

REPORT NUMBER: RAB04695

PAGE: 1 OF 10

ISSUE DATE: 11/14/18

DATE SAMPLE TESTED: 11/14/18

PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: W34-35L-830-480

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

LAMPS: SEVENTY WHITE LIGHT EMITTING DIODES (LEDs)

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

WATT: TOTAL INPUT WATTS = 33.1 W AT 120.0 VAC.

LED DRIVER: LED DRIVER: RDD-LT40-A0700-60PF

PROCEDURE: TEST PROCEDURE: IESNA LM-79-08

NOTE: LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE
AMBIENT: 25.5

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

REPORT NUMBER: RAB04695

PAGE: 2 OF 10

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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

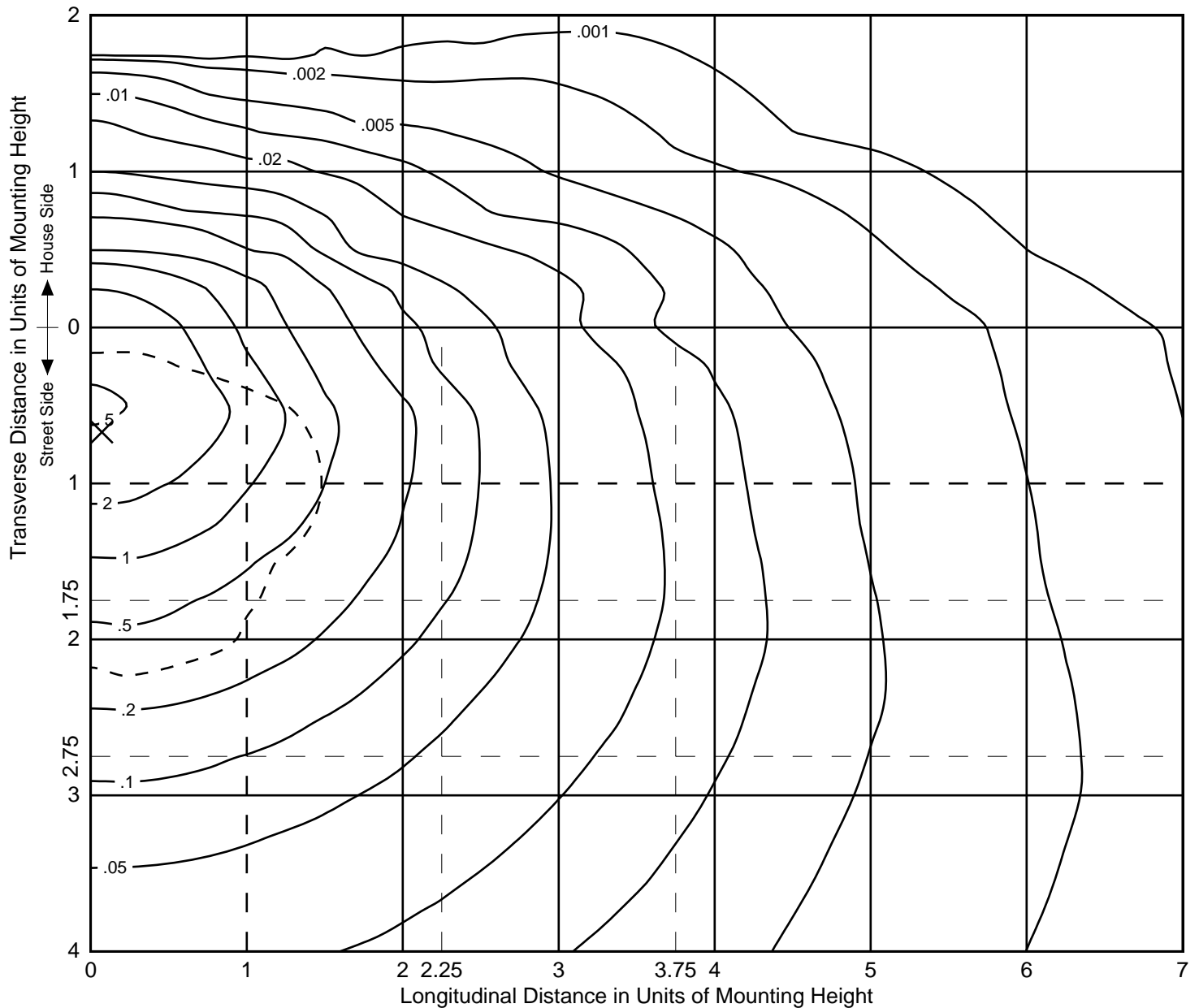
Values based on 16-foot mounting height

IES Classification: (does not classify)

