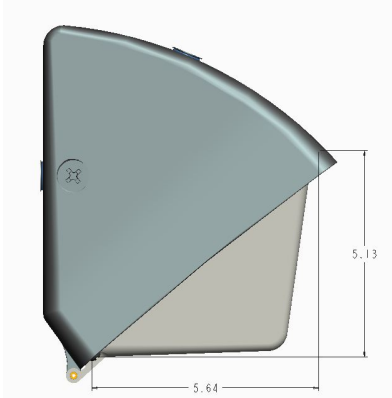
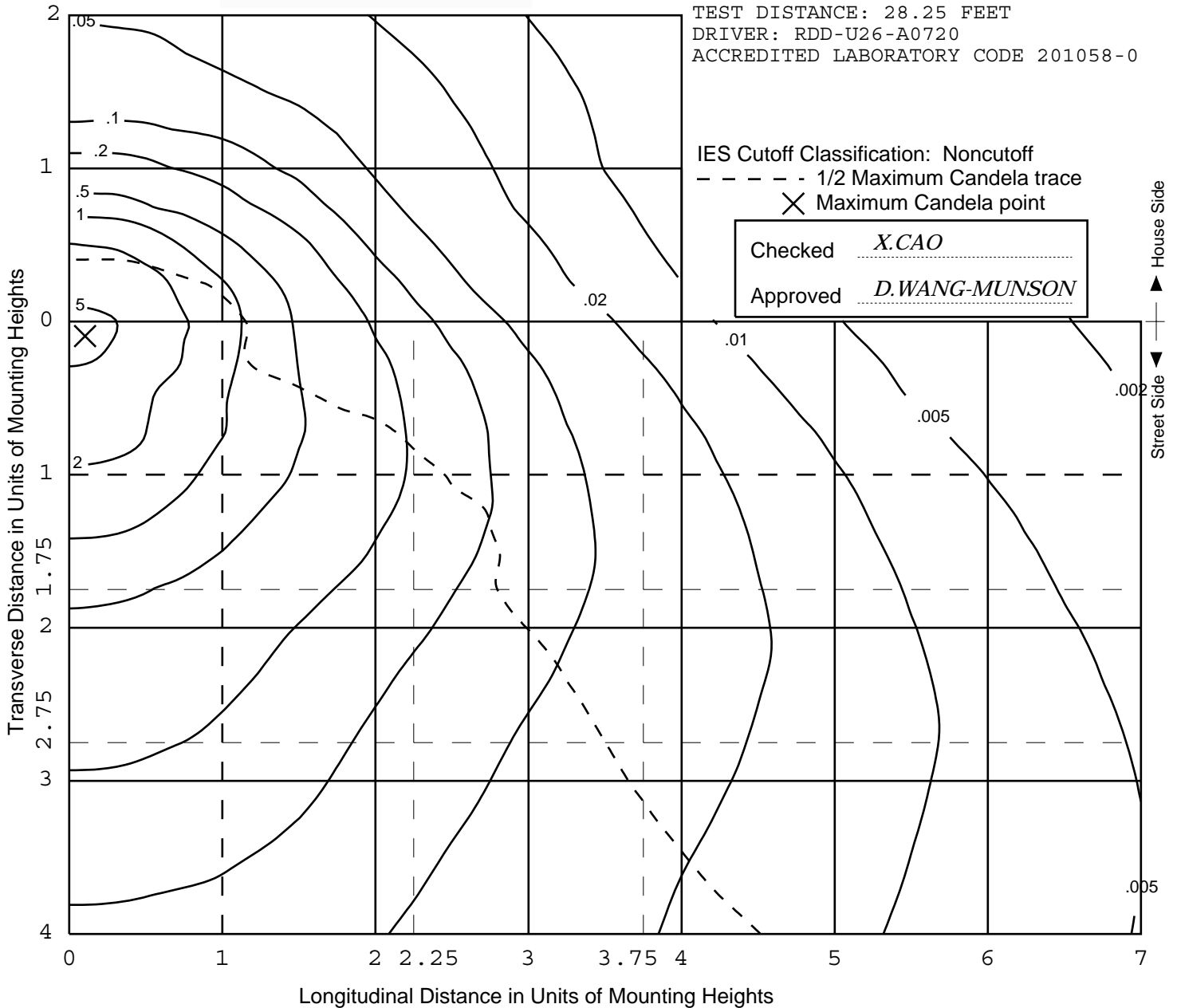


## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 12 foot mounting height.

