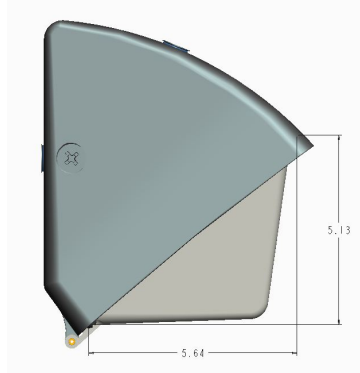


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

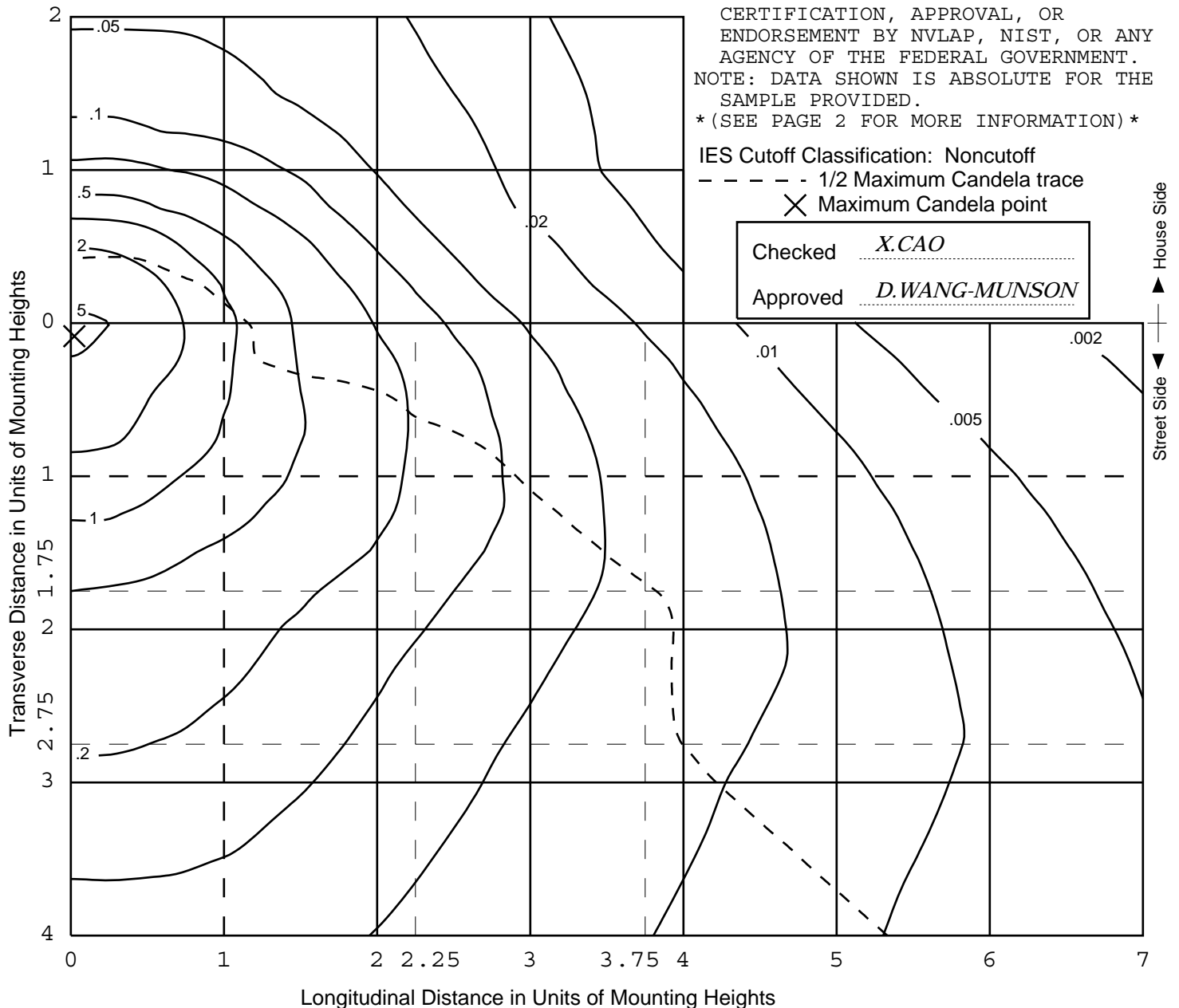
Values based on 12 foot mounting height.



