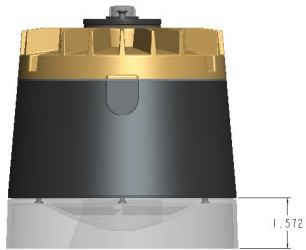


## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

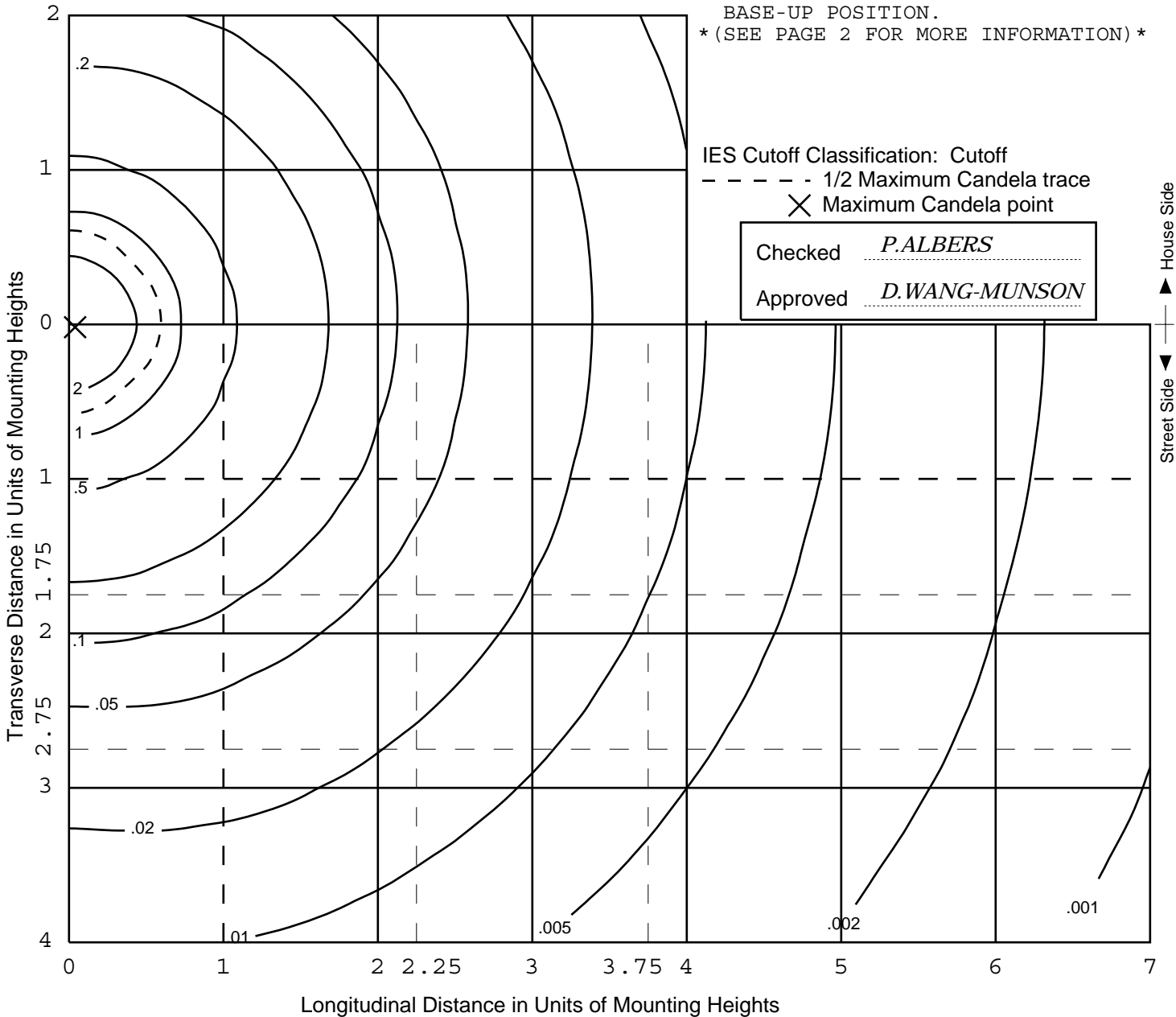
Values based on 25 foot mounting height.



REPORT NUMBER: RAB03812  
 ISSUE DATE: 10/02/17 PAGE: 1 OF 9  
 DATE SAMPLE TESTED: 10/02/17  
 CATALOG NUMBER:  
 YBLED40N/D10/PCU-YBLED40N/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)\*

IES Cutoff Classification: Cutoff  
 - - - - 1/2 Maximum Candela trace  
 X Maximum Candela point



REPORT NUMBER: RAB03812

PAGE: 2 OF 9

ISSUE DATE: 10/02/17

DATE SAMPLE TESTED: 10/02/17

CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/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 = 42.036 W AT 120.0 VAC.