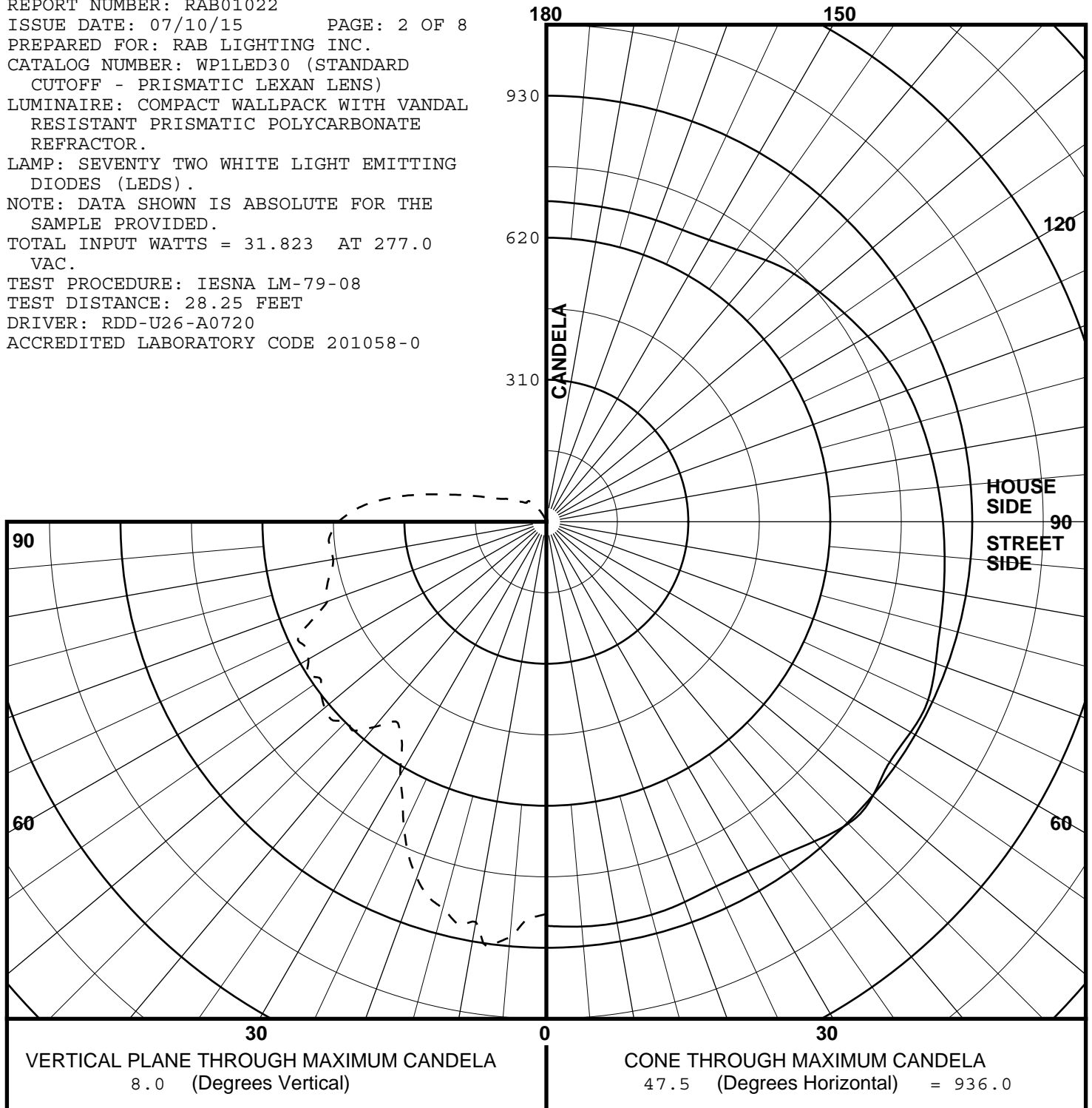


REPORT NUMBER: RAB01022  
 ISSUE DATE: 07/10/15 PAGE: 1 OF 8  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP1LED30 (STANDARD  
 CUTOFF - PRISMATIC LEXAN LENS)  
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL  
 RESISTANT PRISMATIC POLYCARBONATE  
 REFRACTOR.  
 LAMP: SEVENTY TWO WHITE LIGHT EMITTING  
 DIODES (LEDS).  
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
 SAMPLE PROVIDED.  
 TOTAL INPUT WATTS = 31.823 AT 277.0  
 VAC.  
 TEST PROCEDURE: IESNA LM-79-08  
 TEST DISTANCE: 28.25 FEET  
 DRIVER: RDD-U26-A0720  
 ACCREDITED LABORATORY CODE 201058-0



MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

REPORT NUMBER: RAB01022  
 ISSUE DATE: 07/10/15      PAGE: 2 OF 8  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP1LED30 (STANDARD  
 CUTOFF - PRISMATIC LEXAN LENS)  
 LUMINAIRE: COMPACT WALLPACK WITH VANDAL  
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 DIODES (LEDS).  
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
 SAMPLE PROVIDED.  
 TOTAL INPUT WATTS = 31.823 AT 277.0  
 VAC.  
 TEST PROCEDURE: IESNA LM-79-08  
 TEST DISTANCE: 28.25 FEET  
 DRIVER: RDD-U26-A0720  
 ACCREDITED LABORATORY CODE 201058-0