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 DATE SAMPLE TESTED: 03/30/17
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL RESISTANT PRISMATIC POLYCARBONATE REFRACTOR.
 LAMP: SEVENTY TWO WHITE LIGHT EMITTING DIODES (LEDs).
 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.
 (SEE PAGE 2 FOR MORE INFORMATION)

IES Cutoff Classification: Noncutoff

--- 1/2 Maximum Candela trace
 X Maximum Candela point



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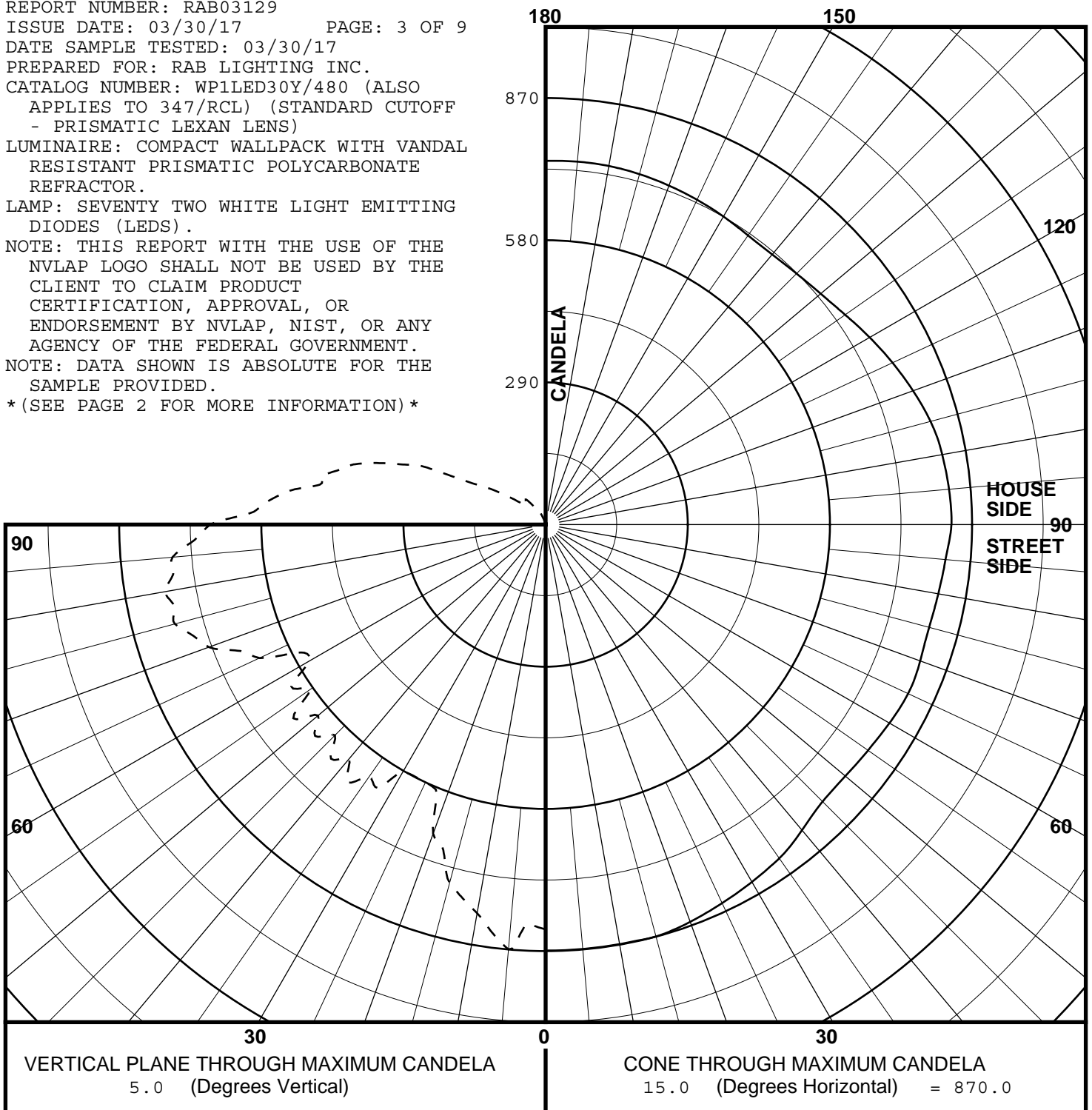
PAGE: 2 OF 9
DATE SAMPLE TESTED: 03/30/17

ADDITIONAL INFORMATION

TOTAL INPUT WATTS = 28.345 W AT 480.0 VAC.
LED DRIVER: RD-LT40-A0700-60PF
TEST PROCEDURE: IESNA LM-79-08
LM-80 DATA AVAILABLE FROM MANUFACTURER FOR SOLID STATE SOURCE
AMBIENT: 24.9
ACCREDITED LABORATORY CODE 201058-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

