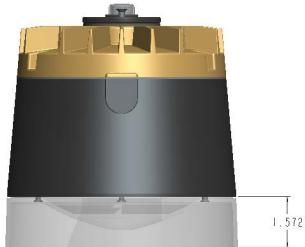


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.

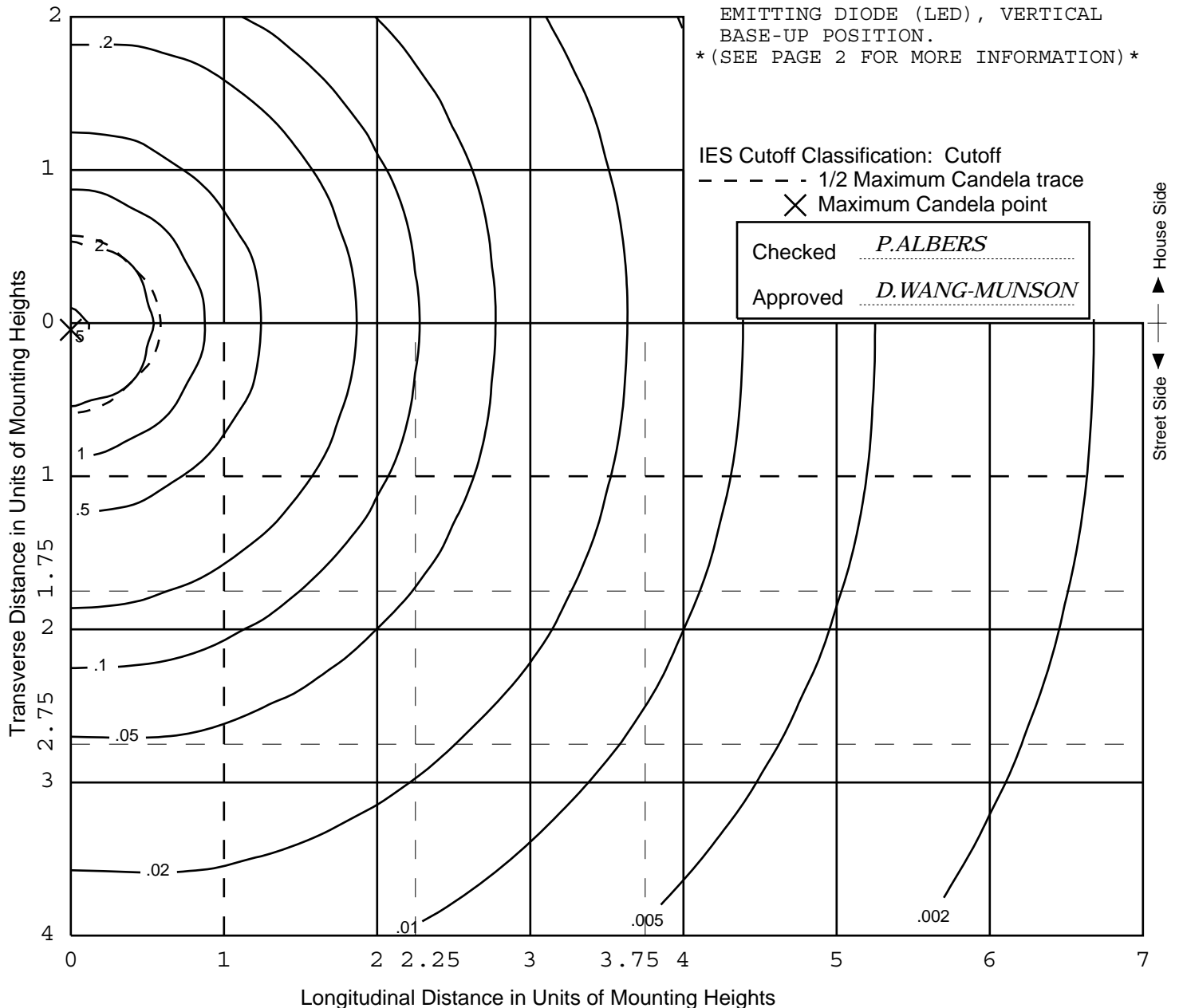


REPORT NUMBER: RAB04234
ISSUE DATE: 04/03/18 PAGE: 1 OF 9
DATE SAMPLE TESTED: 04/03/18
CATALOG NUMBER:
YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU
(TYPE V)

LUMINAIRE: CAST FINNED METAL HOUSING
WITH WHITE PAINTED INTERIOR, 1
CIRCUIT BOARD WITH 1 LED WITH MOLDED
WHITE PLASTIC TRIM, CLEAR INTERIOR
FROSTED CYLINDRICAL LENS WITH
RECESSED EXTERIOR-FROSTED CONVEX
CENTER. CONVEX CENTER HAS CONCENTRIC
CIRCULAR EXTERIOR PRISMS.

