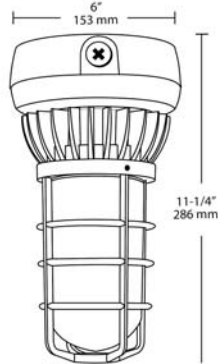


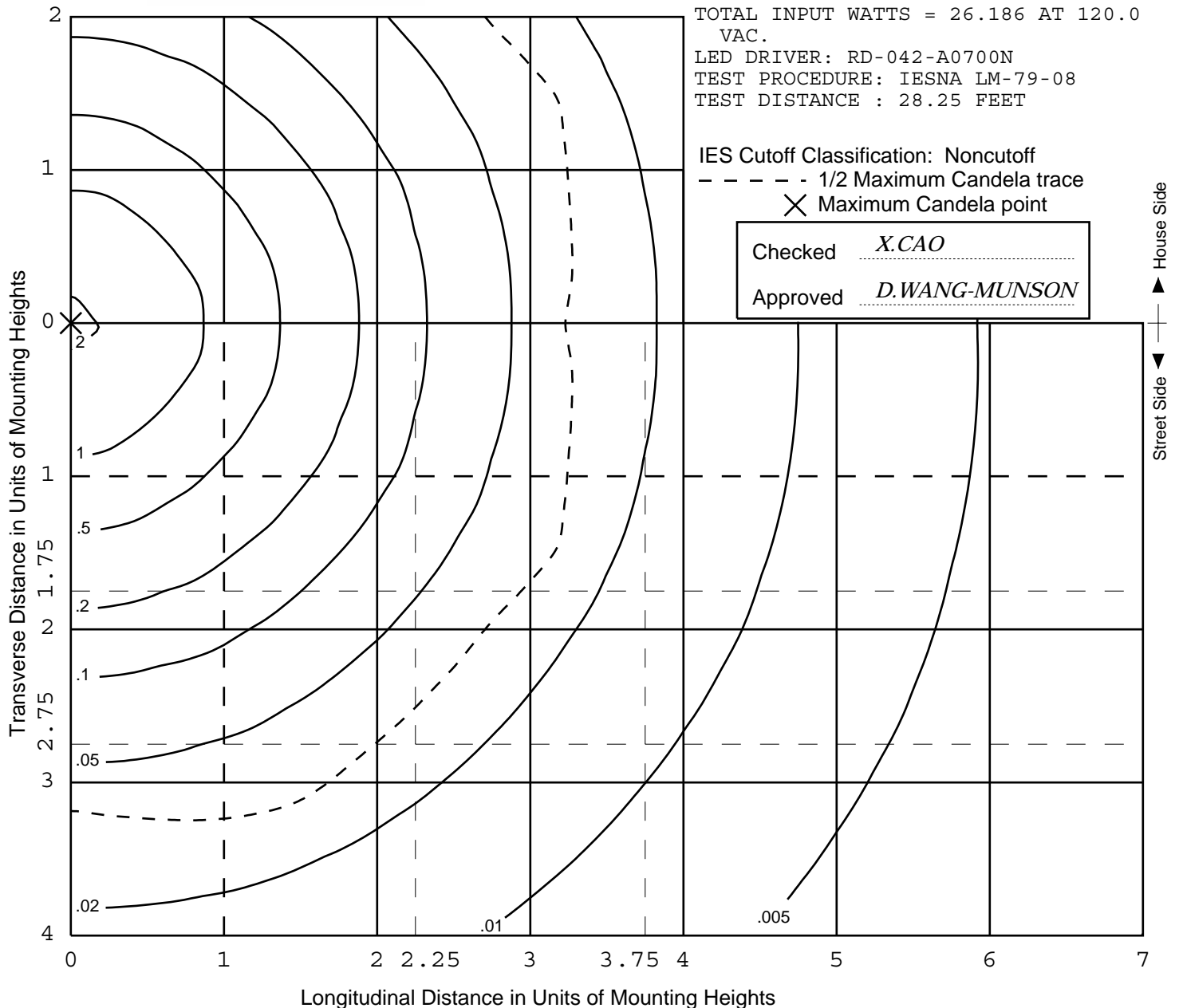
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 10 foot mounting height.