Cutoff Classification (deprecated): Semicutoff

— — — — — 1/2 Maximum Candela trace

× Maximum Candela point



REPORT NUMBER: RAB04695

ISSUE DATE: 11/14/18

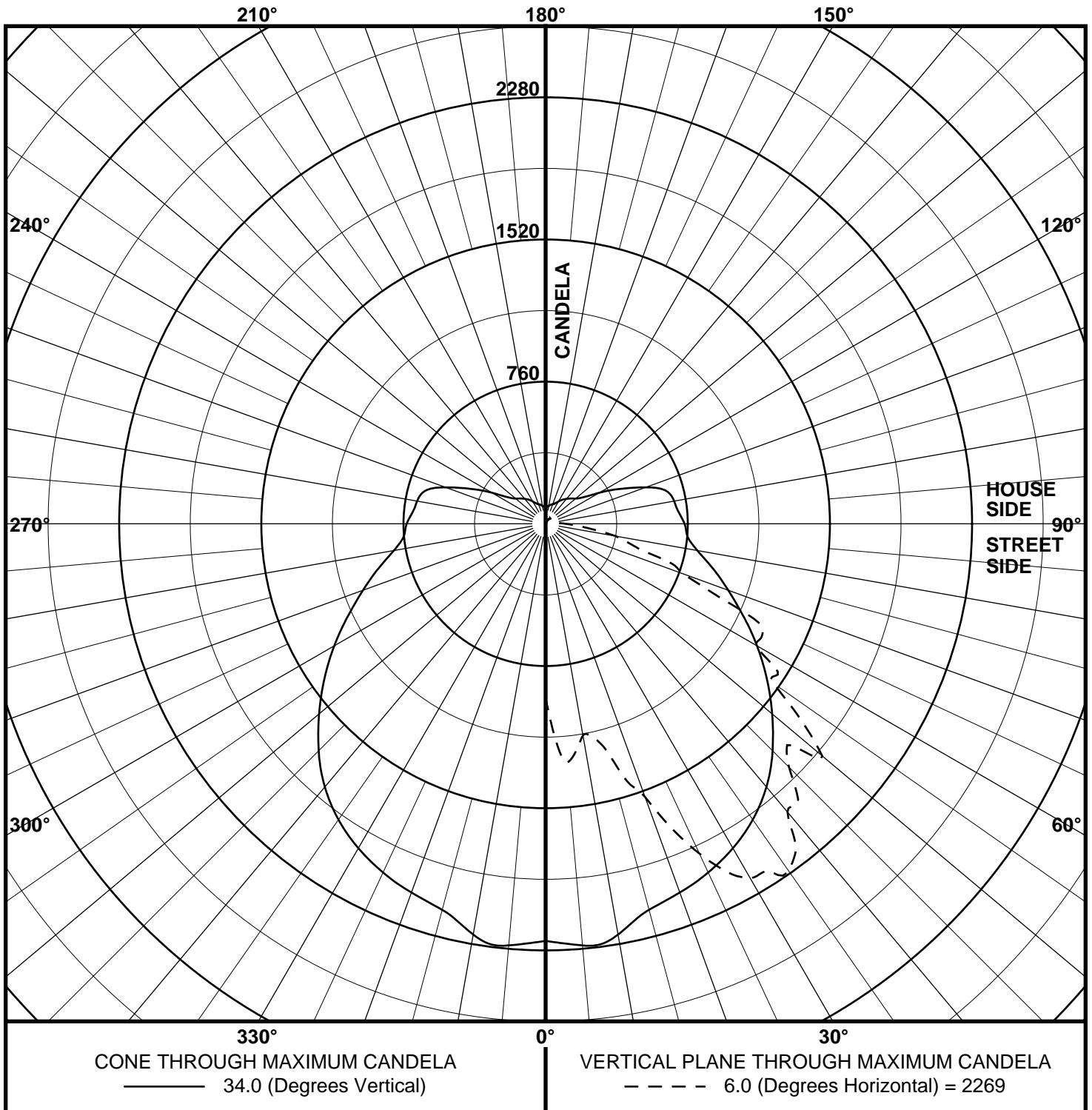
PREPARED FOR: RAB LIGHTING INC.