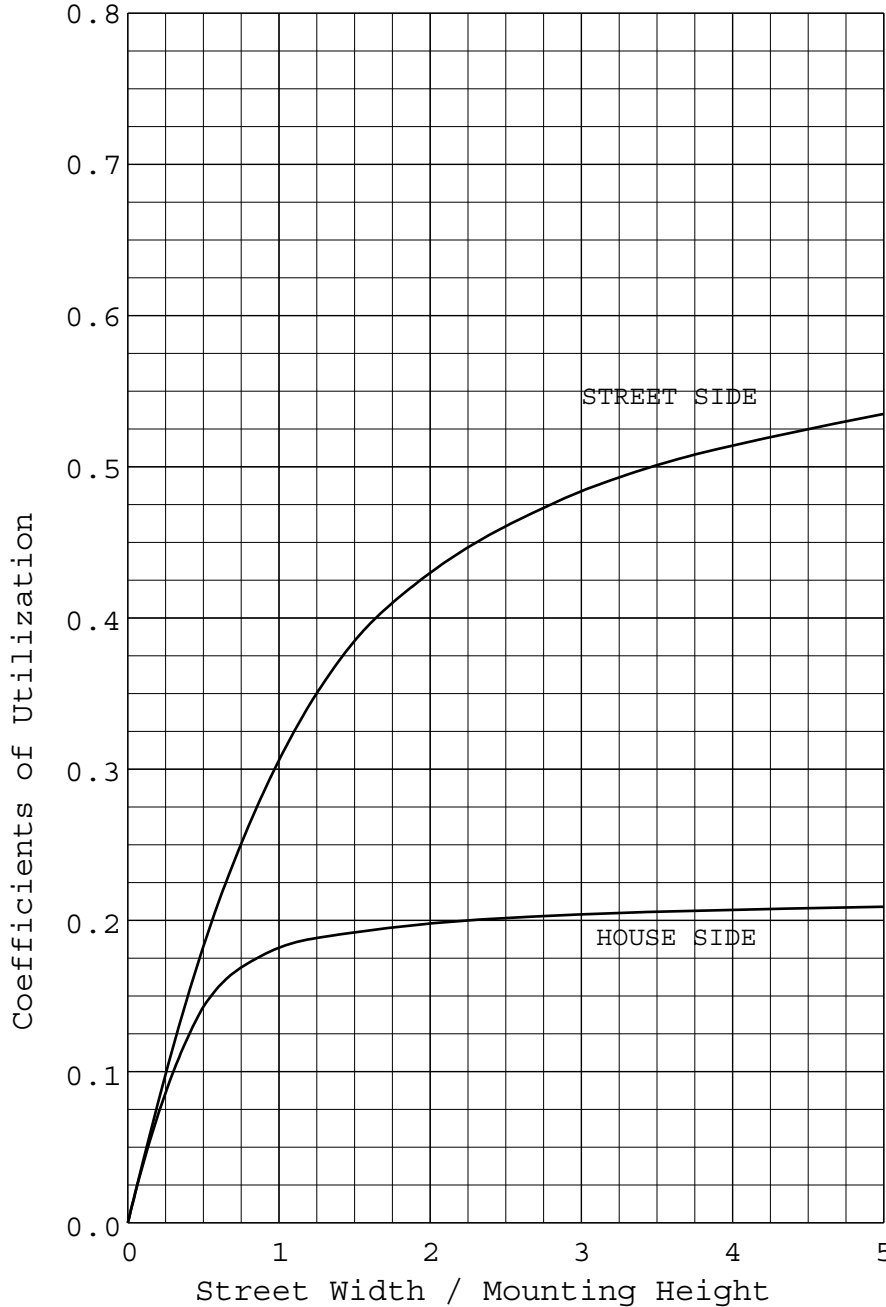
VERTICAL PLANE THROUGH MAXIMUM CANDELA  
 8.0 (Degrees Vertical)

CONE THROUGH MAXIMUM CANDELA  
 47.5 (Degrees Horizontal) = 936.0

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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1877.	61.3
DOWNWARD HOUSE SIDE	651.	21.3
DOWNWARD TOTAL	2528.	82.6
UPWARD STREET SIDE	490.	16.0
UPWARD HOUSE SIDE	42.	1.4
UPWARD TOTAL	532.	17.4
TOTAL FLUX	3060.	100.0
TOTAL INPUT WATTS = 31.8		
EFFICACY = 96.2 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: RAB01022  
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 PREPARED FOR: RAB LIGHTING INC.