LAMP: ONE WHITE MULTI-CHIP LIGHT
EMITTING DIODE (LED), VERTICAL
BASE-UP POSITION.

*(SEE PAGE 2 FOR MORE INFORMATION) *



REPORT NUMBER: RAB04234

PAGE: 2 OF 9

ISSUE DATE: 04/03/18

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

ADDITIONAL INFORMATION

NOTE: 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.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

TOTAL INPUT WATTS = 55.542 W AT 277.0 VAC.

LED DRIVER: RDD-060-A1800-095C

TEST PROCEDURE: IESNA LM-79-08

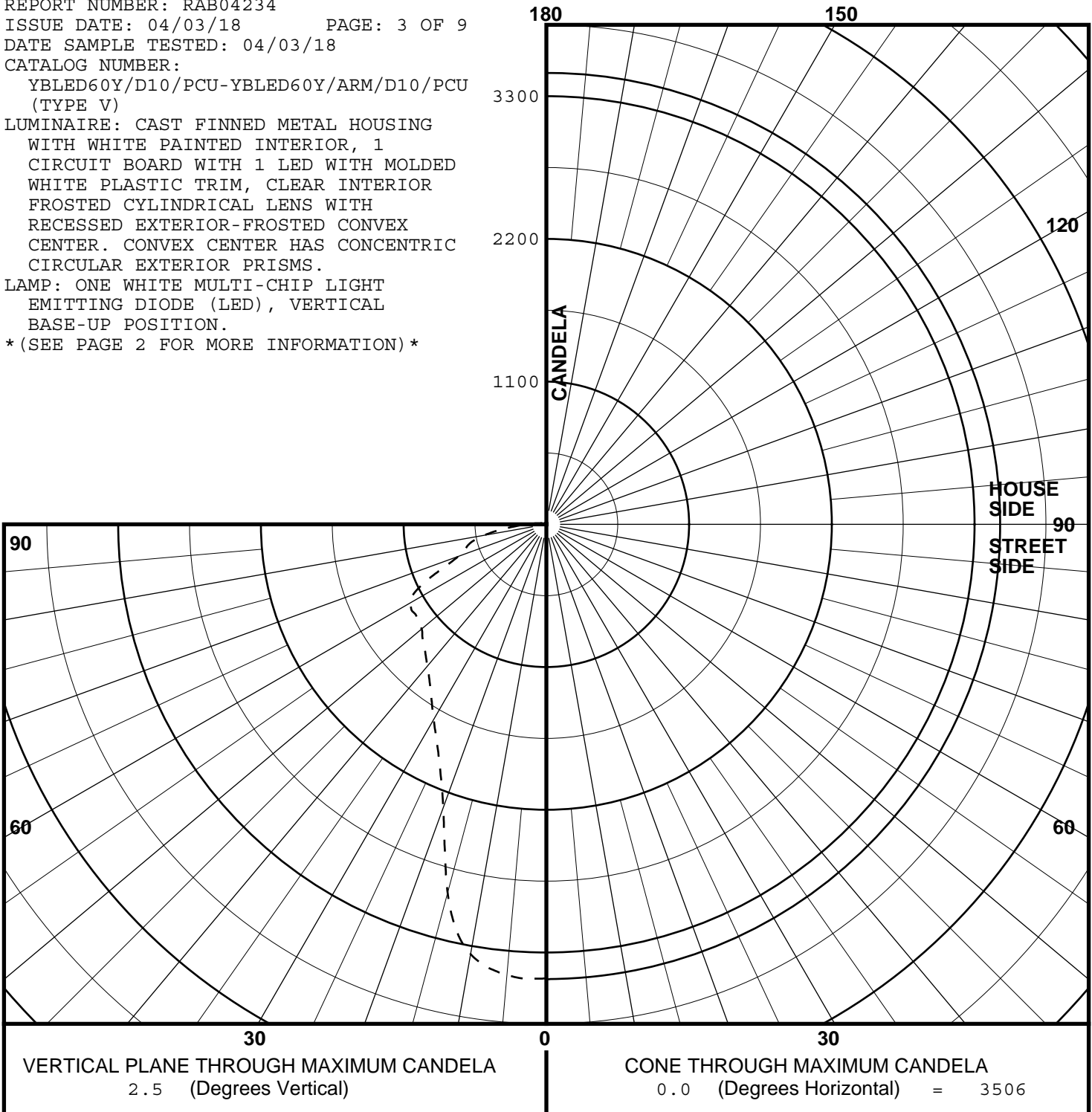
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.2