CATALOG NUMBER: W34-35L-830-480

PAGE: 3 OF 10

DATE SAMPLE TESTED: 11/14/18

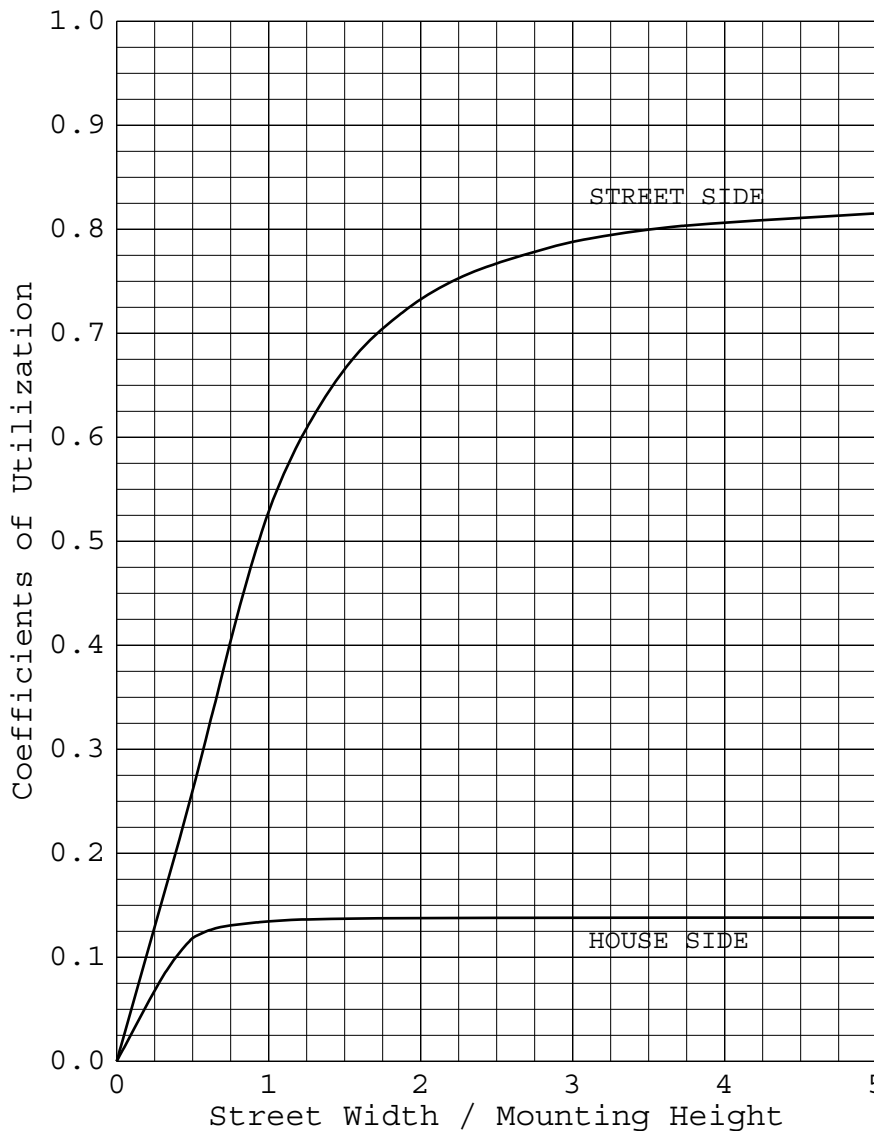
MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



REPORT NUMBER: RAB04695
ISSUE DATE: 11/14/18
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: W34-35L-830-480

PAGE: 4 OF 10
DATE SAMPLE TESTED: 11/14/18

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2962	83.6
DOWNWARD HOUSE SIDE	495	14.0
DOWNWARD TOTAL	3457	97.5
UPWARD STREET SIDE	76	2.1
UPWARD HOUSE SIDE	12	0.3
UPWARD TOTAL	88	2.5
TOTAL FLUX	3545	100.0

EFFICACY = 107.1 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.

REPORT NUMBER: RAB04695

PAGE: 5 OF 10

ISSUE DATE: 11/14/18

DATE SAMPLE TESTED: 11/14/18

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CATALOG NUMBER: W34-35L-830-480

BUG Rating						B1	U3	G1
Zonal Summary			Lumens	% of Fixture		Zone Ratings		
						B	U	G
Forward			2962	83.6				
FL	(0° – 30°)		540.6	15.2				
FM	(30° – 60°)		1641.2	46.3				
FH	(60° – 80°)		694.2	19.6				G1
FVH	(80° – 90°)		86.3	2.4				G1
Backward			495	14.0				
BL	(0° – 30°)		236.1	6.7		B1		
BM	(30° – 60°)		217.3	6.1		B0		
BH	(60° – 80°)		37.5	1.1		B0		G0
BVH	(80° – 90°)		4.0	0.1				G0
Upward			88	2.5				
UL	(90° – 100°)		27.8	0.8			U2	
UH	(100° – 180°)		60.0	1.7			U3	
Trapped Light			0	0.0				
Total Flux			3545	100.0				

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CATALOG NUMBER: W34-35L-830-480