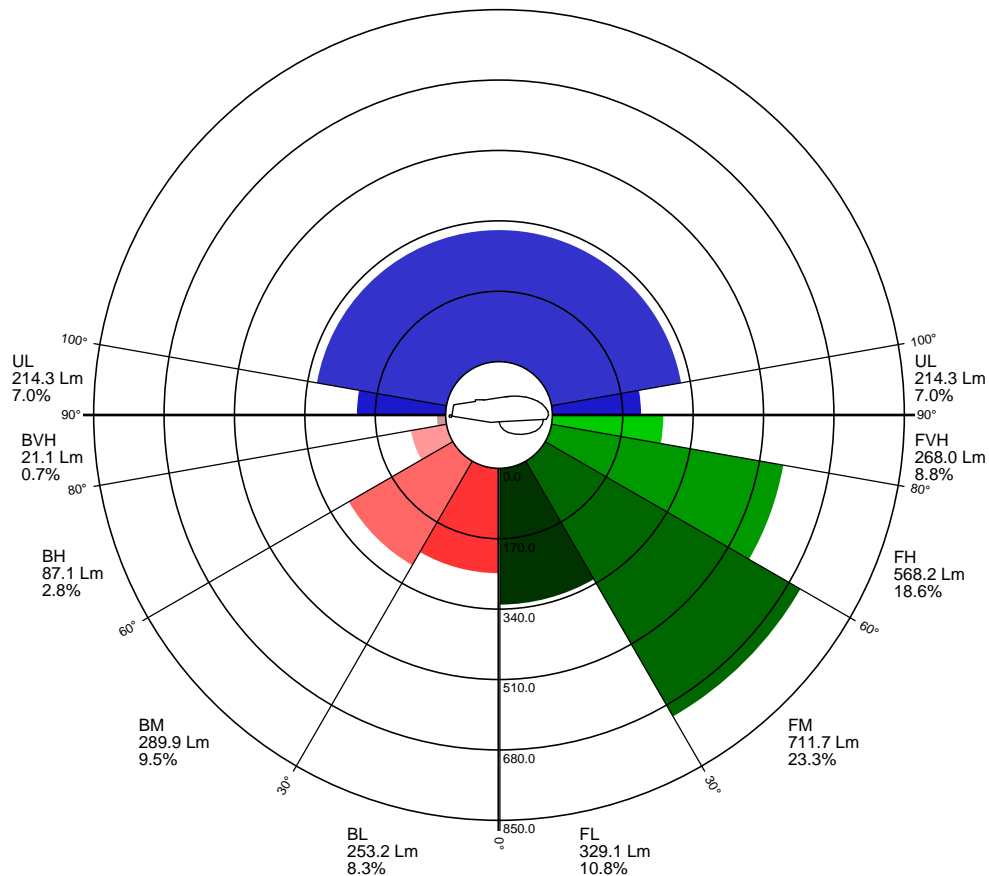
PAGE: 4 OF 8

BUG Rating:			B1	U3	G3
Zonal Summary	Lumens	% of Fixture	Zone Ratings		
			B	U	G
Forward	1877	61.3			
FL (0° - 30°)	329.1	10.8			
FM (30° - 60°)	711.7	23.3			
FH (60° - 80°)	568.2	18.6			G0
FVH (80° - 90°)	268.0	8.8			G3
Backward	651	21.3			
BL (0° - 30°)	253.2	8.3	B1		
BM (30° - 60°)	289.9	9.5	B1		
BH (60° - 80°)	87.1	2.8	B0		G0
BVH (80° - 90°)	21.1	0.7			G1
Upward	532	17.4			
UL (90° - 100°)	214.3	7.0		U3	
UH (100° - 180°)	317.7	10.4		U3	
Trapped Light	0	0.0			
Total Flux	3060	100.0			

### Zonal Lumen Summary

(Linear scale)