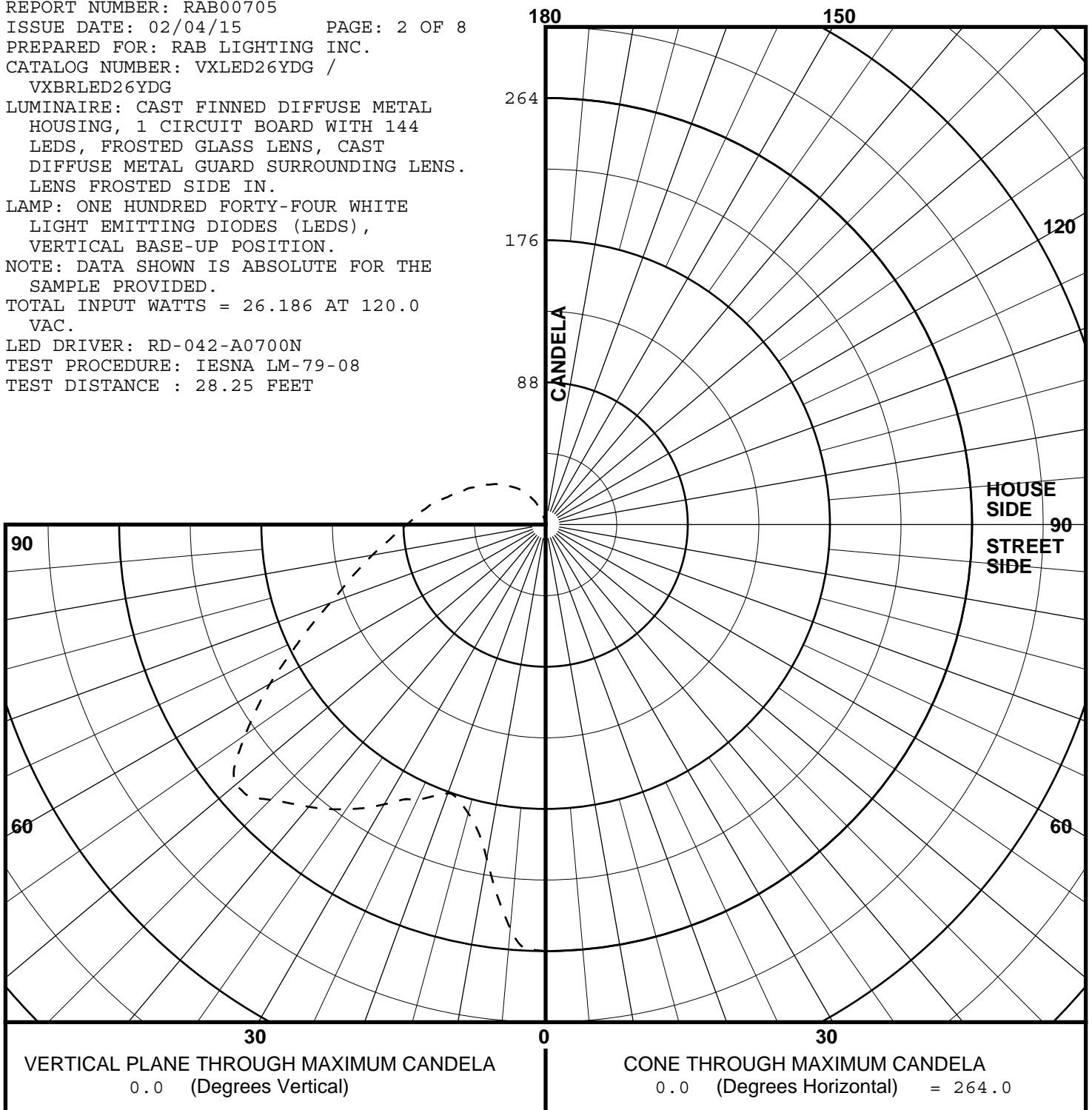
REPORT NUMBER: RAB00705
ISSUE DATE: 02/04/15 PAGE: 1 OF 8
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: VXLED26YDG /
VXBRLED26YDG
LUMINAIRE: CAST FINNED DIFFUSE METAL
HOUSING, 1 CIRCUIT BOARD WITH 144
LEDS, FROSTED GLASS LENS, CAST
DIFFUSE METAL GUARD SURROUNDING LENS.
LENS FROSTED SIDE IN.
LAMP: ONE HUNDRED FORTY-FOUR WHITE
LIGHT EMITTING DIODES (LEDS),
VERTICAL BASE-UP POSITION.
NOTE: DATA SHOWN IS ABSOLUTE FOR THE
SAMPLE PROVIDED.
TOTAL INPUT WATTS = 26.186 AT 120.0
VAC.
LED DRIVER: RD-042-A0700N
TEST PROCEDURE: IESNA LM-79-08
TEST DISTANCE : 28.25 FEET

