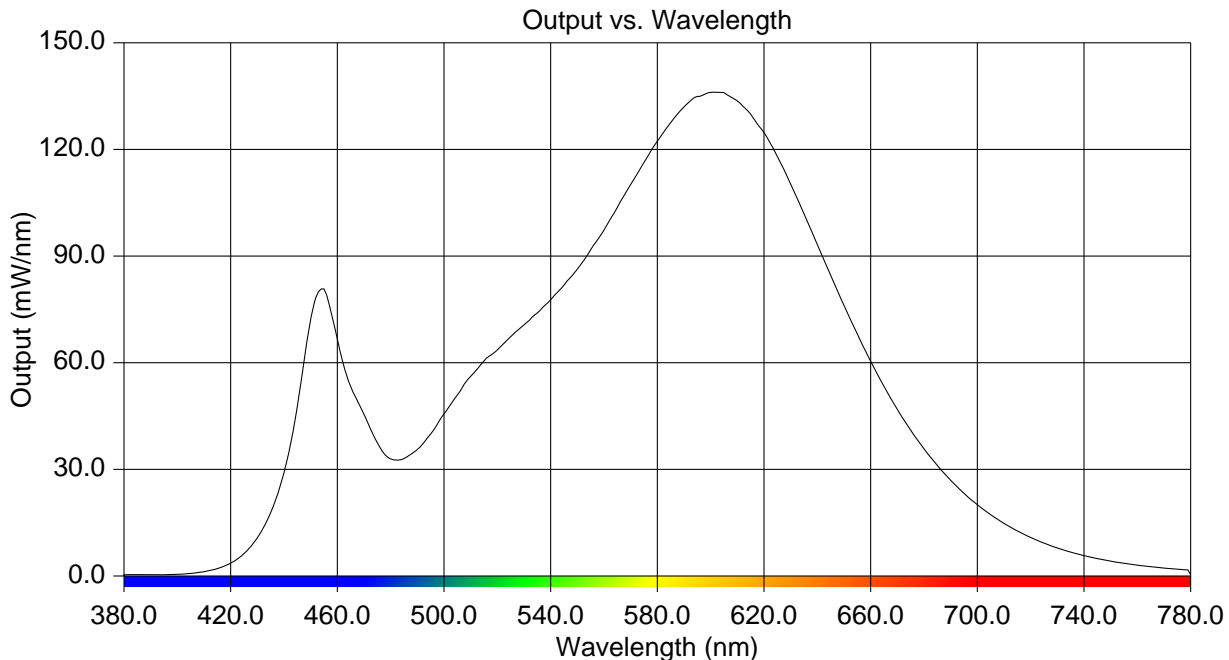
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.309	515	60.494	650	76.017
385	0.349	520	63.533	655	68.069
390	0.346	525	67.301	660	60.467
395	0.385	530	70.677	665	53.249
400	0.468	535	73.987	670	46.820
405	0.699	540	77.681	675	41.053
410	1.193	545	81.839	680	35.720
415	2.078	550	86.303	685	31.100
420	3.605	555	91.771	690	26.899
425	6.274	560	97.338	695	23.260
430	10.692	565	103.650	700	20.062
435	17.864	570	110.138	705	17.256
440	29.121	575	116.293	710	14.783
445	47.798	580	122.295	715	12.677
450	71.832	585	127.483	720	10.820
455	80.713	590	131.918	725	9.234
460	66.661	595	134.866	730	7.890
465	53.227	600	136.036	735	6.717
470	45.457	605	135.942	740	5.723
475	37.484	610	133.630	745	4.886
480	32.937	615	129.900	750	4.191
485	33.042	620	124.698	755	3.559
490	35.563	625	118.092	760	3.048
495	39.958	630	110.268	765	2.609
500	45.620	635	101.810	770	2.233
505	50.919	640	93.114	775	1.915
510	56.147	645	84.624	780	0.287



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CIE Chromaticity Diagram