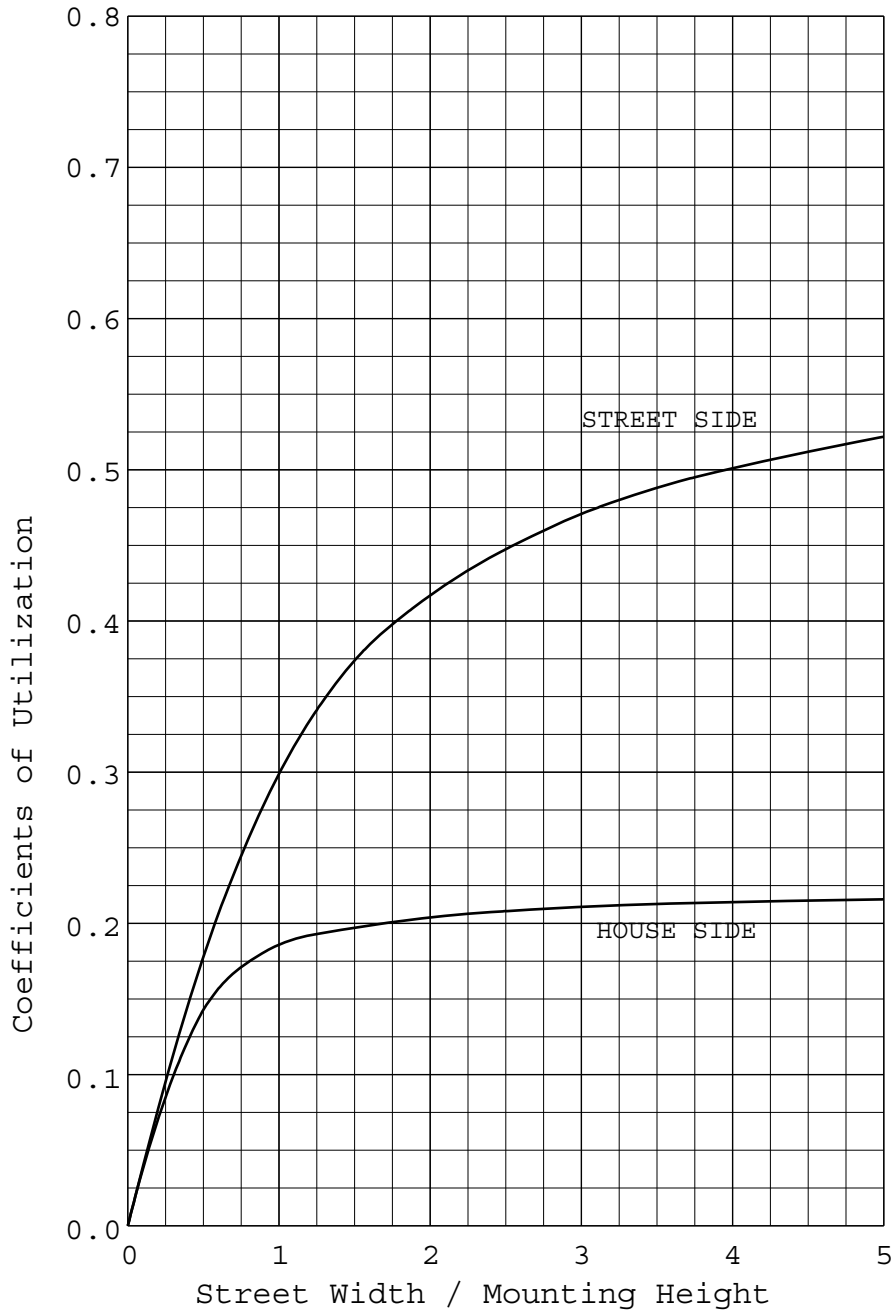
REPORT NUMBER: RAB03129
 ISSUE DATE: 03/30/17 PAGE: 3 OF 9
 DATE SAMPLE TESTED: 03/30/17
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30Y/480 (ALSO
 APPLIES TO 347/RCL) (STANDARD CUTOFF
 - PRISMATIC LEXAN LENS)
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL
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 REFRACTOR.
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 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 (SEE PAGE 2 FOR MORE INFORMATION)



REPORT NUMBER: RAB03129
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1736.	59.9
DOWNWARD HOUSE SIDE	640.	22.1
DOWNWARD TOTAL	2376.	82.0
UPWARD STREET SIDE	476.	16.4
UPWARD HOUSE SIDE	45.	1.5
UPWARD TOTAL	521.	18.0
TOTAL FLUX	2897.	100.0
TOTAL INPUT WATTS = 28.3		
EFFICACY = 102.4 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: RAB03129
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 PREPARED FOR: RAB LIGHTING INC.