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB04234
 ISSUE DATE: 04/03/18 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 04/03/18
 CATALOG NUMBER:
 YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU
 (TYPE V)
 LUMINAIRE: CAST FINNED METAL HOUSING
 WITH WHITE PAINTED INTERIOR, 1
 CIRCUIT BOARD WITH 1 LED WITH MOLDED
 WHITE PLASTIC TRIM, CLEAR INTERIOR
 FROSTED CYLINDRICAL LENS WITH
 RECESSED EXTERIOR-FROSTED CONVEX
 CENTER. CONVEX CENTER HAS CONCENTRIC
 CIRCULAR EXTERIOR PRISMS.
 LAMP: ONE WHITE MULTI-CHIP LIGHT
 EMITTING DIODE (LED), VERTICAL
 BASE-UP POSITION.
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB04234

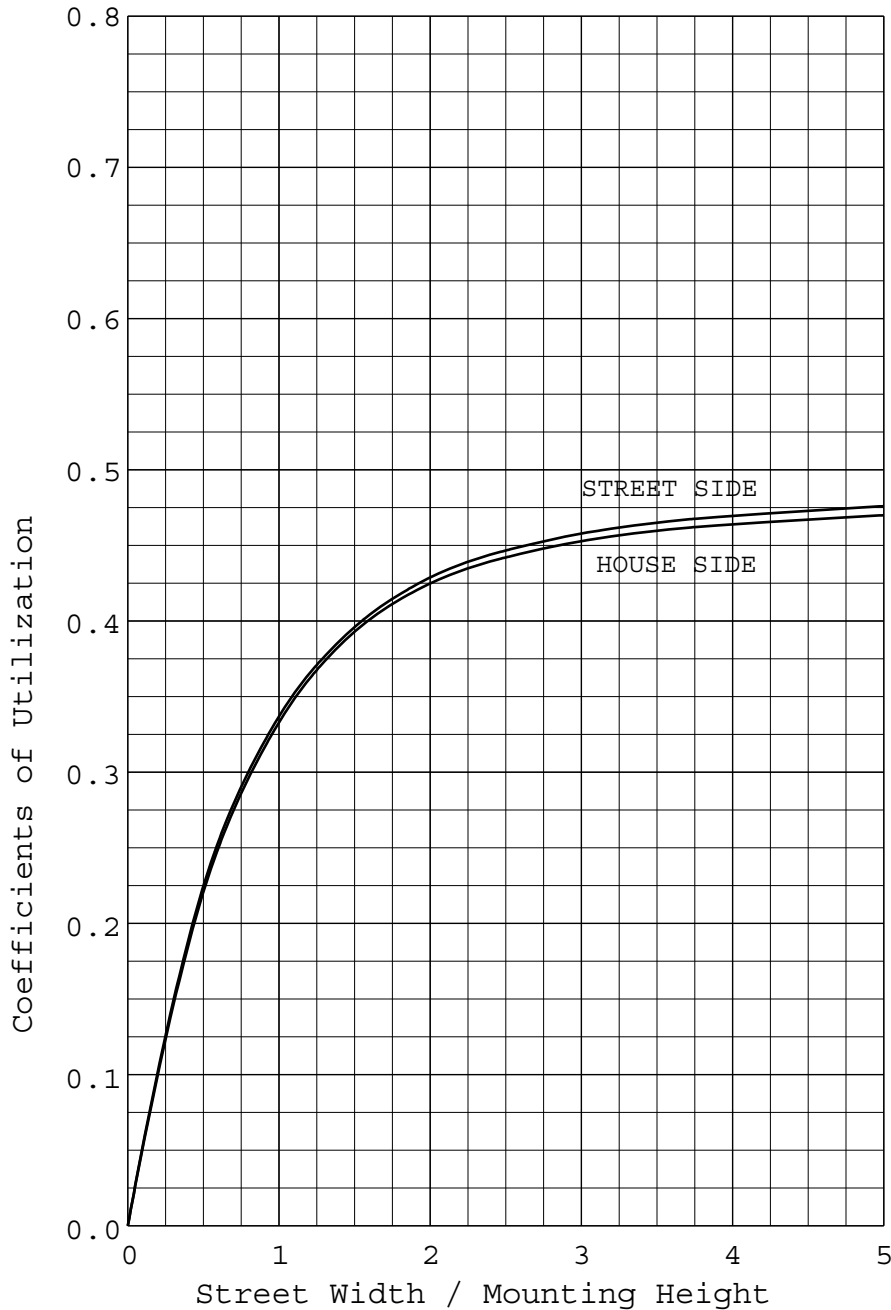
PAGE: 4 OF 9

ISSUE DATE: 04/03/18

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	3611.	49.2
DOWNWARD HOUSE SIDE	3554.	48.4
DOWNWARD TOTAL	7166.	97.6
UPWARD STREET SIDE	94.	1.3
UPWARD HOUSE SIDE	80.	1.1
UPWARD TOTAL	175.	2.4
TOTAL FLUX	7340.	100.0
TOTAL INPUT WATTS = 55.5		
EFFICACY = 132.3 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: RAB04234

ISSUE DATE: 04/03/18

PAGE: 5 OF 9

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

BUG Rating:

Zonal Summary

Lumens

% of Fixture

B2 U3 G2

Zone Ratings

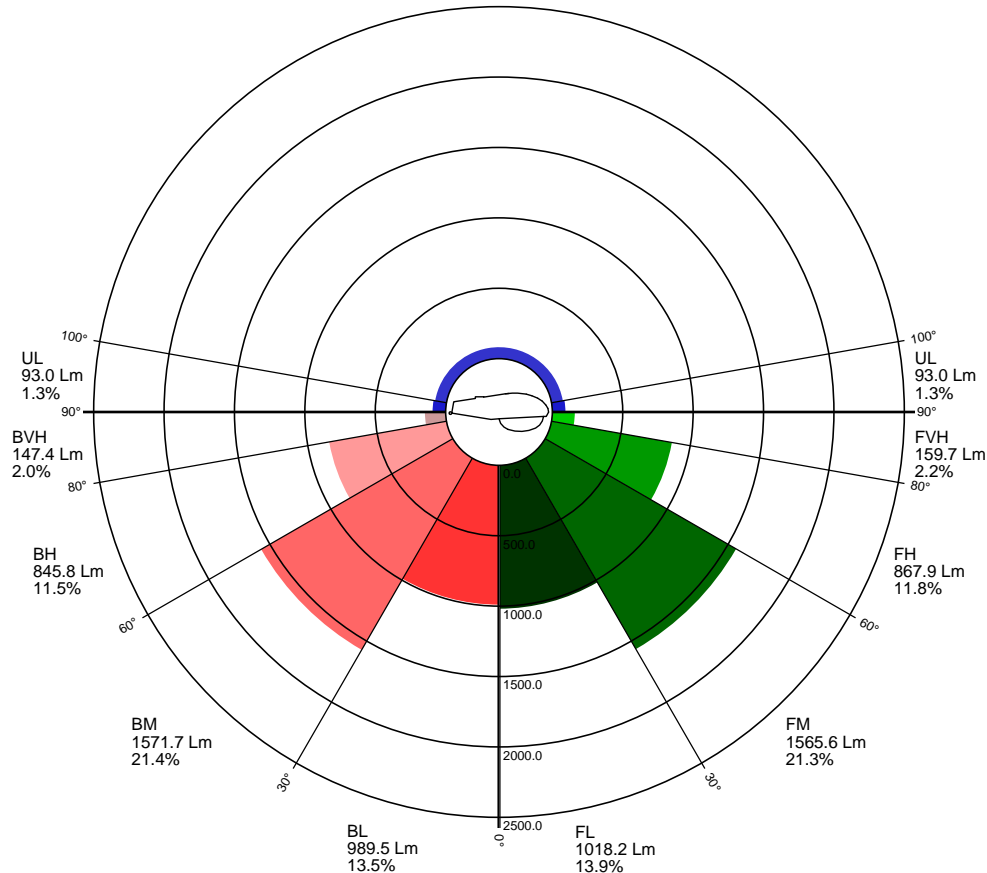
B U G

Forward		3611	49.2			
FL	(0° - 30°)	1018.2	13.9			
FM	(30° - 60°)	1565.6	21.3			
FH	(60° - 80°)	867.9	11.8			G1
FVH	(80° - 90°)	159.7	2.2			G2
Backward		3554	48.4			
BL	(0° - 30°)	989.5	13.5	B2		
BM	(30° - 60°)	1571.7	21.4	B2		
BH	(60° - 80°)	845.8	11.5	B2		G1
BVH	(80° - 90°)	147.4	2.0			G2
Upward		175	2.4			
UL	(90° - 100°)	93.0	1.3		U3	
UH	(100° - 180°)	81.5	1.1		U3	
Trapped Light		0	0.0			
Total Flux		7340	100.0			

Zonal Lumen Summary

(Linear scale)