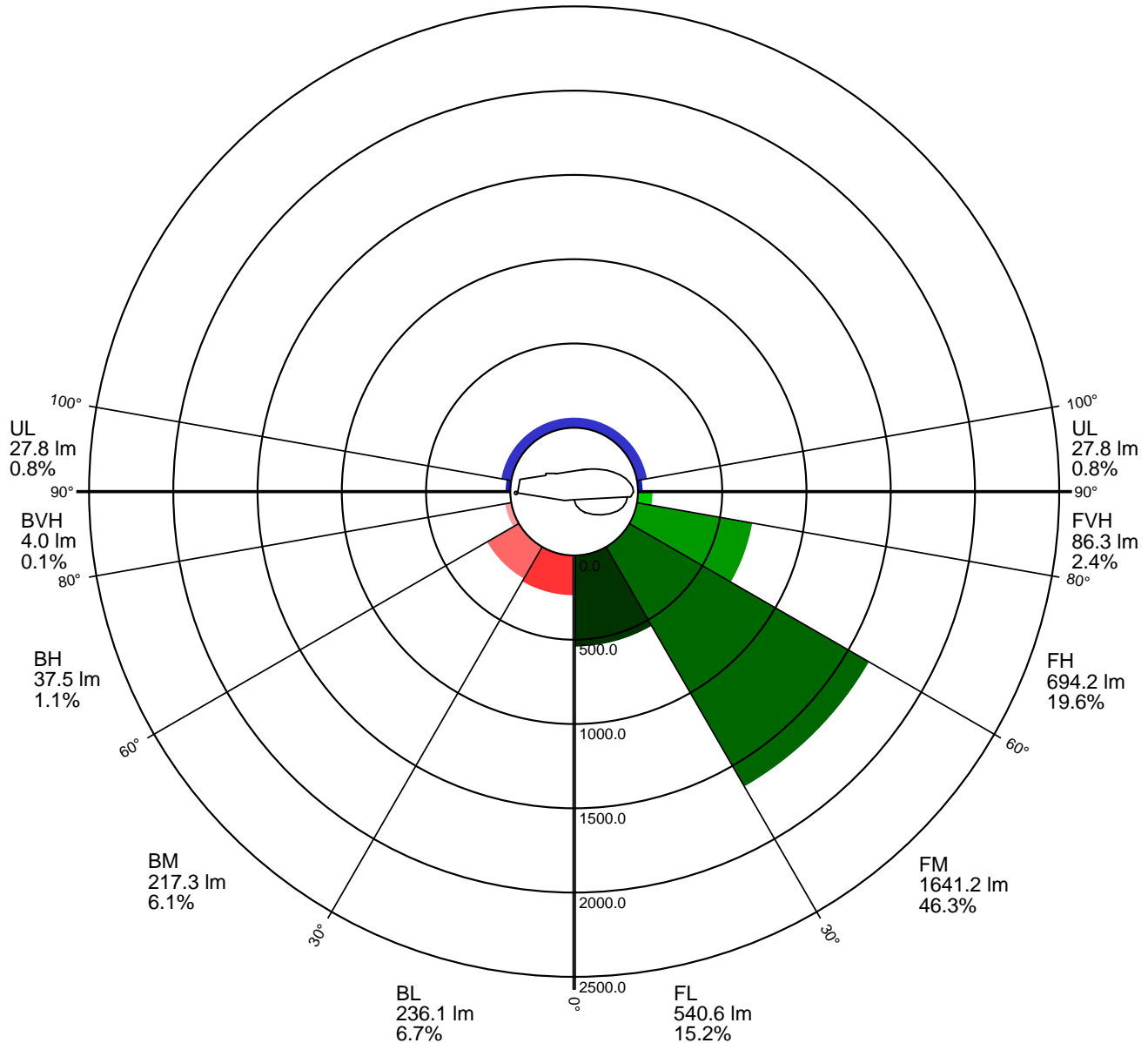
PAGE: 6 OF 10

DATE SAMPLE TESTED: 11/14/18

Zonal Lumen Summary

(Linear scale)

UH
60.0 lm
1.7%

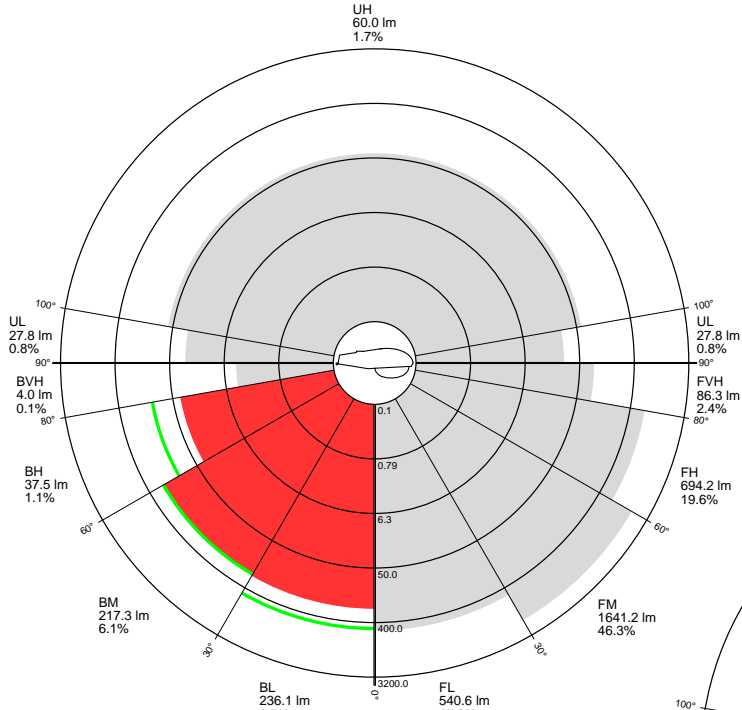


REPORT NUMBER: RAB04695
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PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: W34-35L-830-480

