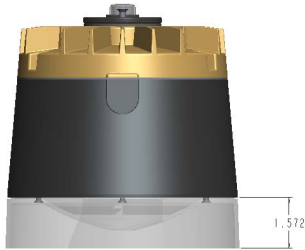


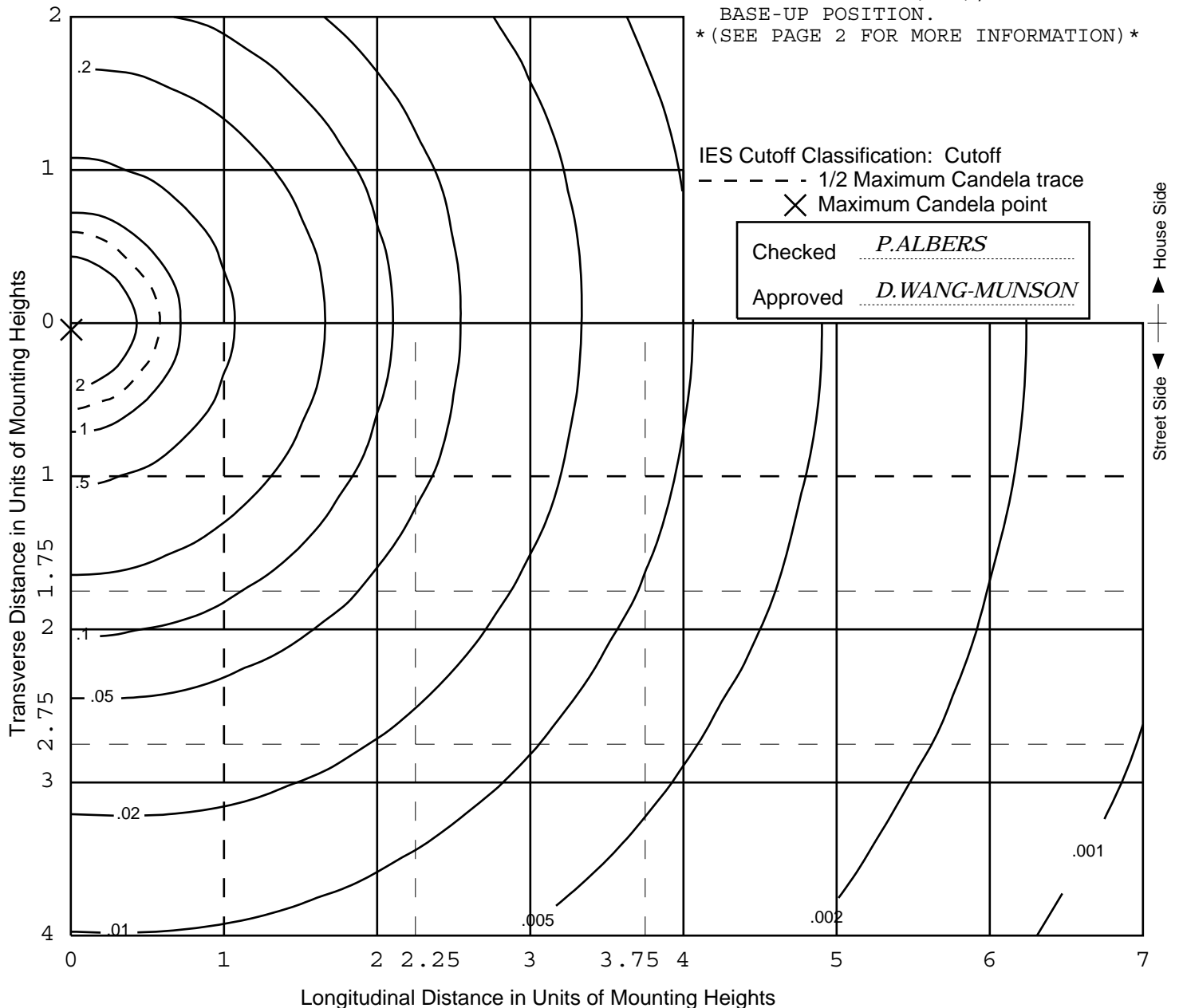
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 25 foot mounting height.



REPORT NUMBER: RAB03814
 ISSUE DATE: 09/29/17 PAGE: 1 OF 9
 DATE SAMPLE TESTED: 09/29/17
 CATALOG NUMBER:
 YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU
 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: RAB03814

PAGE: 2 OF 9

ISSUE DATE: 09/29/17

DATE SAMPLE TESTED: 09/29/17

CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

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 = 42.635 W AT 120.0 VAC.