UH
81.5 Lm
1.1%



REPORT NUMBER: RAB04234

ISSUE DATE: 04/03/18

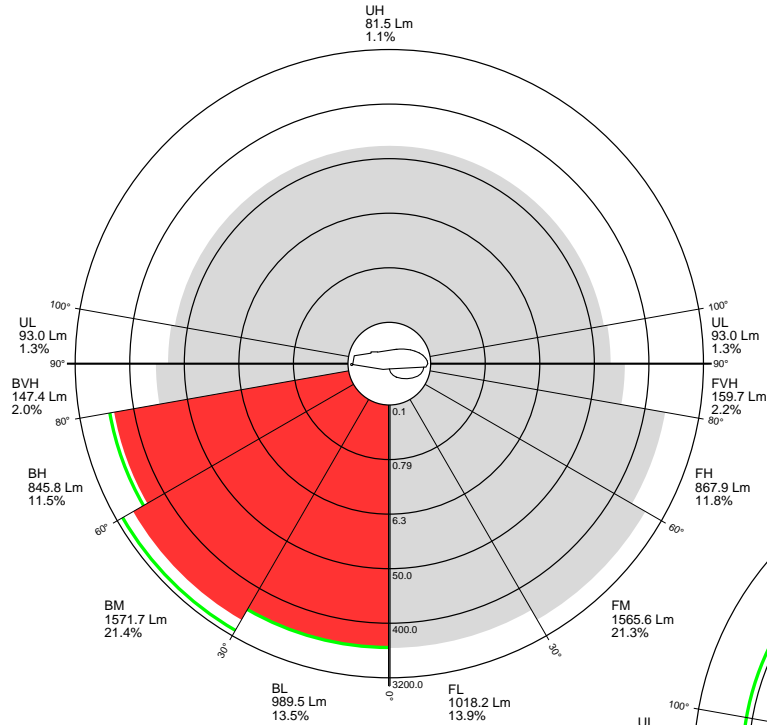
PAGE: 6 OF 9

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

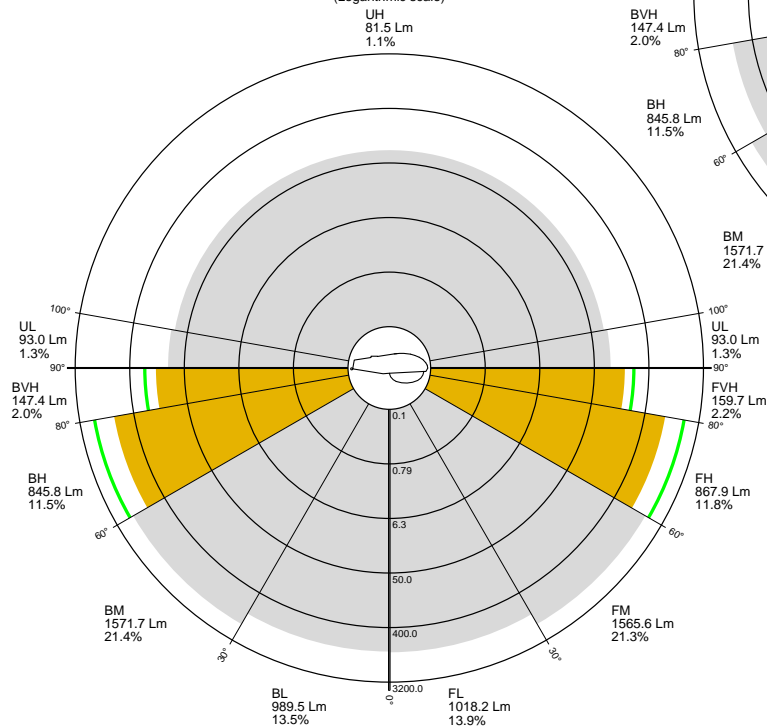
Backlight Rating Details

(Logarithmic scale)



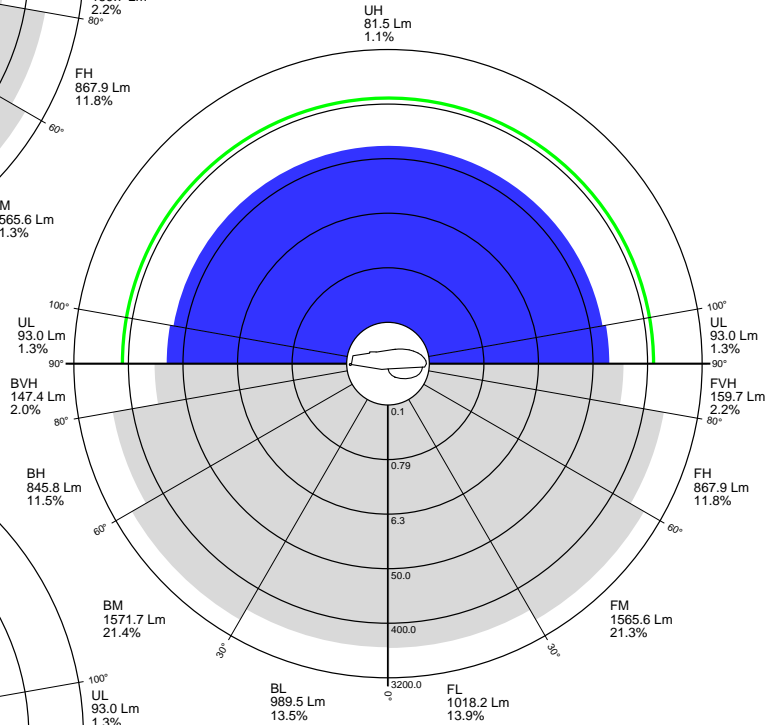
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB04234