LED DRIVER: RDD-040-A1100

TEST PROCEDURE: IESNA LM-79-08

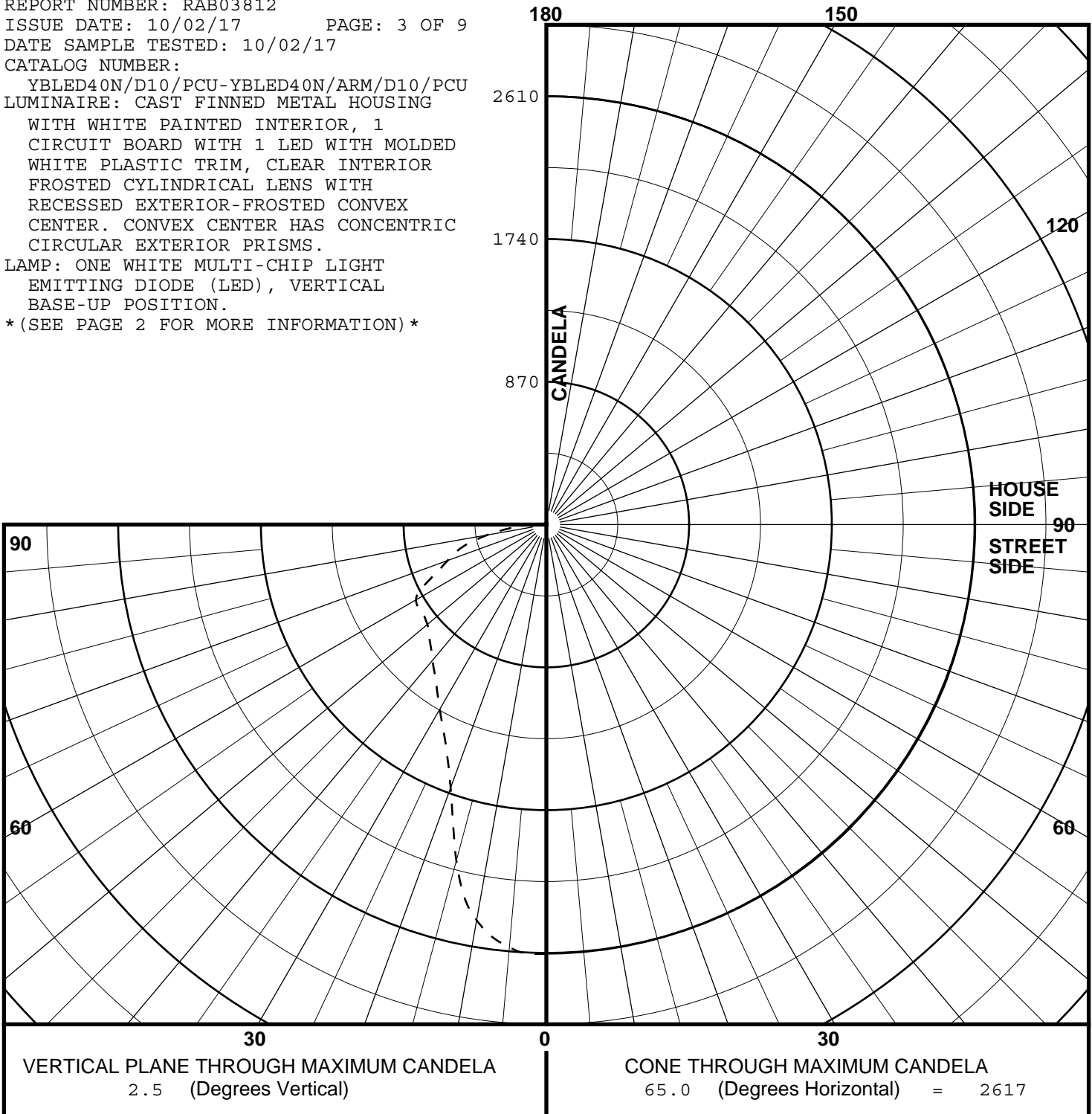
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE

AMBIENT: 24.5

ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB03812  
 ISSUE DATE: 10/02/17 PAGE: 3 OF 9  
 DATE SAMPLE TESTED: 10/02/17  
 CATALOG NUMBER:  
 YBLED40N/D10/PCU-YBLED40N/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: RAB03812