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



MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

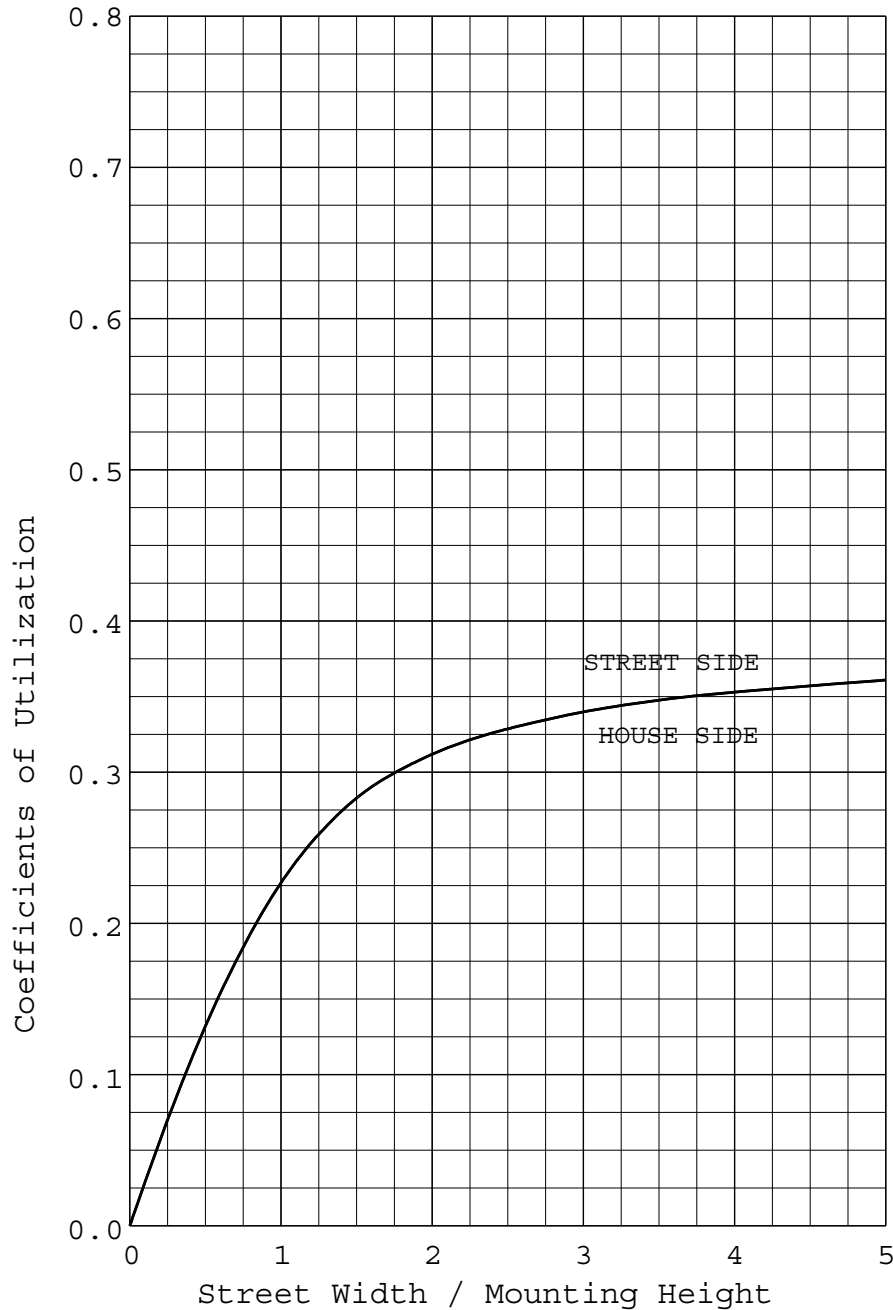
REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15 PAGE: 2 OF 8
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26YDG /
 VXBRLLED26YDG
 LUMINAIRE: CAST FINNED DIFFUSE METAL
 HOUSING, 1 CIRCUIT BOARD WITH 144
 LEDS, FROSTED GLASS LENS, CAST
 DIFFUSE METAL GUARD SURROUNDING LENS.
 LENS FROSTED SIDE IN.
 LAMP: ONE HUNDRED FORTY-FOUR WHITE
 LIGHT EMITTING DIODES (LEDS),
 VERTICAL BASE-UP POSITION.
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE
 SAMPLE PROVIDED.
 TOTAL INPUT WATTS = 26.186 AT 120.0
 VAC.
 LED DRIVER: RD-042-A0700N
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE : 28.25 FEET