PAGE: 7 OF 9

ISSUE DATE: 04/03/18

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

CANDELA TABULATION

	STREET SIDE	LATERAL ANGLE								
		0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0 85.0
	180.0	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	1.	1.	1.	1.	1.	1.	1.	1.	1.
	165.0	3.	3.	3.	3.	3.	3.	3.	3.	3.
	155.0	4.	4.	4.	4.	4.	4.	3.	3.	4.
	145.0	5.	5.	5.	5.	5.	5.	5.	5.	4.
	135.0	8.	8.	8.	8.	8.	8.	7.	7.	7.
	125.0	15.	15.	15.	14.	14.	14.	13.	13.	13.
	115.0	27.	28.	29.	30.	29.	28.	28.	29.	28.
	105.0	33.	34.	35.	35.	35.	35.	34.	34.	35.
	95.0	84.	84.	85.	83.	85.	83.	81.	81.	81.
	90.0	154.	155.	156.	151.	152.	149.	145.	145.	145.
	87.5	213.	212.	211.	207.	208.	203.	197.	197.	195.
	85.0	291.	290.	290.	285.	288.	276.	271.	269.	264.
	82.5	389.	387.	393.	389.	394.	380.	372.	366.	356.
V	80.0	486.	487.	505.	506.	511.	496.	489.	477.	462.
E	77.5	571.	577.	610.	620.	629.	621.	619.	594.	575.
R	75.0	626.	638.	688.	708.	719.	714.	721.	696.	674.
T	72.5	662.	677.	743.	768.	785.	784.	794.	772.	750.
I	70.0	723.	739.	802.	832.	852.	856.	866.	846.	824.
C	67.5	839.	847.	900.	918.	940.	934.	941.	918.	900.
A	65.0	1007.	1011.	1046.	1052.	1064.	1061.	1067.	1049.	1033.
L	62.5	1149.	1151.	1169.	1165.	1170.	1167.	1165.	1161.	1154.
	60.0	1206.	1208.	1217.	1210.	1208.	1213.	1216.	1217.	1216.
A	57.5	1231.	1232.	1236.	1232.	1228.	1232.	1235.	1236.	1235.
N	55.0	1225.	1225.	1227.	1224.	1223.	1225.	1229.	1229.	1231.
G	52.5	1240.	1239.	1242.	1241.	1241.	1243.	1245.	1246.	1246.
L	50.0	1255.	1255.	1257.	1260.	1257.	1260.	1262.	1265.	1267.
E	47.5	1295.	1293.	1296.	1300.	1297.	1296.	1299.	1302.	1303.
	45.0	1330.	1328.	1332.	1336.	1333.	1335.	1340.	1344.	1346.
	42.5	1376.	1375.	1378.	1382.	1381.	1385.	1389.	1392.	1393.
	40.0	1426.	1429.	1427.	1433.	1433.	1436.	1440.	1445.	1445.
	37.5	1485.	1489.	1485.	1492.	1494.	1497.	1501.	1504.	1505.
	35.0	1556.	1556.	1556.	1558.	1565.	1568.	1570.	1573.	1569.
	30.0	1737.	1733.	1736.	1737.	1743.	1745.	1745.	1746.	1740.
	25.0	1965.	1962.	1965.	1963.	1965.	1961.	1961.	1956.	1954.
	20.0	2323.	2320.	2329.	2313.	2319.	2300.	2308.	2289.	2287.
	15.0	2941.	2932.	2940.	2918.	2926.	2904.	2911.	2878.	2872.
	10.0	3364.	3359.	3362.	3356.	3359.	3352.	3353.	3338.	3337.
	5.0	3486.	3484.	3487.	3483.	3486.	3484.	3482.	3480.	3478.
	2.5<<	3506.	3504.	3504.	3505.	3504.	3504.	3503.	3502.	3500.
	0.0	3500.	3500.	3500.	3500.	3500.	3500.	3500.	3500.	3500.