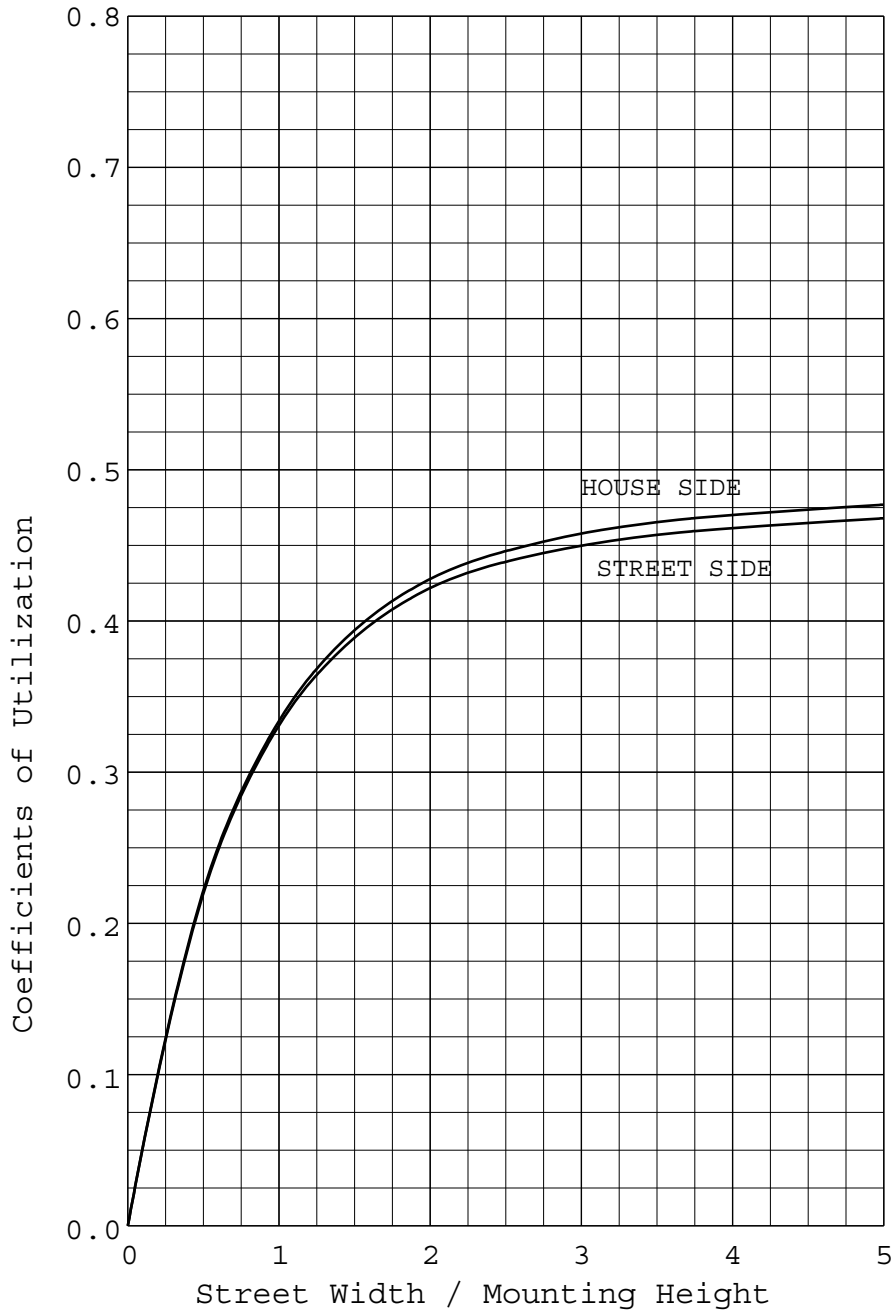
PAGE: 4 OF 9

ISSUE DATE: 10/02/17

DATE SAMPLE TESTED: 10/02/17

CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

## COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	2686.	48.3
DOWNWARD HOUSE SIDE	2742.	49.3
DOWNWARD TOTAL	5428.	97.6
UPWARD STREET SIDE	68.	1.2
UPWARD HOUSE SIDE	67.	1.2
UPWARD TOTAL	135.	2.4
TOTAL FLUX	5563.	100.0

TOTAL INPUT WATTS = 42.0  
EFFICACY = 132.5 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: RAB03812

ISSUE DATE: 10/02/17

PAGE: 5 OF 9

DATE SAMPLE TESTED: 10/02/17

CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

BUG Rating:

Zonal Summary

Lumens

% of Fixture

B2 U3 G2

Zone Ratings

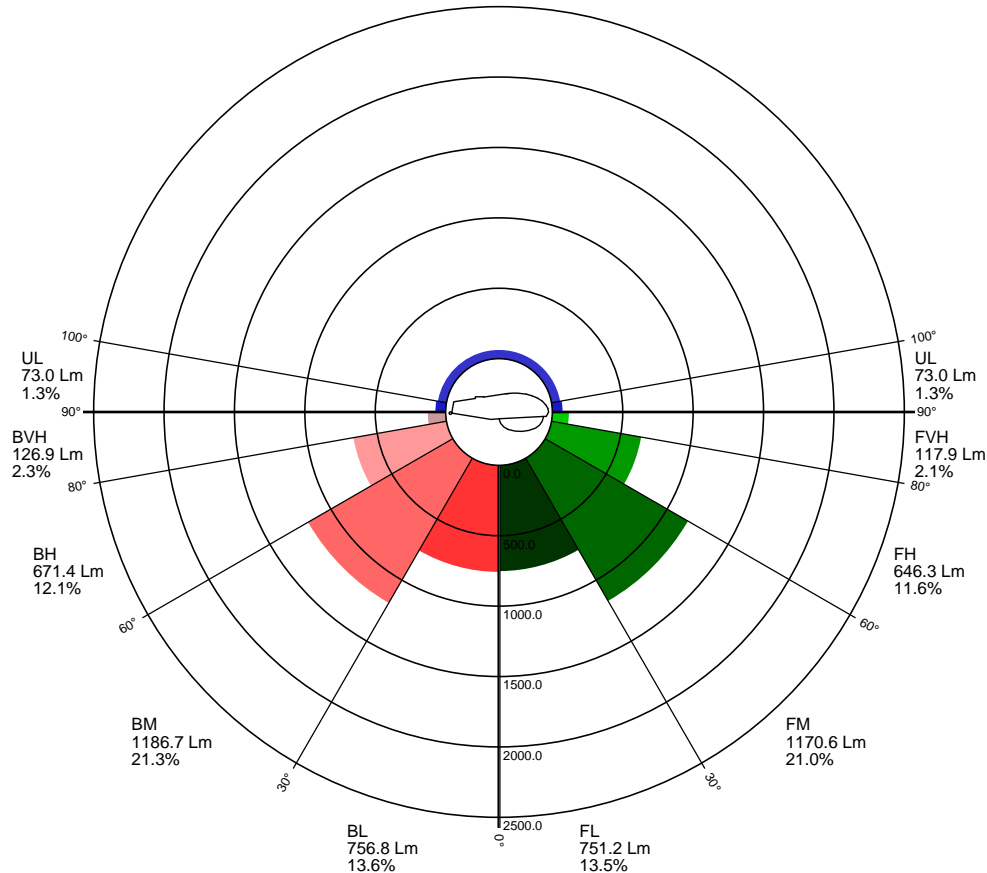
B U G

Forward		2686	48.3			
FL	(0° - 30°)	751.2	13.5			
FM	(30° - 60°)	1170.6	21.0			
FH	(60° - 80°)	646.3	11.6			G0
FVH	(80° - 90°)	117.9	2.1			G2
Backward		2742	49.3			
BL	(0° - 30°)	756.8	13.6	B2		
BM	(30° - 60°)	1186.7	21.3	B2		
BH	(60° - 80°)	671.4	12.1	B2		G1
BVH	(80° - 90°)	126.9	2.3			G2
Upward		135	2.4			
UL	(90° - 100°)	73.0	1.3		U3	
UH	(100° - 180°)	61.9	1.1		U3	
Trapped Light		0	0.0			
Total Flux		5563	100.0			

## Zonal Lumen Summary

(Linear scale)

UH  
61.9 Lm  
1.1%



REPORT NUMBER: RAB03812

ISSUE DATE: 10/02/17

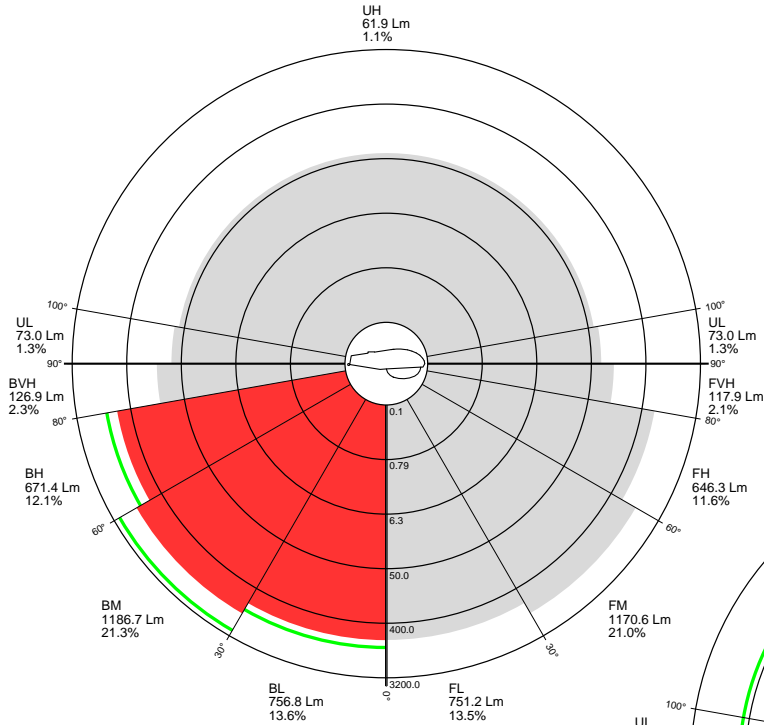
CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