LED DRIVER: RDD-040-A1100

TEST PROCEDURE: IESNA LM-79-08

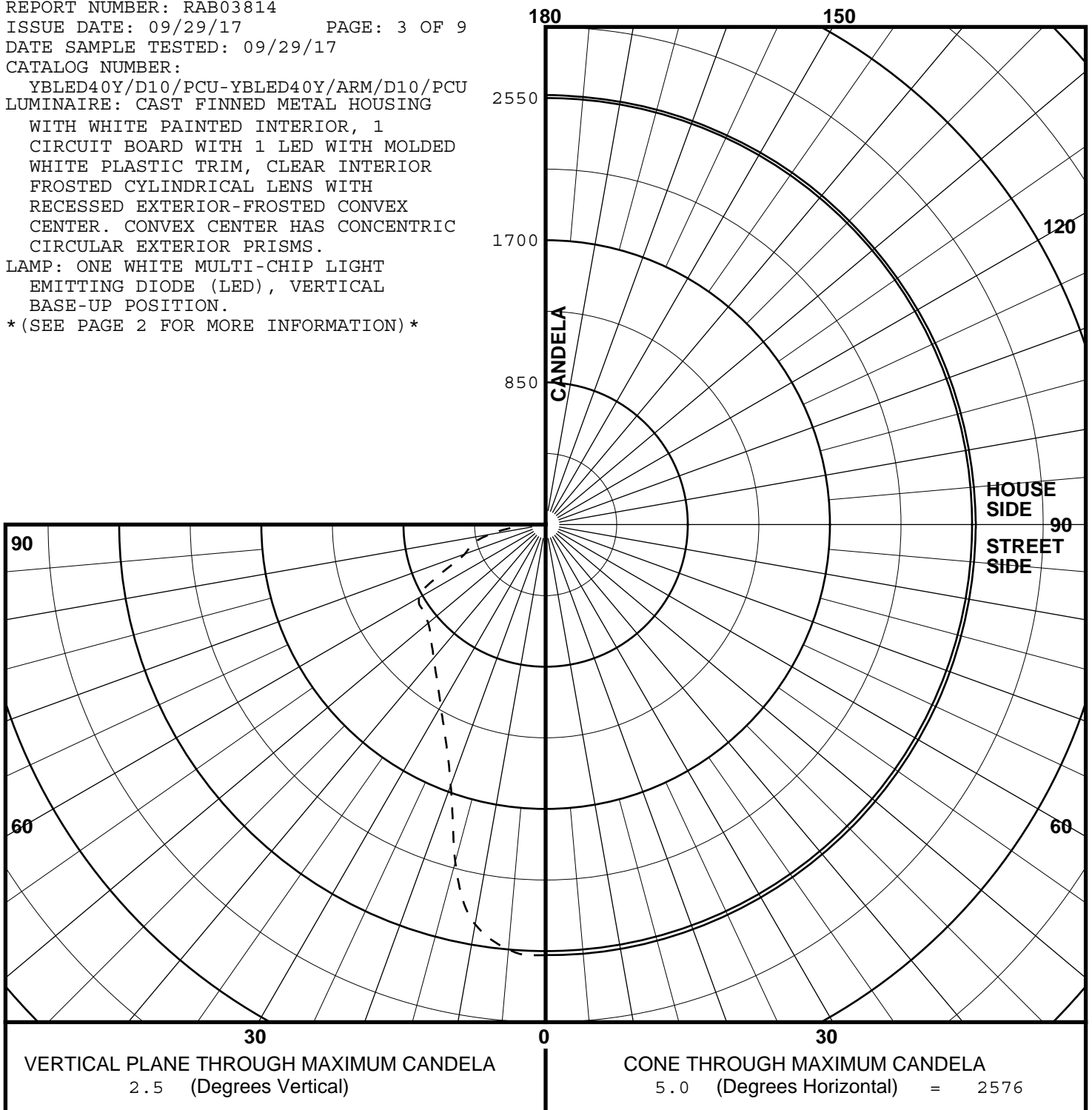
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.5

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03814
ISSUE DATE: 09/29/17 PAGE: 3 OF 9
DATE SAMPLE TESTED: 09/29/17
CATALOG NUMBER:
YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU
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: RAB03814