PAGE: 7 OF 10
DATE SAMPLE TESTED: 11/14/18

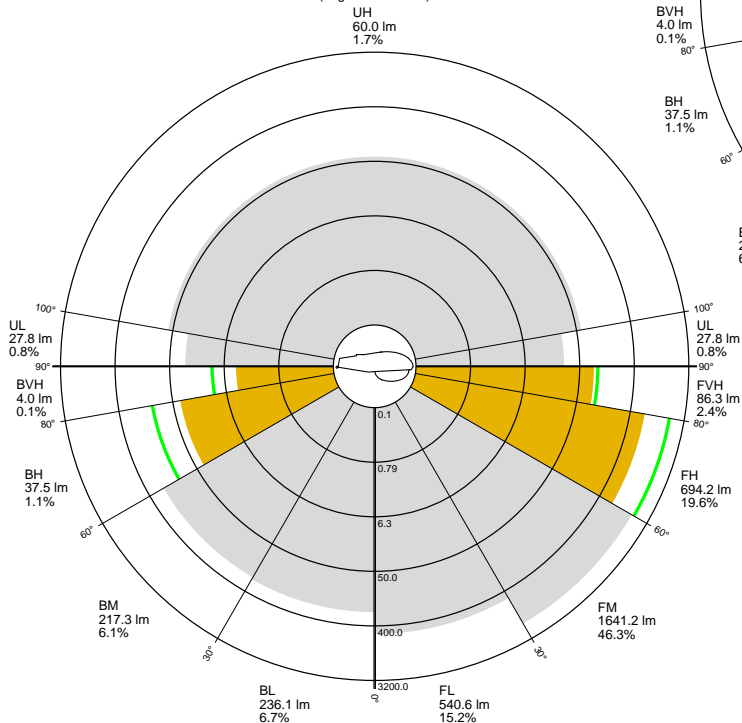
Backlight Rating Details

(Logarithmic scale)



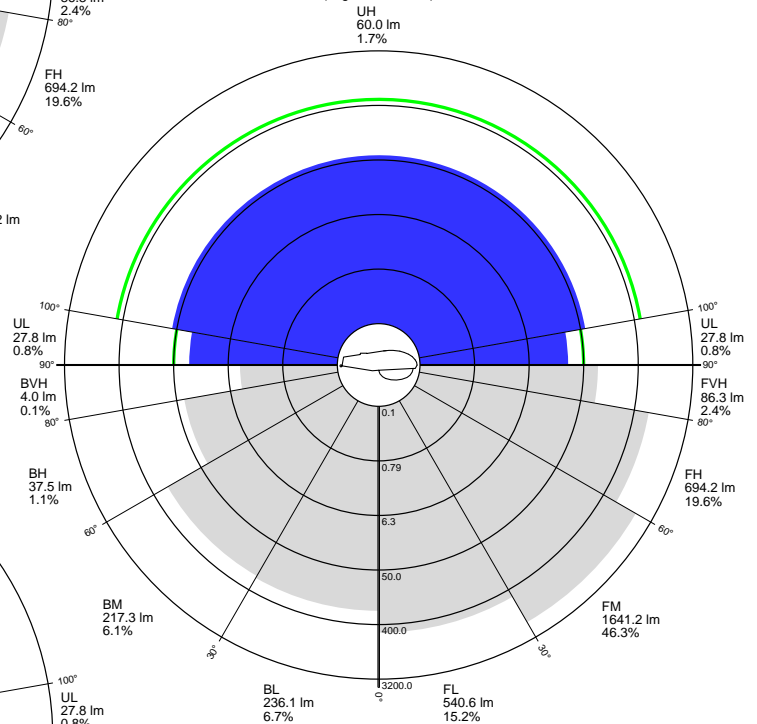
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB04695

PAGE: 8 OF 10

ISSUE DATE: 11/14/18

DATE SAMPLE TESTED: 11/14/18

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CATALOG NUMBER: W34-35L-830-480