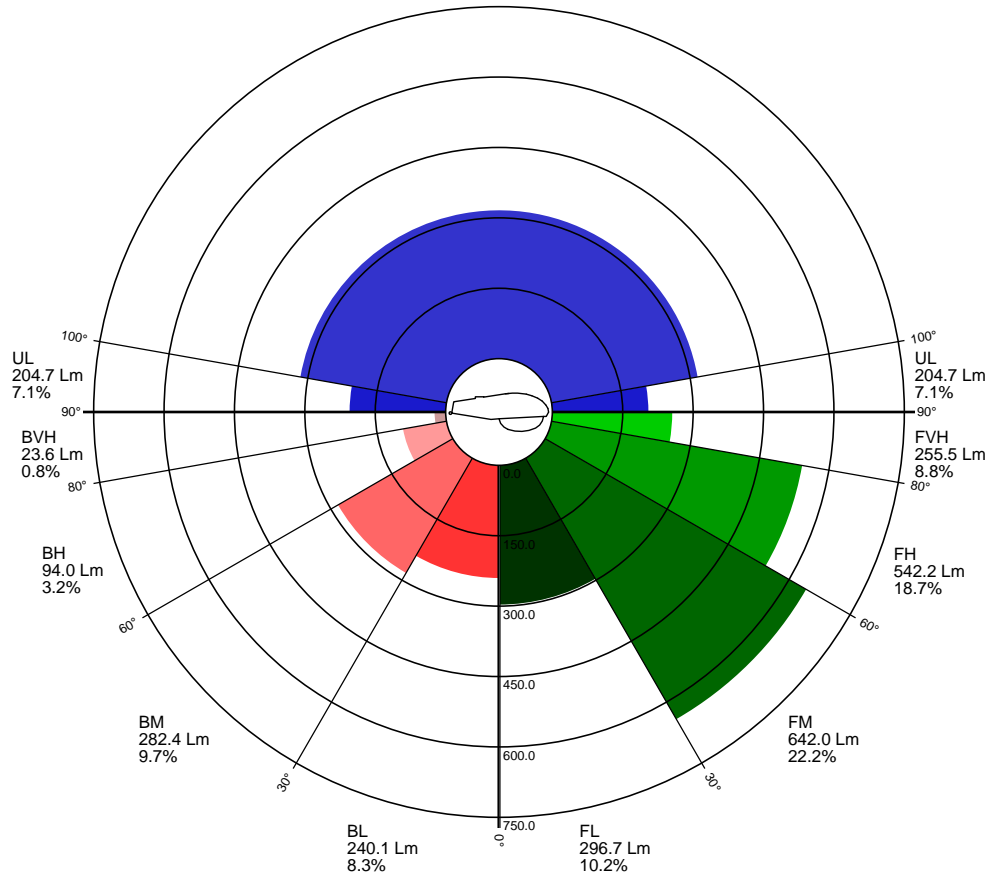
PAGE: 5 OF 9
 DATE SAMPLE TESTED: 03/30/17

BUG Rating:				B1 U3 G3		
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		1736	59.9			
FL	(0° - 30°)	296.7	10.2			
FM	(30° - 60°)	642.0	22.2			
FH	(60° - 80°)	542.2	18.7			G0
FVH	(80° - 90°)	255.5	8.8			G3
Backward		640	22.1			
BL	(0° - 30°)	240.1	8.3	B1		
BM	(30° - 60°)	282.4	9.7	B1		
BH	(60° - 80°)	94.0	3.2	B0		G0
BVH	(80° - 90°)	23.6	0.8			G1
Upward		521	18.0			
UL	(90° - 100°)	204.7	7.1		U3	
UH	(100° - 180°)	316.0	10.9		U3	
Trapped Light		0	0.0			
Total Flux		2897	100.0			

Zonal Lumen Summary

(Linear scale)