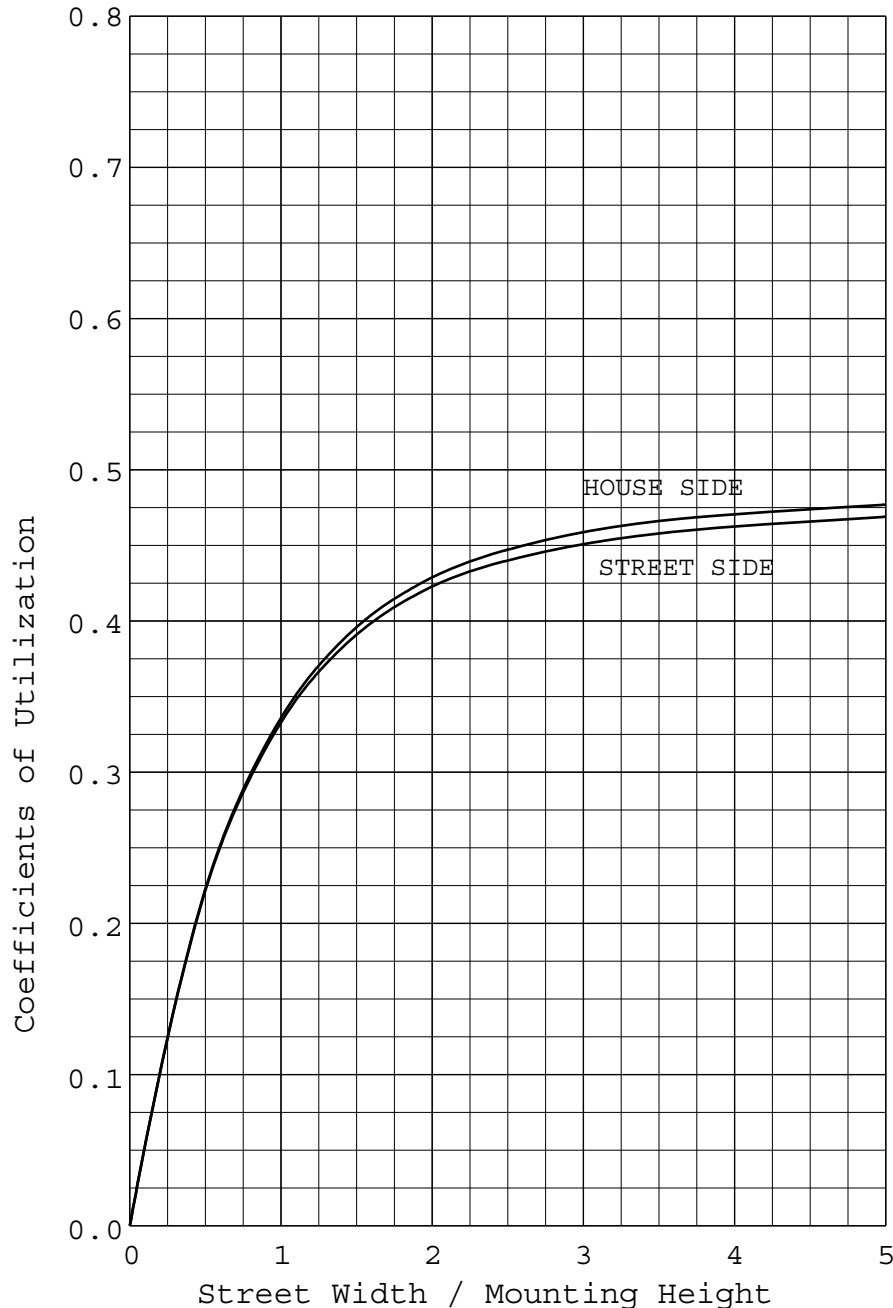
PAGE: 4 OF 9

ISSUE DATE: 09/29/17

DATE SAMPLE TESTED: 09/29/17

CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2610.	48.3
DOWNWARD HOUSE SIDE	2662.	49.3
DOWNWARD TOTAL	5272.	97.6
UPWARD STREET SIDE	66.	1.2
UPWARD HOUSE SIDE	64.	1.2
UPWARD TOTAL	130.	2.4
TOTAL FLUX	5401.	100.0
TOTAL INPUT WATTS = 42.6		
EFFICACY = 126.8 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: RAB03814

ISSUE DATE: 09/29/17

PAGE: 5 OF 9

DATE SAMPLE TESTED: 09/29/17

CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

BUG Rating:

Zonal Summary

Lumens

% of Fixture

B2 U3 G2

Zone Ratings

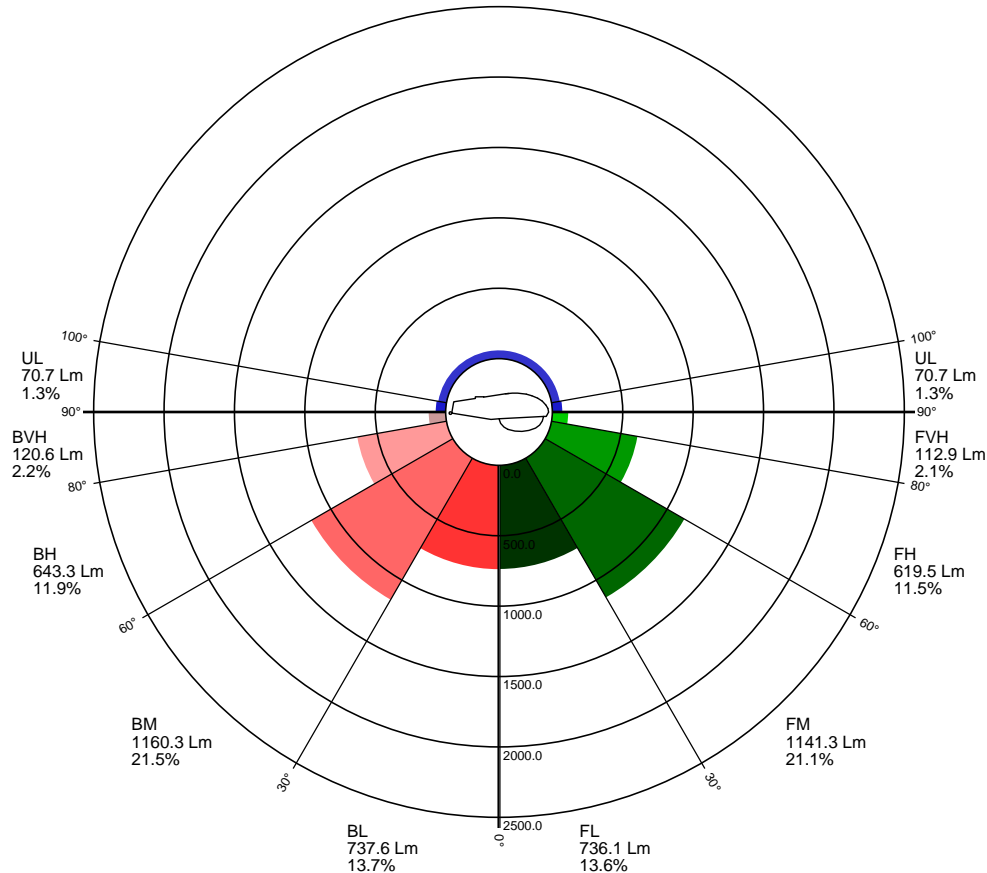
B U G

Forward		2610	48.3			
FL	(0° - 30°)	736.1	13.6			
FM	(30° - 60°)	1141.3	21.1			
FH	(60° - 80°)	619.5	11.5			G0
FVH	(80° - 90°)	112.9	2.1			G2
Backward		2662	49.3			
BL	(0° - 30°)	737.6	13.7	B2		
BM	(30° - 60°)	1160.3	21.5	B2		
BH	(60° - 80°)	643.3	11.9	B2		G0
BVH	(80° - 90°)	120.6	2.2			G2
Upward		130	2.4			
UL	(90° - 100°)	70.7	1.3		U3	
UH	(100° - 180°)	58.9	1.1		U3	
Trapped Light		0	0.0			
Total Flux		5401	100.0			

Zonal Lumen Summary

(Linear scale)

UH
58.9 Lm
1.1%



REPORT NUMBER: RAB03814

ISSUE DATE: 09/29/17

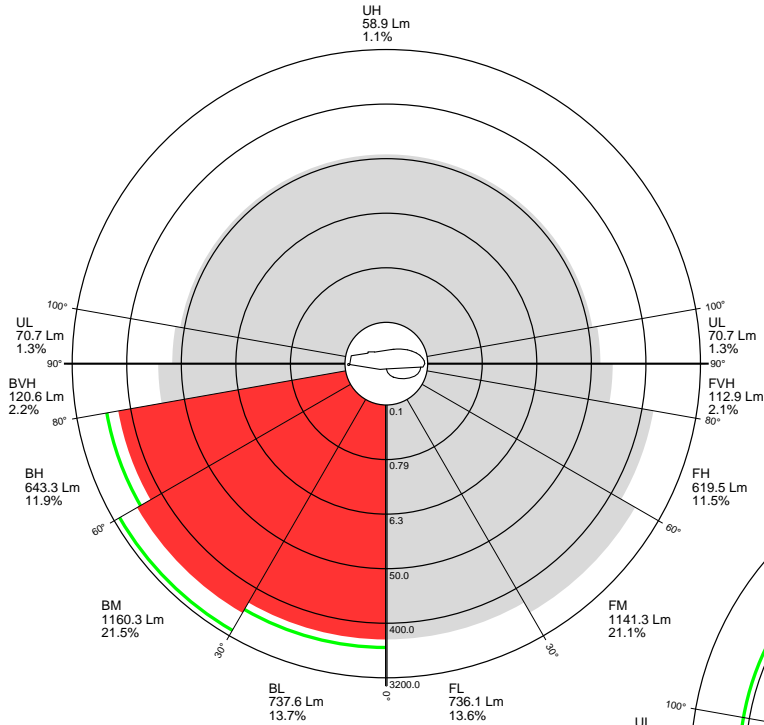
CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