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	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	175.0	1.	1.	1.	1.	1.	2.	2.	3.	3.	3.
	165.0	3.	3.	3.	3.	2.	2.	2.	3.	3.	3.
	155.0	11.	11.	11.	11.	9.	7.	6.	4.	3.	3.
	145.0	30.	29.	30.	28.	23.	18.	12.	8.	6.	5.
	135.0	43.	43.	43.	40.	34.	27.	18.	12.	8.	5.
	125.0	42.	41.	41.	38.	33.	26.	20.	15.	10.	8.
	115.0	42.	42.	42.	38.	32.	25.	21.	18.	15.	11.
	105.0	42.	42.	41.	39.	32.	26.	22.	21.	18.	13.
	95.0	58.	58.	58.	55.	52.	47.	42.	42.	34.	22.
	90.0	105.	106.	106.	103.	97.	87.	86.	76.	57.	35.
	87.5	146.	149.	149.	147.	138.	130.	115.	104.	80.	52.
	85.0	205.	204.	205.	200.	193.	176.	161.	136.	116.	79.
	82.5	278.	284.	281.	288.	284.	249.	228.	188.	164.	107.
V	80.0	378.	383.	379.	372.	345.	308.	296.	266.	235.	151.
E	77.5	444.	446.	443.	424.	418.	401.	398.	372.	321.	217.
R	75.0	518.	515.	515.	510.	529.	547.	506.	500.	414.	286.
T	72.5	694.	705.	708.	709.	672.	653.	647.	627.	514.	376.
I	70.0	765.	778.	785.	779.	793.	816.	794.	755.	623.	487.
C	67.5	915.	943.	964.	991.	1015.	1001.	921.	852.	723.	588.
A	65.0	1221.	1245.	1262.	1255.	1171.	1096.	983.	991.	812.	679.
L	62.5	1251.	1290.	1303.	1250.	1199.	1136.	1124.	1083.	907.	732.
	60.0	1215.	1281.	1298.	1291.	1238.	1214.	1271.	1182.	1023.	777.
A	57.5	1379.	1456.	1472.	1389.	1324.	1453.	1343.	1259.	1138.	806.
N	55.0	1410.	1473.	1488.	1478.	1576.	1542.	1381.	1329.	1231.	853.
G	52.5	1578.	1709.	1719.	1759.	1727.	1540.	1473.	1399.	1293.	870.
L	50.0	1820.	1915.	1931.	1747.	1677.	1582.	1572.	1507.	1300.	863.
E	47.5	1695.	1749.	1751.	1670.	1758.	1711.	1631.	1574.	1325.	857.
	45.0	1759.	1826.	1840.	1787.	1883.	1764.	1724.	1608.	1335.	876.
	42.5	1896.	1993.	1998.	1887.	1978.	1911.	1773.	1609.	1293.	891.
	40.0	1939.	2009.	2011.	1949.	2068.	2030.	1782.	1563.	1262.	896.
	37.5	2129.	2189.	2198.	2096.	2148.	2004.	1785.	1494.	1187.	922.
	35.0	2236.	2262.	2262.	2159.	2096.	1962.	1741.	1428.	1187.	948.
	34.0<<	2229.	2262.	2269.	2136.	2057.	1931.	1716.	1444.	1166.	926.
	32.5	2150.	2204.	2201.	2134.	2036.	1909.	1690.	1383.	1157.	915.
	30.0	2156.	2172.	2187.	2081.	1971.	1803.	1619.	1348.	1159.	938.
	25.0	1930.	1932.	1945.	1852.	1690.	1587.	1435.	1242.	1067.	986.
	20.0	1578.	1539.	1555.	1477.	1455.	1289.	1280.	1188.	1083.	1052.
	15.0	1262.	1254.	1253.	1280.	1283.	1156.	1180.	1131.	1038.	1018.
	10.0	1184.	1137.	1149.	1117.	1056.	1203.	1122.	1090.	1108.	1035.
	5.0	1295.	1289.	1280.	1232.	1147.	1069.	957.	988.	1066.	962.
	0.0	929.	929.	929.	929.	929.	929.	929.	929.	929.	929.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04695

PAGE: 9 OF 10

ISSUE DATE: 11/14/18

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CATALOG NUMBER: W34-35L-830-480