PAGE: 6 OF 9

DATE SAMPLE TESTED: 10/02/17

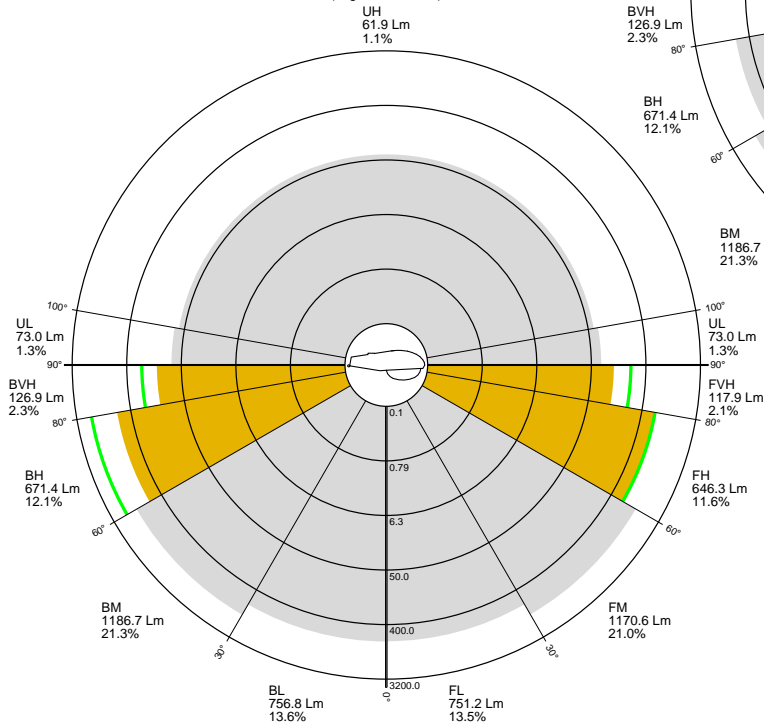
### Backlight Rating Details

(Logarithmic scale)



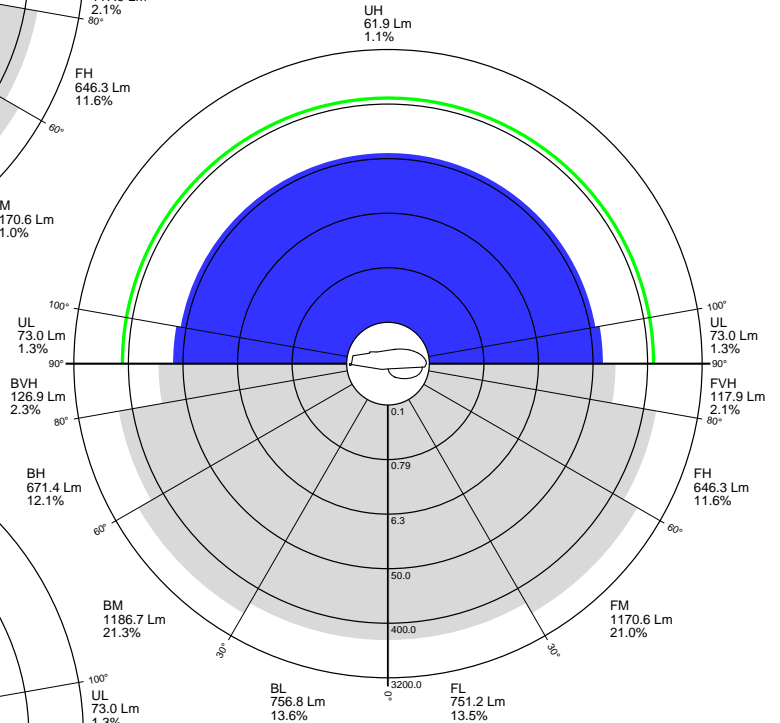
### Glare Rating Details

(Logarithmic scale)



### Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB03812

PAGE: 7 OF 9

ISSUE DATE: 10/02/17

DATE SAMPLE TESTED: 10/02/17

CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	165.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	1.
	155.0	3.	3.	3.	3.	3.	2.	2.	2.	2.	2.
	145.0	3.	3.	4.	4.	4.	3.	3.	3.	2.	2.
	135.0	6.	6.	6.	6.	6.	6.	5.	5.	5.	5.
	125.0	10.	11.	10.	10.	10.	10.	10.	10.	10.	10.
	115.0	20.	20.	20.	21.	20.	20.	20.	21.	21.	21.
	105.0	24.	25.	25.	26.	26.	26.	25.	25.	26.	26.
	95.0	57.	58.	57.	58.	59.	60.	59.	61.	62.	63.
	90.0	105.	108.	106.	107.	106.	107.	106.	109.	111.	112.
	87.5	146.	150.	147.	147.	145.	147.	145.	149.	150.	153.
	85.0	202.	207.	204.	206.	203.	203.	200.	204.	202.	204.
	82.5	274.	280.	279.	283.	280.	282.	275.	278.	273.	276.
V	80.0	350.	358.	365.	372.	370.	371.	363.	365.	356.	358.
E	77.5	424.	432.	450.	463.	463.	464.	459.	451.	442.	441.
R	75.0	473.	483.	514.	533.	538.	540.	540.	531.	517.	513.
T	72.5	501.	512.	553.	578.	588.	593.	598.	588.	575.	567.
I	70.0	532.	543.	589.	617.	629.	641.	647.	641.	630.	621.
C	67.5	601.	613.	652.	673.	681.	692.	700.	697.	696.	688.
A	65.0	689.	696.	731.	750.	753.	763.	774.	778.	775.	777.
L	62.5	823.	828.	846.	847.	847.	855.	859.	868.	866.	871.
	60.0	902.	904.	909.	908.	901.	904.	910.	917.	915.	920.
A	57.5	923.	925.	926.	922.	916.	918.	923.	929.	929.	933.
N	55.0	923.	924.	926.	922.	916.	919.	922.	923.	926.	930.
G	52.5	932.	928.	931.	930.	928.	929.	931.	933.	935.	939.
L	50.0	943.	943.	944.	943.	943.	944.	945.	947.	949.	952.
E	47.5	963.	963.	963.	966.	966.	966.	968.	971.	975.	977.
	45.0	994.	994.	998.	999.	998.	999.	1000.	1004.	1007.	1009.
	42.5	1025.	1025.	1028.	1030.	1032.	1031.	1034.	1038.	1042.	1044.
	40.0	1066.	1065.	1066.	1070.	1070.	1071.	1076.	1080.	1083.	1083.
	37.5	1109.	1107.	1108.	1112.	1112.	1118.	1121.	1123.	1125.	1126.
	35.0	1157.	1156.	1159.	1161.	1162.	1166.	1171.	1173.	1175.	1177.
	30.0	1287.	1283.	1285.	1287.	1288.	1295.	1297.	1300.	1302.	1304.
	25.0	1456.	1450.	1445.	1452.	1447.	1454.	1456.	1458.	1461.	1463.
	20.0	1708.	1698.	1695.	1704.	1696.	1705.	1698.	1707.	1698.	1704.
	15.0	2113.	2130.	2119.	2132.	2120.	2132.	2119.	2120.	2102.	2110.
	10.0	2456.	2466.	2461.	2465.	2457.	2457.	2451.	2448.	2440.	2445.
	5.0	2588.	2587.	2590.	2593.	2588.	2587.	2585.	2586.	2582.	2584.
	2.5<<	2614.	2613.	2613.	2613.	2615.	2616.	2615.	2617.	2614.	2613.
	0.0	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.