UH
 316.0 Lm
 10.9%

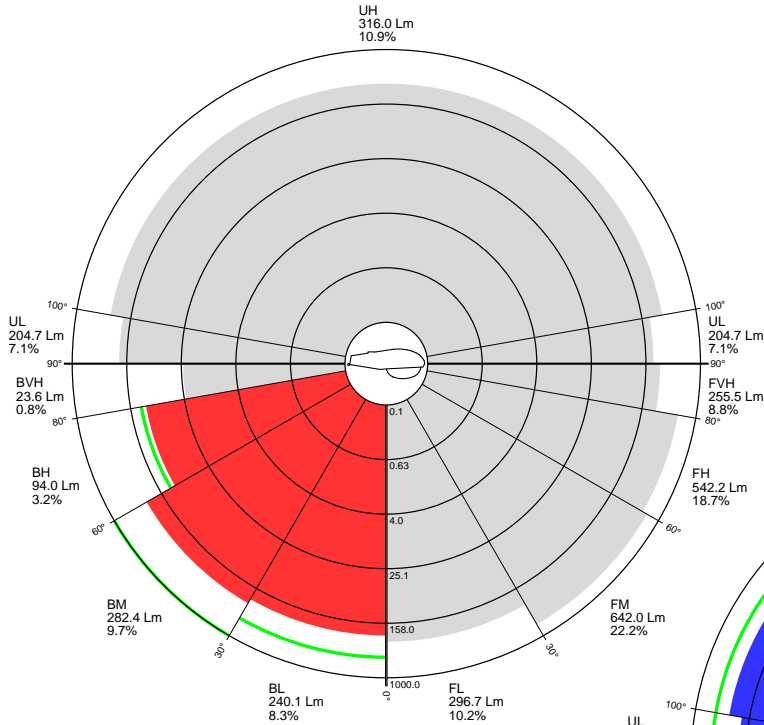


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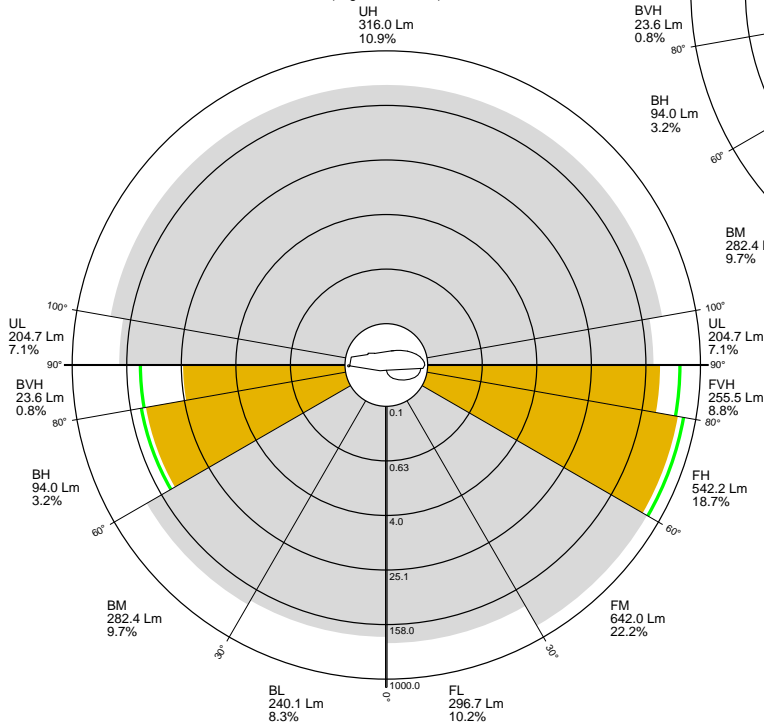
Backlight Rating Details

(Logarithmic scale)



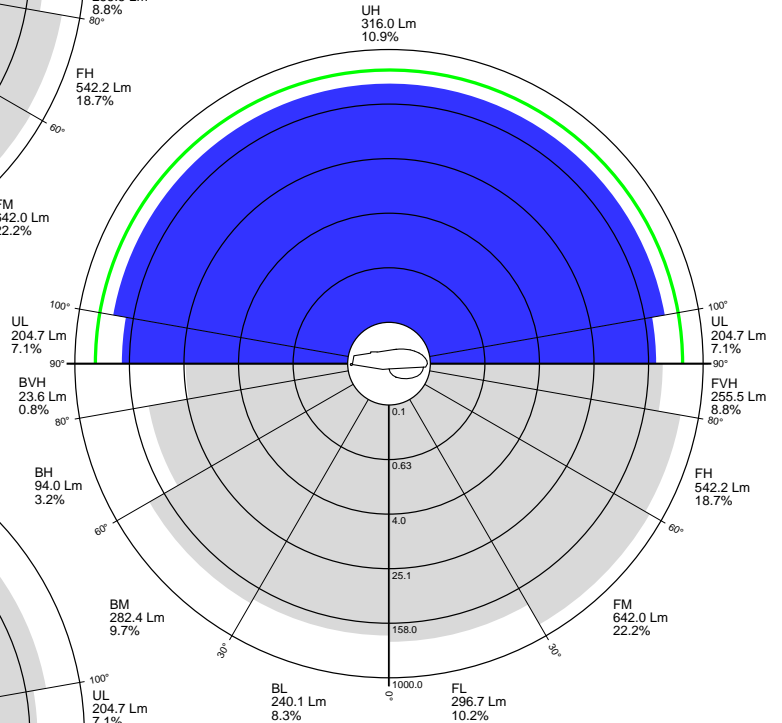
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