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
V E R T I C A L A N G L E	180.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	175.0	3.	3.	3.	3.	3.	3.	2.	2.	2.	2.	2.
	165.0	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
	155.0	4.	4.	4.	4.	3.	3.	3.	3.	3.	4.	3.
	145.0	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
	135.0	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.	4.
	125.0	7.	5.	4.	4.	3.	3.	3.	3.	3.	3.	3.
	115.0	9.	6.	4.	4.	3.	3.	3.	3.	3.	3.	3.
	105.0	9.	8.	5.	4.	3.	3.	3.	2.	2.	2.	2.
	95.0	10.	8.	6.	5.	3.	3.	2.	2.	2.	2.	3.
	90.0	15.	10.	8.	6.	3.	3.	2.	2.	2.	2.	2.
	87.5	29.	13.	9.	6.	3.	3.	2.	2.	1.	2.	2.
	85.0	49.	20.	12.	8.	4.	2.	2.	2.	1.	1.	2.
	82.5	74.	34.	16.	10.	4.	3.	2.	1.	1.	1.	1.
	80.0	103.	63.	22.	13.	5.	3.	2.	1.	1.	1.	1.
	77.5	123.	97.	30.	18.	6.	3.	2.	1.	1.	1.	1.
	75.0	125.	138.	39.	24.	7.	3.	2.	1.	1.	1.	1.
	72.5	178.	184.	50.	29.	9.	3.	2.	1.	1.	1.	1.
	70.0	243.	206.	59.	33.	11.	3.	1.	1.	1.	0.	0.
	67.5	308.	213.	69.	42.	15.	5.	2.	1.	1.	0.	0.
	65.0	315.	256.	73.	52.	20.	9.	2.	1.	1.	0.	0.
	62.5	330.	315.	77.	66.	29.	14.	6.	1.	1.	0.	0.
	60.0	363.	366.	100.	87.	41.	20.	11.	7.	2.	2.	2.
	57.5	389.	408.	156.	111.	55.	26.	16.	12.	13.	12.	11.
	55.0	443.	470.	248.	133.	70.	32.	20.	17.	16.	18.	19.
	52.5	517.	532.	329.	140.	87.	41.	26.	20.	21.	23.	24.
	50.0	564.	580.	375.	157.	110.	52.	33.	25.	25.	27.	28.
	47.5	579.	617.	421.	195.	133.	66.	41.	32.	29.	29.	30.
	45.0	596.	650.	479.	237.	147.	84.	50.	40.	37.	35.	36.
	42.5	614.	680.	526.	274.	160.	111.	65.	48.	46.	46.	48.
40.0	670.	703.	573.	314.	183.	137.	88.	62.	54.	52.	54.	
37.5	715.	712.	627.	371.	208.	160.	115.	83.	70.	65.	66.	
35.0	734.	736.	643.	402.	237.	181.	145.	110.	91.	83.	85.	
34.0<<	743.	714.	671.	442.	247.	191.	157.	121.	105.	92.	94.	
32.5	754.	740.	687.	471.	270.	201.	169.	141.	122.	111.	114.	
30.0	793.	778.	720.	531.	354.	219.	192.	164.	155.	140.	144.	
25.0	837.	821.	714.	675.	493.	354.	243.	205.	202.	178.	182.	
20.0	863.	800.	803.	672.	628.	498.	404.	374.	309.	261.	263.	
15.0	918.	899.	845.	696.	661.	801.	647.	598.	497.	508.	495.	
10.0	919.	946.	912.	853.	753.	777.	767.	641.	671.	776.	741.	
5.0	899.	943.	972.	965.	908.	889.	868.	890.	900.	934.	924.	
0.0	929.	929.	929.	929.	929.	929.	929.	929.	929.	929.	929.	

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04695

PAGE: 10 OF 10

ISSUE DATE: 11/14/18

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CATALOG NUMBER: W34-35L-830-480

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	23
5- 10	69
10- 15	110
15- 20	149
20- 25	189
25- 30	237
30- 35	280
35- 40	312
40- 45	326
45- 50	326
50- 55	323
55- 60	291
60- 65	259
65- 70	217
70- 75	156
75- 80	100
80- 85	59
85- 90	31
90- 95	17
95-100	11
100-105	9
105-110	7
110-115	7
115-120	7
120-125	6
125-130	6
130-135	5
135-140	4
140-145	3
145-150	2
150-155	2
155-160	1
160-165	1
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	92
0- 20	351
0- 30	777
0- 40	1370
0- 50	2021
0- 60	2635
0- 70	3111
0- 80	3367
0- 90	3457
0-100	3485
0-110	3501
0-120	3515
0-130	3526
0-140	3536
0-150	3542
0-160	3544
0-170	3545
0-180	3545

REPORT NUMBER: RAB04693
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Page 1 of 4

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

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

LAMP: SEVENTY WHITE LIGHT EMITTING DIODES (LEDs)

DRIVER: RDD-LT40-A0700-60PF

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (480.0 VAC , 60Hz) TO THE TEST SAMPLE.