||
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04234

PAGE: 8 OF 9

ISSUE DATE: 04/03/18

DATE SAMPLE TESTED: 04/03/18

CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

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	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	165.0	3.	3.	2.	2.	2.	2.	2.	1.	1.	1.
	155.0	4.	3.	3.	3.	3.	2.	2.	2.	1.	2.
	145.0	5.	5.	4.	4.	4.	3.	2.	2.	2.	1.
	135.0	7.	7.	7.	7.	7.	6.	5.	4.	3.	2.
	125.0	13.	13.	13.	13.	13.	12.	12.	11.	7.	3.
	115.0	27.	26.	26.	24.	24.	25.	25.	24.	11.	4.
	105.0	34.	34.	34.	34.	33.	33.	32.	28.	20.	12.
	95.0	80.	81.	81.	80.	79.	78.	78.	76.	67.	69.
	90.0	142.	143.	142.	142.	142.	141.	140.	140.	140.	142.
	87.5	191.	190.	190.	191.	191.	190.	189.	186.	186.	191.
	85.0	256.	257.	257.	258.	259.	258.	255.	250.	249.	256.
	82.5	343.	344.	346.	350.	352.	351.	345.	335.	331.	339.
V	80.0	444.	447.	451.	458.	464.	463.	454.	436.	426.	430.
E	77.5	553.	556.	564.	577.	586.	585.	574.	546.	528.	523.
R	75.0	652.	655.	667.	682.	694.	695.	684.	649.	623.	603.
T	72.5	729.	734.	748.	764.	777.	781.	771.	734.	700.	661.
I	70.0	802.	806.	818.	831.	840.	849.	841.	813.	769.	703.
C	67.5	884.	888.	901.	911.	918.	925.	922.	907.	860.	771.
A	65.0	1025.	1024.	1034.	1037.	1040.	1050.	1056.	1055.	995.	877.
L	62.5	1152.	1153.	1161.	1162.	1165.	1171.	1181.	1189.	1142.	1044.
	60.0	1219.	1222.	1229.	1230.	1230.	1233.	1240.	1255.	1243.	1168.
A	57.5	1239.	1241.	1247.	1248.	1246.	1248.	1256.	1270.	1270.	1241.
N	55.0	1236.	1239.	1243.	1244.	1241.	1242.	1248.	1259.	1270.	1253.
G	52.5	1251.	1253.	1256.	1256.	1254.	1254.	1259.	1267.	1268.	1265.
L	50.0	1268.	1269.	1270.	1268.	1266.	1266.	1269.	1277.	1281.	1275.
E	47.5	1302.	1302.	1301.	1298.	1294.	1293.	1296.	1301.	1306.	1307.
	45.0	1341.	1340.	1339.	1336.	1332.	1331.	1332.	1337.	1340.	1338.
	42.5	1389.	1387.	1384.	1382.	1378.	1373.	1376.	1379.	1382.	1379.
	40.0	1438.	1439.	1436.	1433.	1431.	1426.	1428.	1430.	1433.	1431.
	37.5	1497.	1499.	1497.	1495.	1494.	1489.	1491.	1490.	1495.	1491.
	35.0	1562.	1565.	1568.	1564.	1563.	1560.	1562.	1560.	1563.	1560.
	30.0	1739.	1735.	1740.	1739.	1730.	1734.	1727.	1730.	1732.	1727.
	25.0	1949.	1942.	1943.	1932.	1931.	1931.	1926.	1926.	1917.	1920.
	20.0	2267.	2251.	2240.	2229.	2218.	2216.	2201.	2202.	2188.	2195.
	15.0	2824.	2812.	2789.	2768.	2747.	2738.	2702.	2703.	2683.	2700.
	10.0	3314.	3305.	3293.	3280.	3265.	3254.	3240.	3244.	3229.	3236.
	5.0	3471.	3470.	3465.	3461.	3456.	3452.	3446.	3445.	3438.	3439.
	2.5<<	3497.	3498.	3494.	3493.	3490.	3489.	3485.	3483.	3480.	3480.
	0.0	3500.	3500.	3500.	3500.	3500.	3500.	3500.	3500.	3500.	3500.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB04234

ISSUE DATE: 04/03/18

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING

PAGE: 9 OF 9

DATE SAMPLE TESTED: 04/03/18

5-DEGREE ZONAL LUMEN SUMMARY

0- 5	83
5- 10	243
10- 15	365
15- 20	414
20- 25	438
25- 30	465
30- 35	485
35- 40	499
40- 45	512
45- 50	525
50- 55	544
55- 60	571
60- 65	555
65- 70	461
70- 75	390
75- 80	308
80- 85	197
85- 90	110
90- 95	60
95-100	33
100-105	20
105-110	16
110-115	14
115-120	10
120-125	7
125-130	5
130-135	3
135-140	2
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	326
0- 20	1105
0- 30	2008
0- 40	2992
0- 50	4029
0- 60	5145
0- 70	6161
0- 80	6859
0- 90	7166
0-100	7259
0-110	7295
0-120	7319
0-130	7330
0-140	7336
0-150	7338
0-160	7340
0-170	7340
0-180	7340

REPORT NUMBER: RAB04235
DATE: 4/4/2018
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST FINNED METAL HOUSING WITH WHITE PAINTED INTERIOR, 1 CIRCUIT BOARD WITH 1 LED WITH MOLDED WHITE PLASTIC TRIM, CLEAR INTERIOR FROSTED CYLINDRICAL LENS WITH RECESSED EXTERIOR-FROSTED CONVEX CENTER. CONVEX CENTER HAS CONCENTRIC CIRCULAR EXTERIOR PRISMS.

LAMP: ONE WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED), VERTICAL BASE-UP POSITION.