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CANDELA TABULATION

	STREET SIDE			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	0.	0.	0.	1.	1.	1.	2.	2.	2.
	165.0	0.	0.	1.	1.	1.	1.	2.	2.	2.
	155.0	33.	34.	30.	27.	19.	12.	7.	6.	5.
	145.0	56.	55.	52.	52.	53.	49.	42.	31.	25.
	135.0	54.	54.	55.	61.	68.	72.	73.	62.	45.
	125.0	112.	116.	112.	101.	85.	78.	76.	78.	70.
	115.0	284.	294.	285.	220.	169.	126.	101.	82.	67.
	105.0	412.	413.	434.	395.	347.	252.	158.	90.	64.
	95.0	555.	562.	566.	519.	457.	399.	299.	173.	81.
	90.0	677.	693.	684.	598.	505.	450.	366.	252.	126.
	87.5	711.	711.	717.	655.	536.	468.	388.	294.	162.
	85.0	763.	764.	764.	660.	549.	478.	399.	338.	197.
V	82.5	817.	822.	766.	693.	574.	491.	417.	382.	237.
E	80.0	801.	831.	788.	681.	579.	496.	428.	413.	279.
R	77.5	799.	812.	775.	697.	581.	494.	439.	431.	315.
T	75.0	763.	778.	783.	665.	564.	484.	457.	455.	354.
I	72.5	768.	770.	754.	664.	556.	480.	463.	488.	386.
C	70.0	771.	775.	731.	626.	524.	478.	519.	523.	427.
A	67.5	704.	700.	674.	607.	501.	485.	551.	485.	436.
L	65.0	673.	683.	644.	539.	486.	559.	575.	509.	452.
	62.5	596.	584.	565.	532.	528.	556.	573.	531.	475.
A	60.0	589.	581.	557.	553.	555.	582.	576.	535.	449.
N	57.5	588.	586.	615.	574.	623.	574.	581.	552.	439.
G	55.0	566.	560.	587.	622.	557.	542.	564.	548.	437.
L	52.5	631.	630.	649.	576.	606.	556.	572.	561.	438.
E	50.0	616.	614.	606.	625.	542.	535.	534.	522.	443.
	47.5	649.	637.	638.	575.	625.	579.	609.	476.	455.
	45.0	606.	603.	608.	635.	575.	554.	536.	460.	475.
	42.5	645.	631.	648.	602.	635.	587.	552.	466.	498.
	40.0	620.	610.	624.	669.	571.	553.	489.	488.	526.
	37.5	655.	636.	663.	608.	655.	547.	481.	511.	540.
	35.0	623.	611.	628.	687.	560.	531.	508.	552.	580.
	30.0	575.	571.	581.	606.	546.	540.	597.	622.	628.
	25.0	568.	565.	580.	573.	600.	637.	678.	699.	702.
	20.0	673.	672.	671.	689.	699.	734.	748.	762.	745.
	15.0	762.	760.	757.	768.	780.	802.	785.	797.	806.
	10.0	824.	815.	805.	787.	810.	836.	829.	844.	810.
	5.0<<	869.	869.	870.	852.	831.	799.	803.	816.	810.
	0.0	826.	826.	826.	826.	826.	826.	826.	826.	826.