REPORT NUMBER: RAB00705
ISSUE DATE: 02/04/15
PREPARED FOR: RAB LIGHTING INC.

PAGE: 3 OF 8

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	546.	38.9
DOWNWARD HOUSE SIDE	546.	38.9
DOWNWARD TOTAL	1091.	77.9
UPWARD STREET SIDE	155.	11.1
UPWARD HOUSE SIDE	155.	11.1
UPWARD TOTAL	310.	22.1
TOTAL FLUX	1401.	100.0
TOTAL INPUT WATTS = 26.2		
EFFICACY = 53.5 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.

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.

REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15
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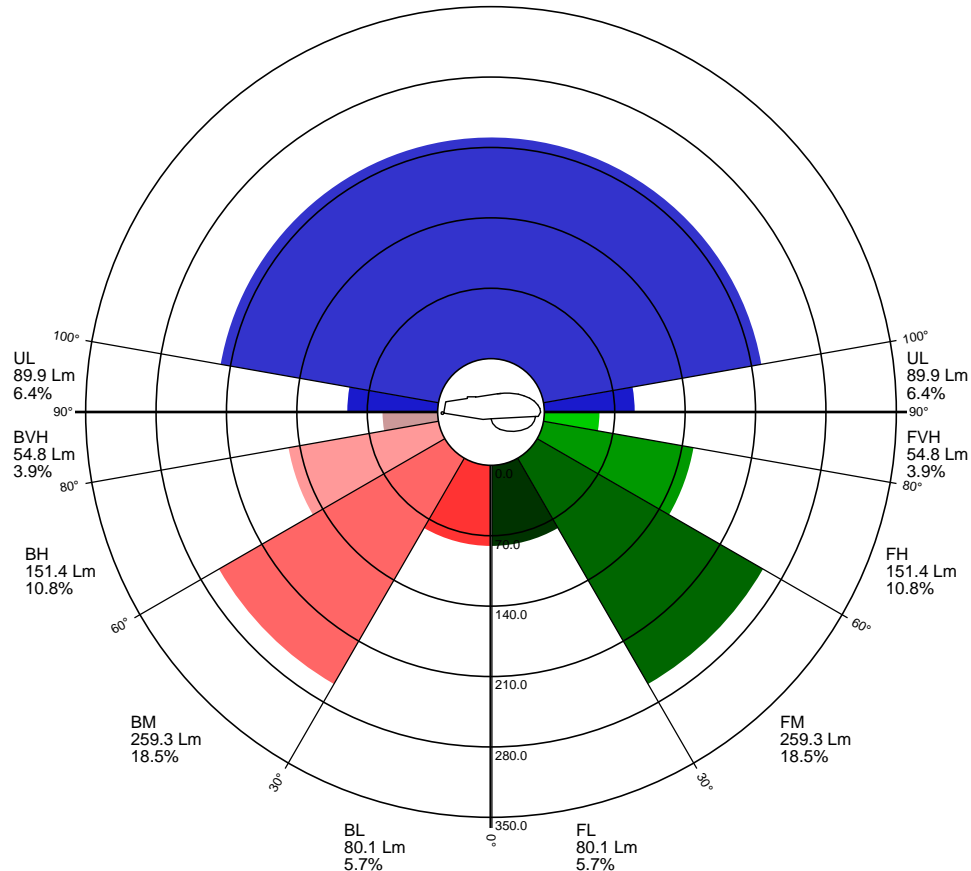
PAGE: 4 OF 8