PAGE: 6 OF 9

DATE SAMPLE TESTED: 09/29/17

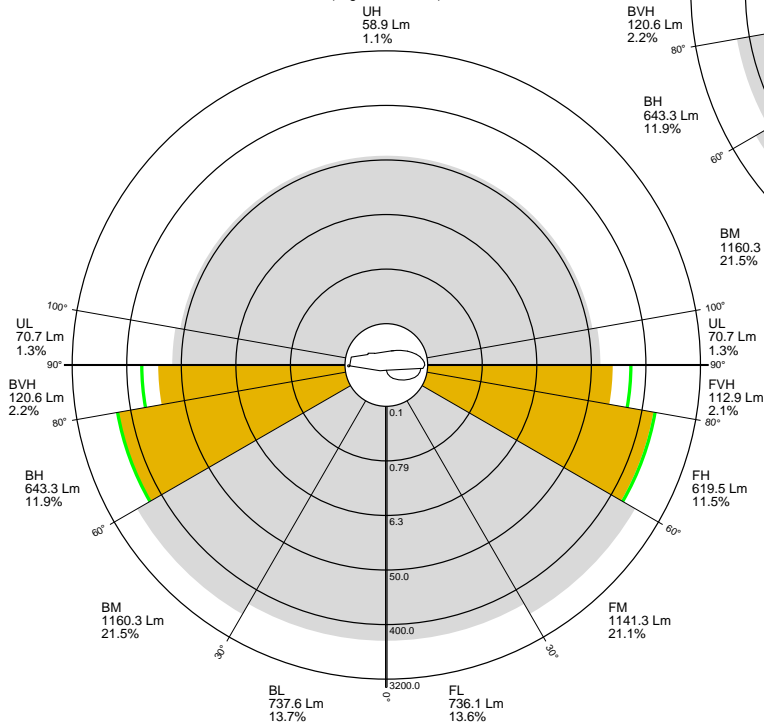
Backlight Rating Details

(Logarithmic scale)



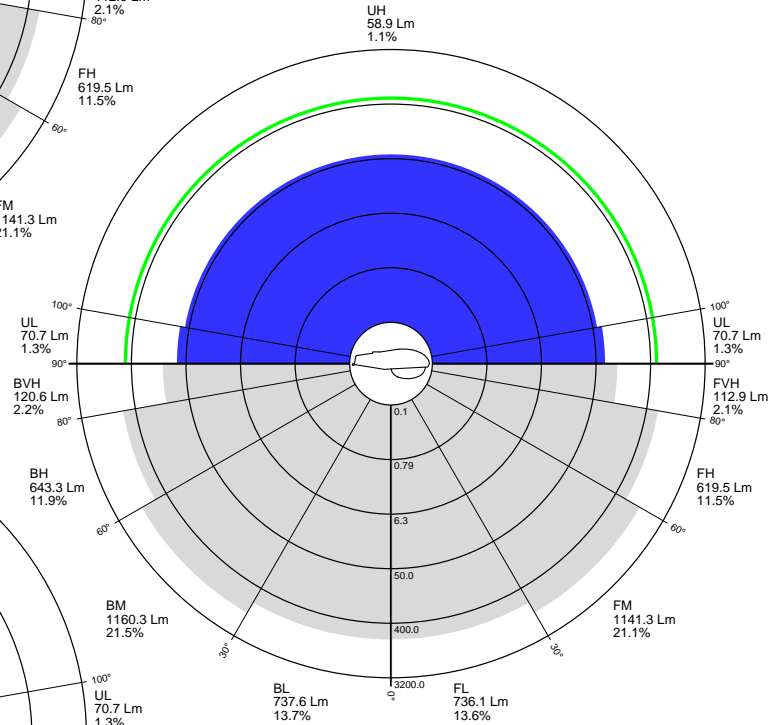
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB03814