UH  
317.7 Lm  
10.4%

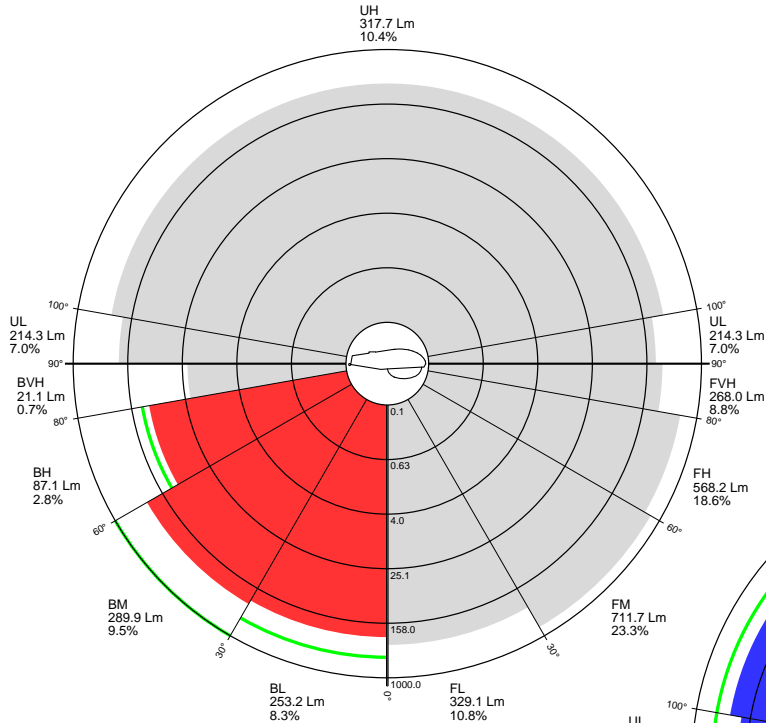


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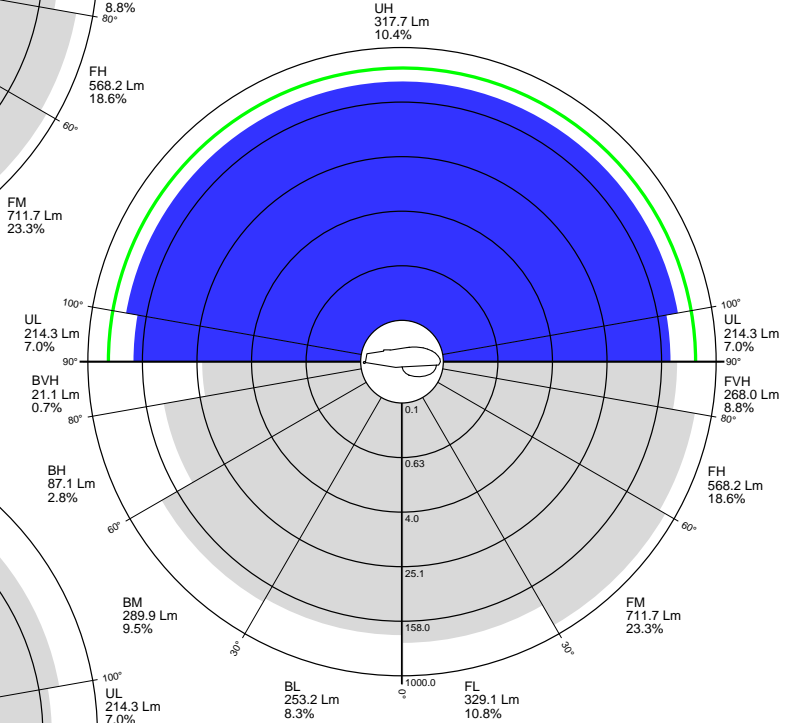
### Backlight Rating Details

(Logarithmic scale)



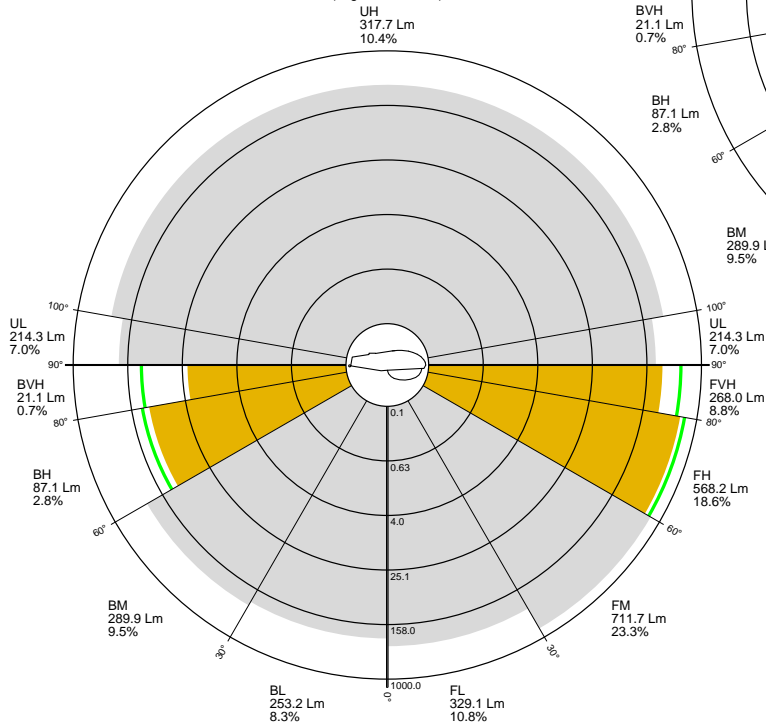
### Uplight Rating Details

(Logarithmic scale)



### Glare Rating Details

(Logarithmic scale)



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 PREPARED FOR: RAB LIGHTING INC.