||  
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03812

PAGE: 8 OF 9

ISSUE DATE: 10/02/17

DATE SAMPLE TESTED: 10/02/17

CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	165.0	2.	2.	2.	1.	2.	2.	2.	2.	2.	2.	2.
	155.0	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	145.0	2.	2.	3.	3.	3.	3.	3.	3.	2.	2.	2.
	135.0	5.	5.	5.	6.	6.	6.	5.	5.	3.	2.	2.
	125.0	11.	11.	11.	11.	10.	10.	10.	9.	6.	3.	3.
	115.0	20.	20.	20.	20.	20.	20.	21.	19.	8.	3.	3.
	105.0	25.	26.	26.	26.	26.	26.	25.	22.	16.	9.	8.
	95.0	64.	65.	66.	66.	67.	66.	68.	67.	64.	64.	66.
	90.0	115.	115.	117.	119.	121.	121.	123.	122.	125.	124.	127.
	87.5	154.	156.	158.	162.	165.	167.	168.	164.	168.	169.	172.
	85.0	207.	207.	211.	220.	219.	224.	228.	221.	225.	226.	229.
	82.5	277.	282.	285.	294.	307.	309.	308.	296.	298.	295.	299.
V	80.0	359.	363.	369.	377.	397.	397.	397.	379.	375.	367.	370.
E	77.5	441.	448.	456.	471.	488.	490.	487.	463.	451.	436.	437.
R	75.0	514.	516.	530.	545.	563.	566.	563.	531.	517.	489.	487.
T	72.5	570.	572.	587.	601.	616.	619.	616.	589.	569.	522.	515.
I	70.0	621.	625.	636.	648.	662.	670.	673.	650.	624.	557.	546.
C	67.5	693.	700.	710.	722.	729.	733.	746.	739.	701.	611.	598.
A	65.0	780.	792.	804.	809.	813.	826.	835.	840.	795.	718.	708.
L	62.5	879.	883.	887.	895.	898.	905.	912.	924.	894.	836.	818.
	60.0	921.	923.	925.	928.	928.	927.	932.	944.	947.	911.	901.
A	57.5	934.	935.	937.	937.	935.	936.	940.	950.	953.	939.	935.
N	55.0	930.	931.	933.	933.	932.	930.	934.	941.	951.	944.	942.
G	52.5	940.	941.	944.	943.	940.	941.	943.	950.	952.	949.	948.
L	50.0	952.	954.	954.	954.	953.	951.	953.	960.	966.	963.	960.
E	47.5	977.	978.	980.	977.	976.	975.	978.	982.	985.	986.	986.
	45.0	1008.	1008.	1008.	1006.	1004.	1004.	1005.	1009.	1012.	1014.	1014.
	42.5	1043.	1043.	1044.	1044.	1041.	1039.	1040.	1043.	1047.	1049.	1048.
	40.0	1082.	1083.	1082.	1083.	1085.	1083.	1083.	1088.	1089.	1088.	1091.
	37.5	1126.	1126.	1128.	1130.	1132.	1133.	1133.	1137.	1137.	1135.	1139.
	35.0	1178.	1178.	1182.	1186.	1187.	1188.	1190.	1191.	1191.	1188.	1192.
	30.0	1306.	1307.	1312.	1316.	1318.	1323.	1324.	1326.	1324.	1319.	1326.
	25.0	1464.	1463.	1465.	1471.	1473.	1478.	1480.	1481.	1480.	1476.	1479.
	20.0	1705.	1702.	1705.	1710.	1714.	1717.	1719.	1713.	1723.	1714.	1722.
	15.0	2096.	2106.	2110.	2117.	2124.	2131.	2136.	2127.	2142.	2131.	2144.
	10.0	2441.	2446.	2446.	2449.	2454.	2459.	2458.	2463.	2468.	2466.	2472.
	5.0	2583.	2583.	2585.	2582.	2586.	2583.	2584.	2585.	2584.	2584.	2582.
	2.5<<	2614.	2613.	2611.	2613.	2611.	2610.	2610.	2611.	2609.	2609.	2610.
	0.0	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.	2616.

CONE OF MAXIMUM CANDELA



REPORT NUMBER: RAB03812

PAGE: 9 OF 9

ISSUE DATE: 10/02/17

DATE SAMPLE TESTED: 10/02/17

PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.

### 5-DEGREE

#### ZONAL LUMEN SUMMARY

0- 5	62
5- 10	180
10- 15	273
15- 20	313
20- 25	330
25- 30	349
30- 35	365
35- 40	376
40- 45	385
45- 50	394
50- 55	408
55- 60	429
60- 65	419
65- 70	353
70- 75	303
75- 80	243
80- 85	157
85- 90	87
90- 95	48
95-100	25
100-105	15
105-110	12
110-115	11
115-120	8
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	243
0- 20	828
0- 30	1508
0- 40	2248
0- 50	3028
0- 60	3865
0- 70	4637
0- 80	5183
0- 90	5428
0-100	5501
0-110	5528
0-120	5546
0-130	5555
0-140	5559
0-150	5561
0-160	5562
0-170	5563
0-180	5563

REPORT NUMBER: RAB03813  
DATE: 9/29/2017  
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.  
CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/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<sub>a</sub>,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: RAB03813  
 DATE: 9/29/2017  
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.  
 CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

Page 2 of 4

### RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	5563 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3776
Chromaticity Ordinate y	0.3769
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2232
Chromaticity Ordinate v'	0.5012
Correlated Color Temp CCT (K)	4079
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	16067 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.352
Input Power (Watts)	42.0
Input Power Factor (%)	99.7
Input Current THD (%)	6.7
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	132.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.168
Input Power (Watts)	41.6
Input Power Factor (%)	89.1
Input Current THD (%)	9.0
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	72
R1 Light greyish red	69
R2 Dark greyish yellow	79
R3 Strong yellowish green	86
R4 Moderate yellowish green	69
R5 Light bluish green	68
R6 Light blue	70
R7 Light violet	82
R8 Light reddish purple	53
R9 Strong red	-28
R10 Strong yellow	50
R11 Strong green	63
R12 Strong blue	38
R13 Light yellowish pink (skin)	71
R14 Moderate olive green (leaf)	92