PAGE: 7 OF 9

ISSUE DATE: 09/29/17

DATE SAMPLE TESTED: 09/29/17

CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

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.	1.
175.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
165.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
155.0	3.	3.	3.	3.	3.	3.	2.	2.	2.	2.
145.0	4.	4.	4.	4.	4.	4.	3.	3.	3.	2.
135.0	6.	6.	6.	6.	6.	6.	5.	5.	5.	5.
125.0	11.	10.	10.	10.	10.	10.	10.	10.	10.	10.
115.0	18.	19.	19.	19.	19.	19.	19.	20.	20.	19.
105.0	24.	24.	25.	25.	25.	25.	24.	24.	25.	25.
95.0	56.	57.	56.	57.	58.	59.	57.	59.	60.	62.
90.0	103.	104.	102.	104.	103.	104.	103.	106.	108.	109.
87.5	141.	144.	141.	142.	141.	142.	140.	144.	145.	146.
85.0	193.	197.	194.	197.	194.	196.	192.	197.	195.	197.
82.5	260.	265.	264.	268.	266.	270.	263.	266.	262.	262.
V 80.0	335.	341.	345.	352.	353.	355.	350.	349.	342.	345.
E 77.5	398.	405.	419.	434.	439.	441.	432.	431.	420.	420.
R 75.0	446.	455.	479.	501.	512.	515.	507.	504.	492.	486.
T 72.5	473.	483.	516.	544.	560.	567.	559.	558.	547.	539.
I 70.0	505.	514.	553.	583.	604.	618.	611.	610.	600.	591.
C 67.5	576.	585.	620.	641.	660.	679.	670.	675.	667.	667.
A 65.0	669.	686.	705.	727.	734.	757.	749.	752.	752.	752.
L 62.5	795.	806.	816.	825.	825.	839.	835.	838.	842.	847.
60.0	869.	873.	878.	877.	874.	882.	883.	886.	889.	893.
A 57.5	891.	894.	897.	894.	891.	894.	898.	901.	903.	907.
N 55.0	894.	895.	897.	896.	893.	895.	896.	898.	899.	904.
G 52.5	906.	904.	907.	907.	904.	906.	905.	907.	909.	913.
L 50.0	915.	917.	920.	920.	920.	920.	920.	923.	923.	927.
E 47.5	937.	939.	940.	944.	943.	944.	943.	949.	949.	950.
45.0	970.	971.	973.	978.	975.	978.	976.	980.	979.	982.
42.5	1000.	1003.	1005.	1009.	1008.	1009.	1009.	1013.	1013.	1016.
40.0	1039.	1043.	1044.	1048.	1047.	1050.	1050.	1053.	1053.	1056.
37.5	1080.	1085.	1084.	1088.	1090.	1095.	1093.	1097.	1096.	1097.
35.0	1127.	1132.	1131.	1137.	1139.	1144.	1143.	1147.	1146.	1148.
30.0	1250.	1254.	1254.	1262.	1262.	1268.	1266.	1272.	1272.	1274.
25.0	1411.	1416.	1412.	1421.	1417.	1425.	1423.	1430.	1424.	1431.
20.0	1649.	1659.	1654.	1664.	1657.	1667.	1660.	1668.	1659.	1665.
15.0	2071.	2088.	2080.	2093.	2081.	2088.	2071.	2079.	2061.	2066.
10.0	2422.	2427.	2422.	2429.	2423.	2425.	2415.	2418.	2407.	2405.
5.0	2550.	2551.	2550.	2551.	2549.	2549.	2546.	2547.	2542.	2546.
2.5<<	2574.	2576.	2575.	2575.	2573.	2573.	2573.	2574.	2572.	2571.
0.0	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03814