||
 PLANE OF MAXIMUM CANDELA

—
 CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB03129
 ISSUE DATE: 03/30/17
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 8 OF 9
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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	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
175.0	2.	2.	2.	2.	1.	1.	1.	1.	0.	0.	0.
165.0	2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	1.
155.0	3.	3.	2.	2.	2.	1.	1.	1.	1.	1.	1.
145.0	14.	11.	8.	7.	5.	3.	1.	1.	1.	1.	1.
135.0	22.	19.	14.	12.	10.	6.	3.	1.	1.	1.	1.
125.0	35.	29.	23.	19.	15.	10.	5.	2.	1.	1.	1.
115.0	44.	38.	31.	26.	20.	14.	9.	4.	2.	2.	2.
105.0	44.	43.	40.	33.	27.	20.	13.	6.	3.	3.	3.
95.0	41.	43.	45.	44.	42.	35.	22.	10.	4.	4.	4.
90.0	43.	42.	47.	53.	56.	48.	31.	13.	4.	4.	4.
87.5	49.	45.	49.	58.	62.	54.	35.	15.	5.	4.	4.
85.0	58.	50.	53.	62.	71.	63.	42.	20.	9.	5.	6.
V 82.5	70.	58.	58.	65.	78.	70.	53.	30.	18.	13.	13.
E 80.0	89.	68.	62.	69.	83.	75.	63.	41.	30.	26.	26.
R 77.5	120.	84.	67.	74.	82.	80.	66.	55.	40.	38.	38.
T 75.0	155.	103.	72.	80.	82.	90.	71.	66.	54.	46.	46.
I 72.5	198.	132.	82.	84.	82.	92.	75.	64.	70.	59.	57.
C 70.0	230.	164.	95.	88.	84.	88.	87.	67.	67.	79.	81.
A 67.5	265.	196.	116.	96.	90.	83.	92.	73.	64.	63.	61.
L 65.0	288.	231.	144.	107.	95.	81.	85.	86.	65.	55.	54.
62.5	317.	260.	176.	119.	103.	84.	78.	90.	83.	68.	67.
A 60.0	334.	298.	210.	141.	116.	87.	76.	81.	92.	90.	89.
N 57.5	362.	322.	248.	169.	124.	94.	77.	71.	79.	87.	87.
G 55.0	382.	362.	284.	200.	138.	108.	82.	68.	65.	68.	68.
L 52.5	402.	385.	324.	233.	160.	123.	97.	74.	66.	60.	60.
E 50.0	432.	409.	360.	271.	189.	143.	115.	89.	73.	65.	64.
47.5	453.	436.	388.	310.	221.	167.	137.	106.	90.	80.	79.
45.0	468.	457.	407.	351.	264.	200.	162.	130.	111.	98.	95.
42.5	491.	471.	439.	381.	314.	240.	190.	156.	136.	119.	117.
40.0	510.	493.	458.	407.	354.	299.	227.	184.	162.	147.	144.
37.5	528.	518.	484.	431.	389.	349.	284.	230.	187.	176.	174.
35.0	559.	543.	508.	455.	411.	387.	337.	308.	231.	205.	205.
30.0	625.	600.	549.	515.	468.	450.	417.	378.	386.	364.	362.
25.0	687.	674.	609.	566.	522.	475.	478.	432.	418.	390.	390.
20.0	729.	732.	667.	624.	569.	540.	484.	495.	489.	441.	441.
15.0	791.	795.	732.	708.	654.	579.	578.	536.	523.	508.	509.
10.0	815.	811.	771.	716.	735.	698.	692.	651.	613.	595.	599.
5.0<<	828.	826.	813.	781.	746.	724.	720.	731.	740.	743.	742.
0.0	826.	826.	826.	826.	826.	826.	826.	826.	826.	826.	826.

CONE OF MAXIMUM CANDELA

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 PREPARED FOR: RAB LIGHTING INC.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	19
5- 10	56
10- 15	86
15- 20	111
20- 25	126
25- 30	139
30- 35	148
35- 40	152
40- 45	155
45- 50	156
50- 55	156
55- 60	158
60- 65	157
65- 70	160
70- 75	162
75- 80	157
80- 85	148
85- 90	131
90- 95	112
95-100	93
100-105	78
105-110	64
110-115	50
115-120	35
120-125	25
125-130	19
130-135	14
135-140	11
140-145	9
145-150	6
150-155	3
155-160	1
160-165	0
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	75
0- 20	272
0- 30	537
0- 40	837
0- 50	1148
0- 60	1461
0- 70	1778
0- 80	2097
0- 90	2376
0-100	2581
0-110	2723
0-120	2808
0-130	2852
0-140	2878
0-150	2892
0-160	2897
0-170	2897
0-180	2897

REPORT NUMBER: RAB03130
DATE: 3/31/2017
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: WP1LED30Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: COMPACT WALLPACK WITH VANDAL RESISTANT PRISMATIC POLYCARBONATE REFRACTOR.

LAMP: SEVENTY TWO WHITE LIGHT EMITTING DIODES (LEDs).

DRIVER: RD-LT40-A0700-60PF

OBJECT OF TEST: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT THE RATED INPUT VOLTAGES (480.0 AND 347.0 VAC, 60Hz) TO THE TEST SAMPLE.

INSTRUMENTS:	GWINSTEK PROGRAMMABLE AC POWER SOURCE APS-7100	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/01/18
	OCEAN OPTICS QE65PRO Spectroradiometer	03/07/18
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	03/07/18

OBJECT OF TEST: Measure the Absolute Flux in lumens*, Total Radiant Flux*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRIa,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 (347.0 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: RAB03130
 DATE: 3/31/2017
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: WP1LED30Y/480 (ALSO APPLIES TO 347/RCL) (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	2897 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4276
Chromaticity Ordinate y	0.3941
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2488
Chromaticity Ordinate v'	0.5160
Correlated Color Temp CCT (K)	3080
ANSI C78.377-2008 Duv	-0.003
Total Radiant Flux (milliWatts)	9136 *
ELECTRICAL	
Input Voltage (Volts AC)	480.0
Input Current (Amps AC)	0.064
Input Power (Watts)	28.3
Input Power Factor (%)	92.3
Input Current THD (%)	6.9
Input Voltage THD (%)	0.2
EFFICACY (Lumens/Watt)	
	102.4
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	347.0
Input Current (Amps AC)	0.081
Input Power (Watts)	28.1
Input Power Factor (%)	99.3
Input Current THD (%)	10.2
Input Voltage THD (%)	0.2
Off-State Power (Watts)	
	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	84
R1 Light greyish red	83
R2 Dark greyish yellow	92
R3 Strong yellowish green	96
R4 Moderate yellowish green	82
R5 Light bluish green	83
R6 Light blue	90
R7 Light violet	84
R8 Light reddish purple	63
R9 Strong red	18
R10 Strong yellow	81
R11 Strong green	81
R12 Strong blue	74
R13 Light yellowish pink (skin)	85
R14 Moderate olive green (leaf)	99