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CANDELA TABULATION

STREET SIDE	LATERAL ANGLE										
	0.0	5.0	15.0	25.0	35.0	45.0	47.5	55.0	65.0	75.0	85.0
	180.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
	175.0	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.
	165.0	0.	0.	0.	1.	1.	1.	1.	2.	2.	2.
	155.0	30.	30.	29.	25.	20.	13.	12.	8.	8.	7.
	145.0	57.	57.	56.	53.	51.	43.	41.	35.	26.	23.
	135.0	52.	51.	52.	52.	56.	59.	60.	63.	58.	44.
	125.0	131.	129.	126.	113.	96.	79.	78.	74.	67.	60.
	115.0	301.	295.	284.	233.	171.	127.	120.	102.	82.	64.
	105.0	429.	430.	447.	418.	357.	255.	230.	161.	95.	67.
	95.0	599.	601.	617.	559.	500.	422.	402.	293.	154.	87.
	90.0	737.	733.	731.	654.	556.	477.	454.	357.	226.	112.
	87.5	801.	804.	803.	698.	572.	496.	468.	384.	268.	140.
	85.0	847.	847.	832.	734.	602.	497.	477.	400.	310.	170.
	82.5	874.	877.	853.	743.	611.	498.	474.	418.	347.	205.
V	80.0	881.	877.	851.	756.	617.	503.	473.	437.	384.	241.
E	77.5	876.	880.	863.	747.	600.	508.	480.	458.	411.	282.
R	75.0	877.	876.	839.	744.	592.	507.	493.	471.	436.	316.
T	72.5	856.	854.	828.	710.	570.	505.	504.	473.	466.	353.
I	70.0	843.	842.	780.	675.	554.	509.	509.	529.	484.	399.
C	67.5	769.	763.	730.	640.	549.	541.	550.	538.	514.	415.
A	65.0	720.	722.	682.	612.	559.	590.	598.	588.	548.	437.
L	62.5	670.	668.	649.	611.	614.	613.	593.	582.	527.	444.
	60.0	673.	665.	677.	664.	635.	591.	600.	588.	555.	446.
A	57.5	697.	703.	734.	718.	655.	605.	619.	604.	542.	457.
N	55.0	756.	752.	750.	722.	654.	594.	601.	593.	551.	452.
G	52.5	765.	767.	763.	704.	684.	606.	620.	591.	525.	453.
L	50.0	744.	743.	744.	706.	652.	610.	632.	581.	486.	463.
E	47.5	758.	763.	746.	681.	663.	609.	638.	584.	493.	481.
	45.0	722.	723.	721.	691.	668.	616.	616.	561.	491.	509.
	42.5	733.	738.	729.	703.	699.	632.	619.	526.	500.	531.
	40.0	736.	736.	739.	750.	687.	602.	585.	521.	525.	565.
	37.5	774.	763.	759.	731.	690.	578.	550.	529.	562.	588.
	35.0	736.	741.	739.	735.	624.	559.	558.	572.	604.	625.
	30.0	654.	648.	650.	600.	592.	622.	638.	661.	693.	704.
	25.0	614.	625.	648.	656.	696.	722.	736.	755.	782.	782.
	20.0	729.	735.	750.	776.	800.	820.	827.	836.	833.	825.
	15.0	849.	854.	854.	867.	870.	877.	874.	883.	880.	896.
	10.0	878.	881.	889.	889.	909.	890.	887.	914.	900.	903.
	8.0<<	882.	887.	888.	878.	891.	932.	936.	915.	920.	890.
	5.0	899.	904.	905.	905.	907.	909.	910.	907.	880.	864.
	0.0	856.	856.	856.	856.	856.	856.	856.	856.	856.	856.