PAGE: 8 OF 9

ISSUE DATE: 09/29/17

DATE SAMPLE TESTED: 09/29/17

CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

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	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	155.0	2.	2.	2.	2.	2.	2.	2.	2.	1.	2.
	145.0	2.	2.	3.	3.	3.	3.	3.	3.	2.	2.
	135.0	5.	5.	5.	5.	5.	5.	5.	4.	3.	2.
	125.0	10.	10.	10.	10.	10.	10.	9.	8.	5.	2.
	115.0	19.	18.	18.	18.	18.	18.	19.	18.	7.	3.
	105.0	25.	24.	24.	24.	25.	25.	24.	21.	15.	9.
	95.0	61.	61.	63.	63.	65.	65.	66.	65.	62.	63.
	90.0	110.	110.	111.	113.	115.	117.	120.	117.	120.	119.
	87.5	147.	148.	150.	154.	157.	159.	161.	157.	160.	160.
	85.0	198.	199.	202.	208.	213.	216.	218.	210.	213.	212.
	82.5	264.	266.	271.	280.	288.	292.	293.	279.	279.	277.
V	80.0	344.	344.	352.	363.	374.	378.	376.	358.	352.	348.
E	77.5	419.	424.	432.	446.	461.	465.	460.	434.	423.	409.
R	75.0	487.	493.	504.	517.	532.	537.	529.	501.	486.	462.
T	72.5	540.	545.	560.	570.	582.	587.	582.	556.	537.	496.
I	70.0	591.	595.	608.	617.	629.	636.	640.	617.	595.	537.
C	67.5	663.	670.	683.	693.	698.	706.	716.	709.	676.	597.
A	65.0	755.	756.	773.	778.	787.	794.	806.	807.	774.	699.
L	62.5	848.	851.	863.	866.	872.	877.	885.	892.	872.	815.
	60.0	893.	894.	901.	901.	901.	904.	908.	916.	920.	891.
A	57.5	907.	909.	912.	912.	911.	914.	918.	926.	929.	918.
N	55.0	905.	906.	909.	911.	909.	912.	916.	924.	930.	928.
G	52.5	915.	915.	918.	921.	921.	922.	928.	933.	936.	932.
L	50.0	928.	929.	932.	933.	934.	935.	940.	944.	951.	948.
E	47.5	951.	955.	956.	956.	956.	958.	965.	965.	969.	969.
	45.0	981.	984.	985.	985.	986.	986.	987.	989.	995.	996.
	42.5	1015.	1019.	1019.	1021.	1020.	1020.	1021.	1023.	1028.	1028.
	40.0	1055.	1057.	1059.	1060.	1061.	1061.	1061.	1063.	1066.	1064.
	37.5	1098.	1099.	1102.	1103.	1106.	1106.	1106.	1108.	1112.	1109.
	35.0	1148.	1151.	1156.	1155.	1159.	1158.	1160.	1159.	1164.	1161.
	30.0	1271.	1277.	1281.	1280.	1285.	1284.	1288.	1287.	1290.	1285.
	25.0	1428.	1432.	1427.	1431.	1438.	1433.	1440.	1436.	1440.	1433.
	20.0	1657.	1662.	1664.	1658.	1666.	1661.	1670.	1662.	1667.	1659.
	15.0	2052.	2062.	2064.	2060.	2074.	2065.	2079.	2070.	2082.	2069.
	10.0	2398.	2404.	2398.	2402.	2408.	2407.	2413.	2409.	2413.	2408.
	5.0	2544.	2542.	2542.	2539.	2541.	2538.	2541.	2537.	2540.	2540.
	2.5<<	2572.	2570.	2570.	2570.	2567.	2567.	2569.	2566.	2568.	2566.
	0.0	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.	2574.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03814

PAGE: 9 OF 9

ISSUE DATE: 09/29/17

DATE SAMPLE TESTED: 09/29/17

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.

5-DEGREE

ZONAL LUMEN SUMMARY

0- 5	61
5- 10	177
10- 15	267
15- 20	305
20- 25	322
25- 30	341
30- 35	356
35- 40	367
40- 45	377
45- 50	386
50- 55	399
55- 60	418
60- 65	406
65- 70	340
70- 75	287
75- 80	230
80- 85	150
85- 90	84
90- 95	46
95-100	25
100-105	14
105-110	11
110-115	10
115-120	7
120-125	5
125-130	4
130-135	2
135-140	2
140-145	1
145-150	1
150-155	1
155-160	0
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE

ZONAL LUMEN SUMMARY

0- 10	239
0- 20	811
0- 30	1474
0- 40	2197
0- 50	2959
0- 60	3775
0- 70	4521
0- 80	5038
0- 90	5272
0-100	5342
0-110	5368
0-120	5385
0-130	5394
0-140	5398
0-150	5399
0-160	5401
0-170	5401
0-180	5401

REPORT NUMBER: RAB03815
DATE: 9/29/2017
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.
CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

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-040-A1100

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:
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	N/A
	OCEAN OPTICS QE65PRO Spectroradiometer	3/01/18
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	09/27/18

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 (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

REPORT NUMBER: RAB03815
 DATE: 9/29/2017
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.
 CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