*NOTE:

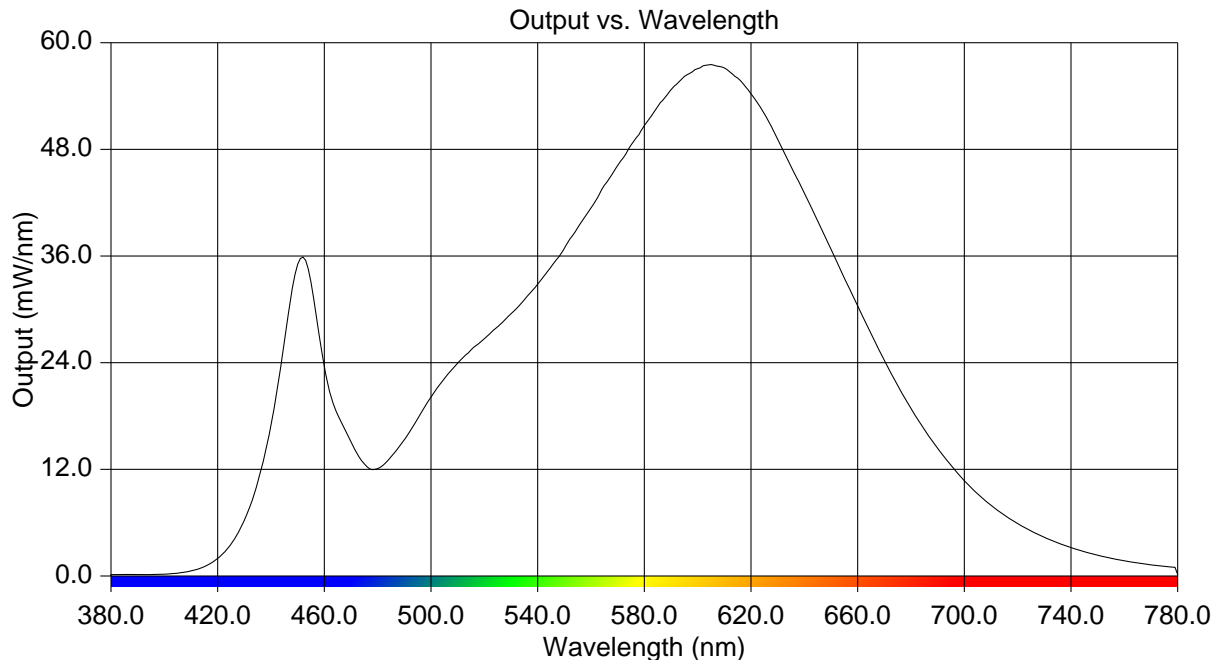
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.143	515	25.430	650	36.740
385	0.156	520	26.706	655	33.512
390	0.160	525	28.050	660	30.365
395	0.173	530	29.510	665	27.244
400	0.210	535	31.071	670	24.258
405	0.314	540	32.828	675	21.452
410	0.554	545	34.770	680	18.817
415	1.051	550	36.816	685	16.502
420	1.974	555	39.179	690	14.327
425	3.584	560	41.376	695	12.460
430	6.281	565	43.957	700	10.770
435	10.503	570	46.192	705	9.256
440	16.910	575	48.478	710	7.939
445	26.310	580	50.679	715	6.863
450	35.065	585	52.804	720	5.902
455	33.042	590	54.703	725	5.064
460	23.555	595	56.200	730	4.335
465	18.146	600	57.073	735	3.712
470	15.079	605	57.540	740	3.170
475	12.617	610	57.158	745	2.724
480	12.083	615	56.018	750	2.344
485	13.408	620	54.239	755	2.003
490	15.315	625	52.058	760	1.724
495	17.694	630	49.137	765	1.477
500	20.146	635	46.074	770	1.275
505	22.197	640	43.093	775	1.093
510	23.917	645	39.930	780	0.165



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CIE Chromaticity Diagram