||  
 PLANE OF MAXIMUM CANDELA

||  
 CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB01022  
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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.	2.	1.	1.	1.	0.	0.	0.
165.0	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.	0.
155.0	5.	4.	3.	2.	2.	2.	1.	1.	1.	1.	1.
145.0	13.	10.	7.	6.	5.	3.	1.	1.	1.	1.	1.
135.0	27.	21.	15.	11.	9.	6.	3.	1.	1.	1.	1.
125.0	37.	31.	22.	19.	14.	9.	6.	2.	1.	1.	1.
115.0	41.	35.	28.	24.	19.	13.	8.	4.	2.	2.	2.
105.0	43.	38.	33.	29.	24.	18.	12.	6.	3.	3.	3.
95.0	47.	44.	40.	37.	36.	30.	19.	9.	4.	4.	4.
90.0	51.	47.	45.	44.	45.	39.	25.	11.	5.	4.	4.
87.5	58.	50.	48.	49.	50.	44.	28.	13.	5.	4.	4.
85.0	65.	56.	54.	54.	58.	50.	33.	15.	6.	4.	4.
82.5	78.	64.	59.	59.	67.	60.	41.	24.	12.	9.	9.
V 80.0	90.	74.	63.	66.	70.	69.	49.	35.	23.	19.	18.
E 77.5	107.	86.	68.	73.	71.	78.	55.	44.	35.	30.	29.
R 75.0	135.	98.	75.	78.	73.	78.	68.	49.	46.	45.	43.
T 72.5	170.	114.	83.	81.	77.	75.	80.	55.	50.	54.	57.
I 70.0	204.	144.	95.	86.	82.	75.	80.	70.	53.	49.	49.
C 67.5	240.	177.	110.	93.	88.	78.	73.	80.	61.	46.	45.
A 65.0	273.	213.	132.	101.	94.	81.	70.	77.	78.	67.	65.
L 62.5	305.	248.	164.	118.	101.	85.	72.	71.	80.	82.	84.
60.0	330.	285.	205.	139.	106.	90.	74.	67.	67.	69.	71.
A 57.5	365.	327.	247.	166.	114.	98.	76.	66.	59.	55.	55.
N 55.0	396.	369.	292.	196.	129.	109.	86.	70.	62.	56.	56.
G 52.5	424.	412.	338.	232.	151.	118.	101.	81.	68.	61.	60.
L 50.0	454.	443.	383.	272.	181.	132.	115.	98.	81.	71.	70.
E 47.5	493.	473.	418.	317.	218.	159.	127.	116.	100.	90.	88.
45.0	515.	506.	451.	360.	260.	193.	149.	130.	118.	109.	106.
42.5	535.	528.	473.	403.	313.	234.	181.	151.	133.	126.	123.
40.0	553.	541.	499.	430.	364.	290.	222.	183.	150.	141.	139.
37.5	582.	570.	524.	464.	403.	348.	277.	227.	183.	170.	166.
35.0	613.	596.	554.	487.	434.	390.	341.	286.	229.	210.	205.
30.0	686.	655.	605.	547.	491.	446.	420.	400.	371.	363.	358.
25.0	760.	725.	661.	594.	540.	514.	478.	437.	434.	432.	432.
20.0	806.	782.	724.	644.	613.	556.	533.	496.	489.	476.	473.
15.0	855.	846.	806.	730.	670.	622.	588.	561.	550.	545.	545.
10.0	856.	848.	828.	792.	752.	717.	708.	679.	652.	636.	640.
8.0<<	866.	859.	846.	826.	794.	765.	725.	703.	699.	698.	700.
5.0	865.	862.	858.	845.	828.	809.	799.	785.	781.	774.	770.
0.0	856.	856.	856.	856.	856.	856.	856.	856.	856.	856.	856.

CONE OF MAXIMUM CANDELA

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PREPARED FOR: RAB LIGHTING INC.

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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	20
5- 10	60
10- 15	93
15- 20	120
20- 25	138
25- 30	150
30- 35	159
35- 40	166
40- 45	167
45- 50	169
50- 55	171
55- 60	170
60- 65	165
65- 70	164
70- 75	165
75- 80	161
80- 85	152
85- 90	137
90- 95	117
95-100	97
100-105	80
105-110	65
110-115	50
115-120	36
120-125	26
125-130	19
130-135	14
135-140	10
140-145	8
145-150	5
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	80
0- 20	294
0- 30	582
0- 40	907
0- 50	1244
0- 60	1584
0- 70	1914
0- 80	2239
0- 90	2528
0-100	2743
0-110	2887
0-120	2973
0-130	3018
0-140	3042
0-150	3055
0-160	3060
0-170	3060
0-180	3060



REPORT NUMBER: RAB01025  
DATE: 7/13/2015  
PREPARED FOR: RAB LIGHTING INC.  
CATALOG NUMBER: WP1LED30 (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: RDD-U26-A0720

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:	CHROMA PROGRAMMABLE AC POWER SOURCE MODEL 61602	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/9/16
	OCEAN OPTICS QE65PRO Spectroradiometer	7/9/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	7/9/16

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

REPORT NUMBER: RAB01025  
 DATE: 7/13/2015  
 PREPARED FOR: RAB LIGHTING INC.  
 CATALOG NUMBER: WP1LED30 (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

RESULTS:

<b>PHOTOMETRIC</b>	
Total Integrated Flux (lumens)	3060 *
<b>SPECTRORADIOMETRIC</b>	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3399
Chromaticity Ordinate y	0.3496
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2086
Chromaticity Ordinate v'	0.4829
Correlated Color Temp CCT (K)	5200
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	9682 *
<b>ELECTRICAL</b>	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.264
Input Power (Watts)	31.4
Input Power Factor (%)	99.1
Input Current THD (%)	8.3
Input Voltage THD (%)	0.2
<b>EFFICACY (Lumens/Watt)</b>	
	97.5
<b>ELECTRICAL AT MAX NONIMAL INPUT</b>	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.126
Input Power (Watts)	31.8
Input Power Factor (%)	91.1
Input Current THD (%)	19.7
Input Voltage THD (%)	0.2
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	83
R1 Light greyish red	82
R2 Dark greyish yellow	86
R3 Strong yellowish green	90
R4 Moderate yellowish green	84
R5 Light bluish green	83
R6 Light blue	82
R7 Light violet	86
R8 Light reddish purple	70
R9 Strong red	12
R10 Strong yellow	68
R11 Strong green	85
R12 Strong blue	67
R13 Light yellowish pink (skin)	82
R14 Moderate olive green (leaf)	94

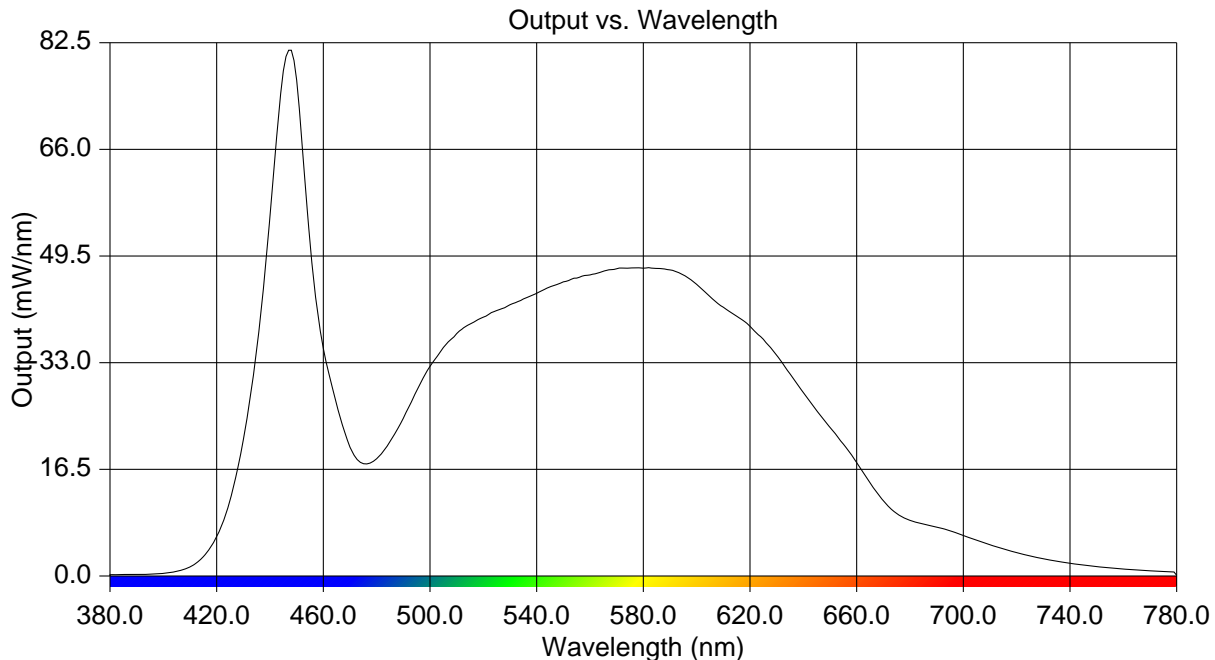
\*NOTE:

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: WP1LED30 (STANDARD CUTOFF - PRISMATIC LEXAN LENS)

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.195	515	38.941	650	23.008
385	0.210	520	40.039	655	20.410
390	0.236	525	41.061	660	17.539
395	0.285	530	41.962	665	14.448
400	0.406	535	42.852	670	11.617
405	0.708	540	43.726	675	9.676
410	1.400	545	44.721	680	8.615
415	2.988	550	45.500	685	8.029
420	6.069	555	46.078	690	7.542
425	11.678	560	46.570	695	6.991
430	21.072	565	47.121	700	6.299
435	35.073	570	47.526	705	5.534
440	55.669	575	47.636	710	4.815
445	78.132	580	47.614	715	4.177
450	76.708	585	47.567	720	3.615
455	51.639	590	47.349	725	3.107
460	35.200	595	46.613	730	2.669
465	26.491	600	45.087	735	2.294
470	19.919	605	43.273	740	1.960
475	17.356	610	41.577	745	1.696
480	18.153	615	40.190	750	1.456
485	20.795	620	38.631	755	1.247
490	24.402	625	36.622	760	1.084
495	28.681	630	34.150	765	0.925
500	32.426	635	31.276	770	0.801
505	35.364	640	28.379	775	0.696
510	37.492	645	25.563	780	0.105



REPORT NUMBER: RAB01025  
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## CIE Chromaticity Diagram