### \*NOTE:

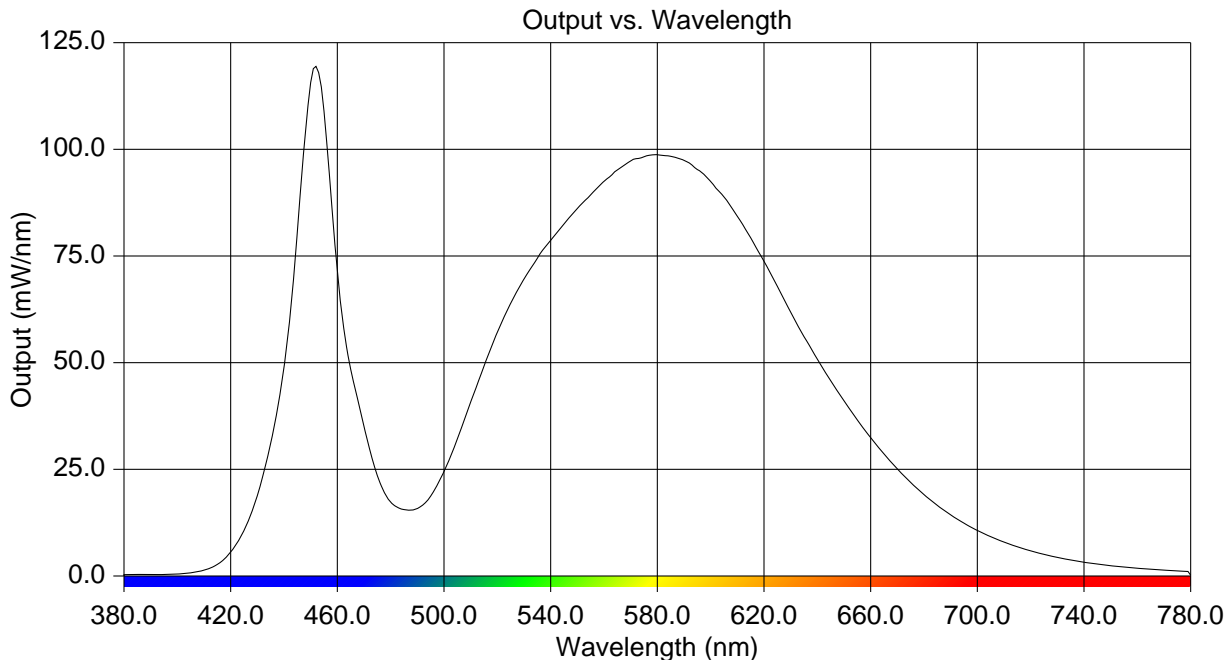
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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: RAB03813  
 DATE: 9/29/2017  
 PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.  
 CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

Page 3 of 4

### RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.304	515	49.207	650	41.055
385	0.313	520	57.199	655	36.572
390	0.334	525	63.815	660	32.388
395	0.377	530	69.642	665	28.627
400	0.494	535	74.457	670	25.101
405	0.733	540	78.690	675	21.894
410	1.336	545	82.498	680	19.117
415	2.719	550	86.172	685	16.544
420	5.597	555	89.336	690	14.332
425	10.680	560	92.493	695	12.386
430	18.829	565	95.187	700	10.666
435	30.935	570	97.213	705	9.216
440	48.753	575	98.258	710	7.936
445	80.409	580	98.779	715	6.844
450	115.643	585	98.368	720	5.901
455	108.949	590	97.412	725	5.091
460	71.434	595	95.259	730	4.359
465	48.475	600	92.471	735	3.752
470	34.989	605	88.831	740	3.203
475	23.524	610	84.304	745	2.783
480	17.301	615	79.280	750	2.423
485	15.563	620	73.766	755	2.093
490	15.814	625	67.854	760	1.822
495	18.720	630	61.853	765	1.574
500	24.501	635	56.097	770	1.367
505	32.053	640	50.796	775	1.190
510	40.766	645	45.795	780	0.179



REPORT NUMBER: RAB03813  
DATE: 9/29/2017  
PREPARED FOR: RAB LIGHTING INC. RC LIGHTING.  
CATALOG NUMBER: YBLED40N/D10/PCU-YBLED40N/ARM/D10/PCU

Page 4 of 4

## CIE Chromaticity Diagram