DRIVER: RDD-060-A1800-095C

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (277.0 AND 120.0 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	02/22/19

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 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 (120.0 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

REPORT NUMBER: RAB04235
 DATE: 4/4/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	7340 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4351
Chromaticity Ordinate y	0.4014
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2505
Chromaticity Ordinate v'	0.5201
Correlated Color Temp CCT (K)	3009
ANSI C78.377-2008 Duv	-0.001
Total Radiant Flux (milliWatts)	21005 *
ELECTRICAL	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.223
Input Power (Watts)	55.5
Input Power Factor (%)	90.0
Input Current THD (%)	8.5
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	132.3
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.455
Input Power (Watts)	54.4
Input Power Factor (%)	99.5
Input Current THD (%)	9.3
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	68
R2 Dark greyish yellow	85
R3 Strong yellowish green	93
R4 Moderate yellowish green	67
R5 Light bluish green	69
R6 Light blue	81
R7 Light violet	75
R8 Light reddish purple	40
R9 Strong red	-35
R10 Strong yellow	67
R11 Strong green	62
R12 Strong blue	59
R13 Light yellowish pink (skin)	72
R14 Moderate olive green (leaf)	97

*NOTE:

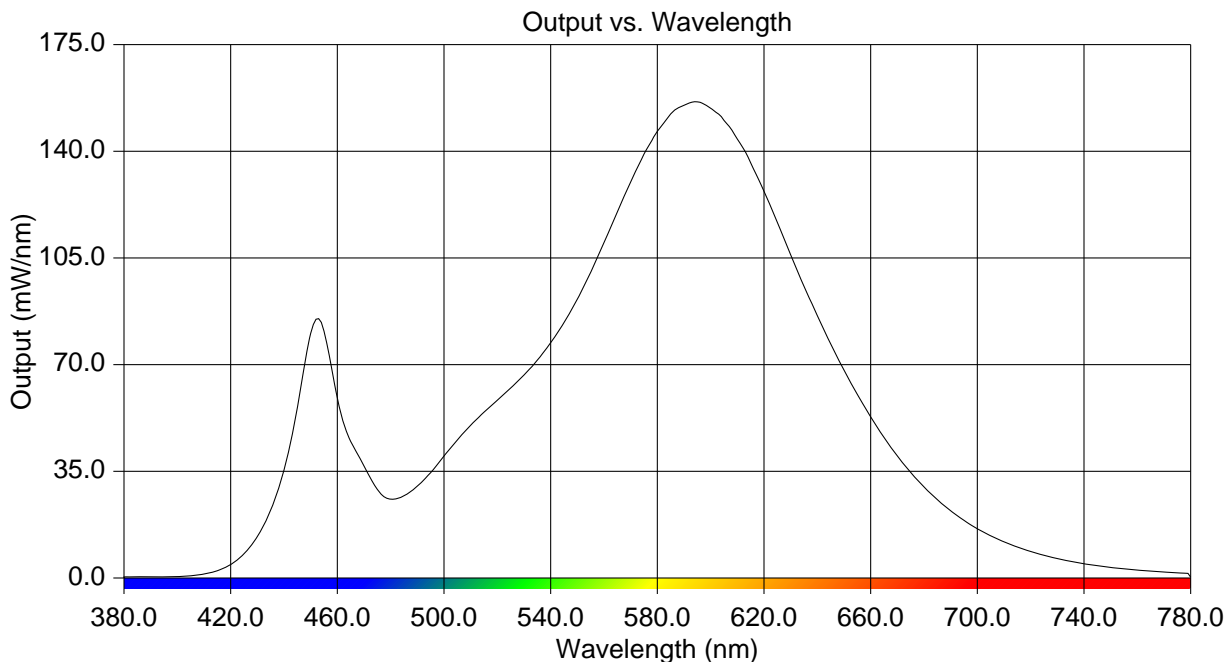
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even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

REPORT NUMBER: RAB04235
 DATE: 4/4/2018
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING
 CATALOG NUMBER: YBLED60Y/D10/PCU-YBLED60Y/ARM/D10/PCU (TYPE V)

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.352	515	54.414	650	68.211
385	0.374	520	58.324	655	60.245
390	0.375	525	62.357	660	52.871
395	0.383	530	66.615	665	46.111
400	0.484	535	71.490	670	40.015
405	0.707	540	77.200	675	34.643
410	1.266	545	83.688	680	29.881
415	2.381	550	91.615	685	25.680
420	4.469	555	100.198	690	22.053
425	7.943	560	109.909	695	18.920
430	13.507	565	120.132	700	16.192
435	22.336	570	130.046	705	13.811
440	35.321	575	139.107	710	11.868
445	55.871	580	146.594	715	10.173
450	80.251	585	152.268	720	8.718
455	80.998	590	155.069	725	7.437
460	59.019	595	156.231	730	6.365
465	44.814	600	154.156	735	5.459
470	36.765	605	150.145	740	4.666
475	29.071	610	144.023	745	4.020
480	25.811	615	136.232	750	3.482
485	27.018	620	126.882	755	3.014
490	30.072	625	116.826	760	2.601
495	34.559	630	105.956	765	2.260
500	40.091	635	95.749	770	1.956
505	45.214	640	86.039	775	1.683
510	50.138	645	76.775	780	0.255



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CIE Chromaticity Diagram