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	8/22/19

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	<u>X.CAO</u>
Approved	<u>D.WANG-MUNSON</u> Lighting Engineer

REPORT NUMBER: RAB04693
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CATALOG NUMBER: W34-35L-830-480

Page 2 of 4

RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4277
Chromaticity Ordinate y	0.4018
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2456
Chromaticity Ordinate v'	0.5191
Correlated Color Temp CCT (K)	3143
Color Rendering Index (CRIa)	82
Color Rendering Index 1 (Light greyish red)	80
Color Rendering Index 2 (Dark greyish yellow)	90
Color Rendering Index 3 (Strong yellowish green)	97
Color Rendering Index 4 (Moderate yellowish green)	81
Color Rendering Index 5 (Light bluish green)	81
Color Rendering Index 6 (Light blue)	88
Color Rendering Index 7 (Light violet)	84
Color Rendering Index 8 (Light reddish purple)	60
Color Rendering Index 9 (Strong red)	8
Color Rendering Index 10 (Strong yellow)	77
Color Rendering Index 11 (Strong green)	79
Color Rendering Index 12 (Strong blue)	69
Color Rendering Index 13 (Light yellowish pink (skin))	82
Color Rendering Index 14 (Moderate olive green (leaf))	98
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	10781 *
ELECTRICAL FOR SPECTRORADIOMETRIC TEST	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.072
Input Power (Watts)	33.1
Input Power Factor (%)	95.4
Input Current THD (%)	7.3
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

*NOTE:

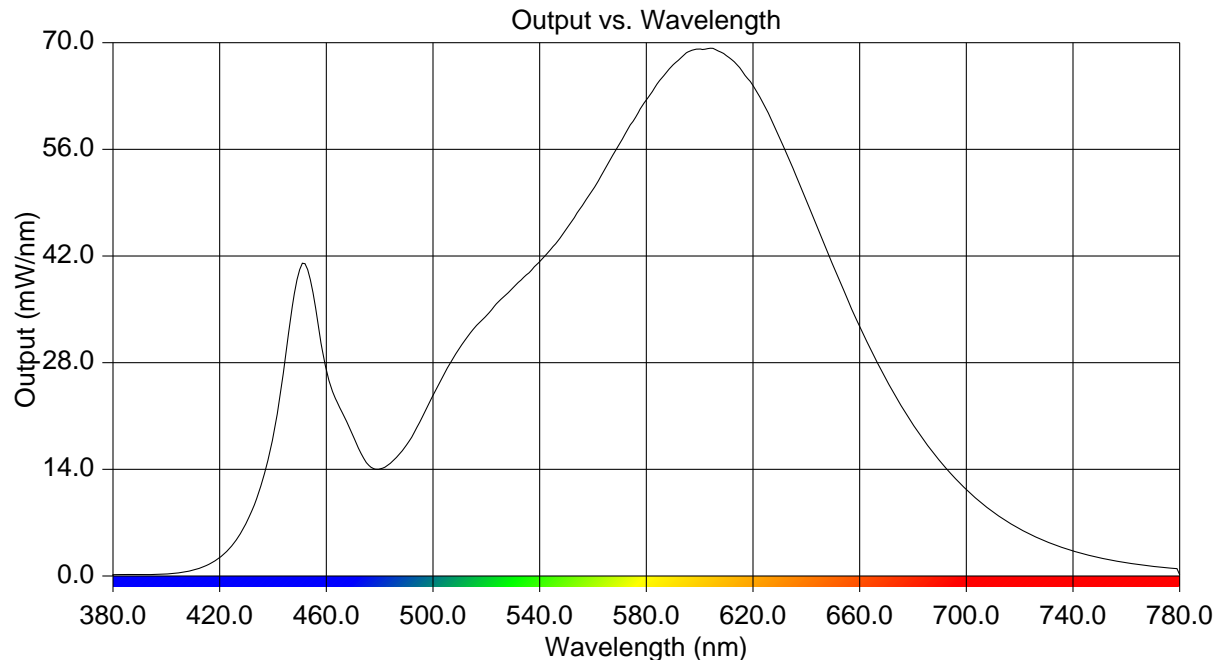
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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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CATALOG NUMBER: W34-35L-830-480

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.168	515	32.342	650	40.760
385	0.177	520	34.163	655	36.703
390	0.175	525	36.164	660	32.805
395	0.211	530	37.827	665	29.141
400	0.267	535	39.519	670	25.748
405	0.428	540	41.247	675	22.701
410	0.756	545	43.238	680	19.872
415	1.375	550	45.531	685	17.350
420	2.415	555	48.132	690	15.113
425	4.158	560	50.720	695	13.127
430	7.019	565	53.795	700	11.358
435	11.326	570	56.774	705	9.788
440	18.237	575	59.661	710	8.413
445	29.630	580	62.505	715	7.226
450	40.207	585	65.038	720	6.204
455	37.195	590	67.064	725	5.295
460	27.061	595	68.666	730	4.509
465	22.114	600	69.165	735	3.839
470	18.418	605	69.254	740	3.288
475	14.883	610	68.298	745	2.812
480	14.065	615	66.727	750	2.392
485	15.151	620	64.418	755	2.040
490	17.191	625	61.328	760	1.737
495	20.170	630	57.493	765	1.483
500	23.728	635	53.513	770	1.275
505	27.013	640	49.236	775	1.085
510	30.007	645	44.967	780	0.164



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Page 4 of 4

CIE Chromaticity Diagram