Page 2 of 4

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	5401 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4318
Chromaticity Ordinate y	0.4034
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2476
Chromaticity Ordinate v'	0.5204
Correlated Color Temp CCT (K)	3082
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	15359 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.357
Input Power (Watts)	42.6
Input Power Factor (%)	99.7
Input Current THD (%)	6.3
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	126.8
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.171
Input Power (Watts)	42.2
Input Power Factor (%)	89.3
Input Current THD (%)	8.6
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	70
R1 Light greyish red	66
R2 Dark greyish yellow	80
R3 Strong yellowish green	91
R4 Moderate yellowish green	65
R5 Light bluish green	65
R6 Light blue	72
R7 Light violet	78
R8 Light reddish purple	45
R9 Strong red	-32
R10 Strong yellow	54
R11 Strong green	57
R12 Strong blue	42
R13 Light yellowish pink (skin)	69
R14 Moderate olive green (leaf)	95

*NOTE:

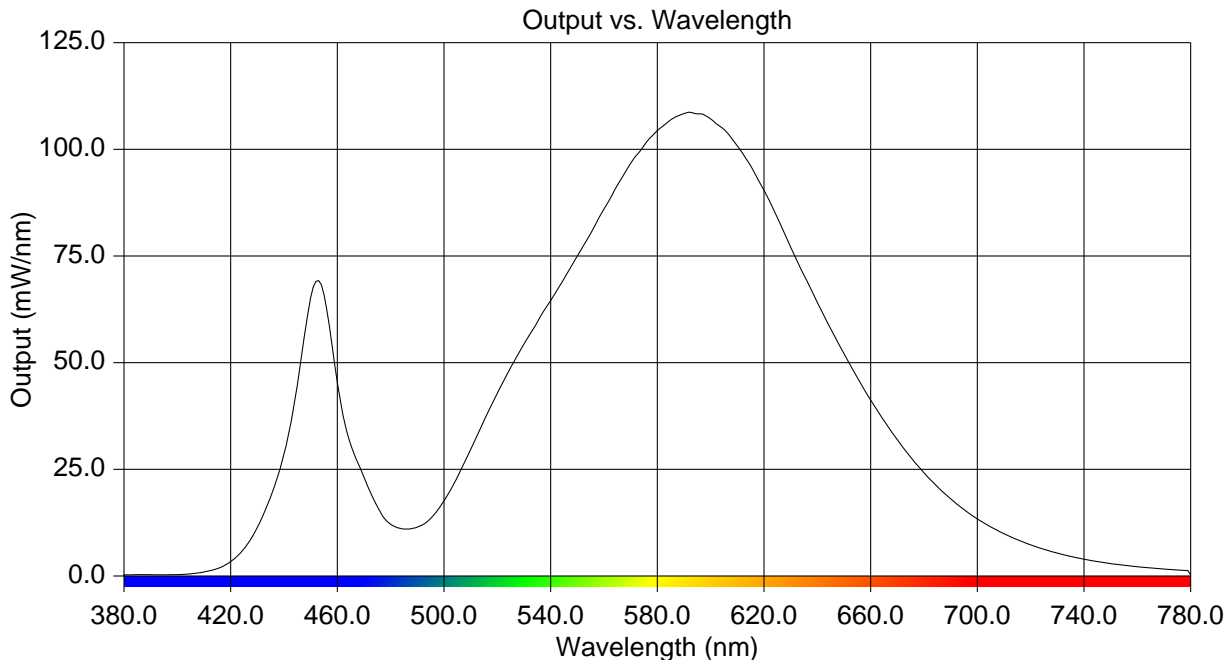
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03815
 DATE: 9/29/2017
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.
 CATALOG NUMBER: YBLED40Y/D10/PCU-YBLED40Y/ARM/D10/PCU

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.266	515	36.428	650	52.080
385	0.281	520	42.872	655	46.500
390	0.272	525	48.807	660	41.183
395	0.295	530	54.366	665	36.456
400	0.355	535	59.501	670	31.920
405	0.509	540	64.542	675	27.778
410	0.877	545	69.702	680	24.229
415	1.731	550	74.992	685	20.941
420	3.372	555	80.287	690	18.065
425	6.354	560	85.992	695	15.576
430	11.366	565	91.574	700	13.380
435	18.573	570	96.637	705	11.529
440	28.393	575	100.877	710	9.885
445	44.796	580	104.411	715	8.499
450	65.256	585	106.919	720	7.305
455	65.957	590	108.365	725	6.273
460	45.334	595	108.313	730	5.338
465	30.801	600	107.127	735	4.597
470	23.097	605	104.680	740	3.914
475	16.270	610	100.865	745	3.352
480	12.059	615	96.141	750	2.930
485	11.034	620	90.401	755	2.510
490	11.426	625	83.975	760	2.173
495	13.490	630	77.146	765	1.874
500	17.614	635	70.448	770	1.627
505	23.135	640	64.084	775	1.410
510	29.675	645	58.002	780	0.212



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CIE Chromaticity Diagram