BUG Rating:				B1	U3	G1
Zonal Summary				Zone Ratings		
		Lumens	% of Fixture	B	U	G
Forward		546	38.9			
FL	(0° - 30°)	80.1	5.7			
FM	(30° - 60°)	259.3	18.5			
FH	(60° - 80°)	151.4	10.8			G0
FVH	(80° - 90°)	54.8	3.9			G1
Backward		546	38.9			
BL	(0° - 30°)	80.1	5.7	B0		
BM	(30° - 60°)	259.3	18.5	B1		
BH	(60° - 80°)	151.4	10.8	B1		G0
BVH	(80° - 90°)	54.8	3.9			G1
Upward		310	22.1			
UL	(90° - 100°)	89.9	6.4		U3	
UH	(100° - 180°)	219.9	15.7		U3	
Trapped Light		0	0.0			
Total Flux		1401	100.0			

Zonal Lumen Summary

(Linear scale)

UH
219.9 Lm
15.7%

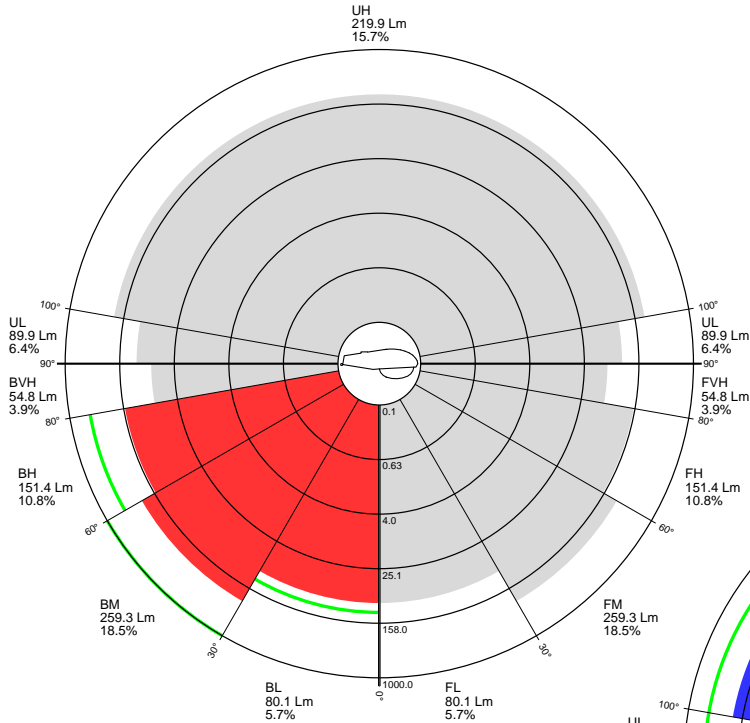


REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15
 PREPARED FOR: RAB LIGHTING INC.

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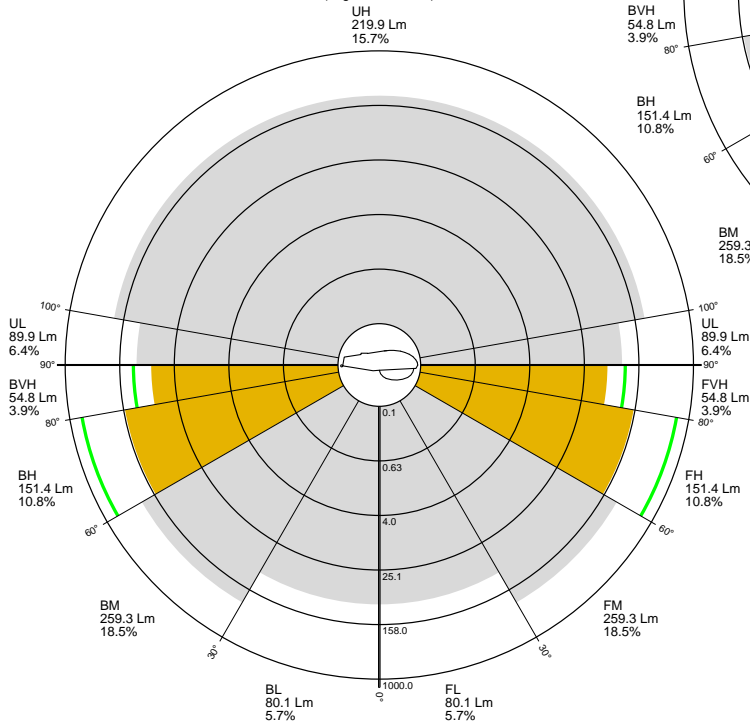
Backlight Rating Details

(Logarithmic scale)



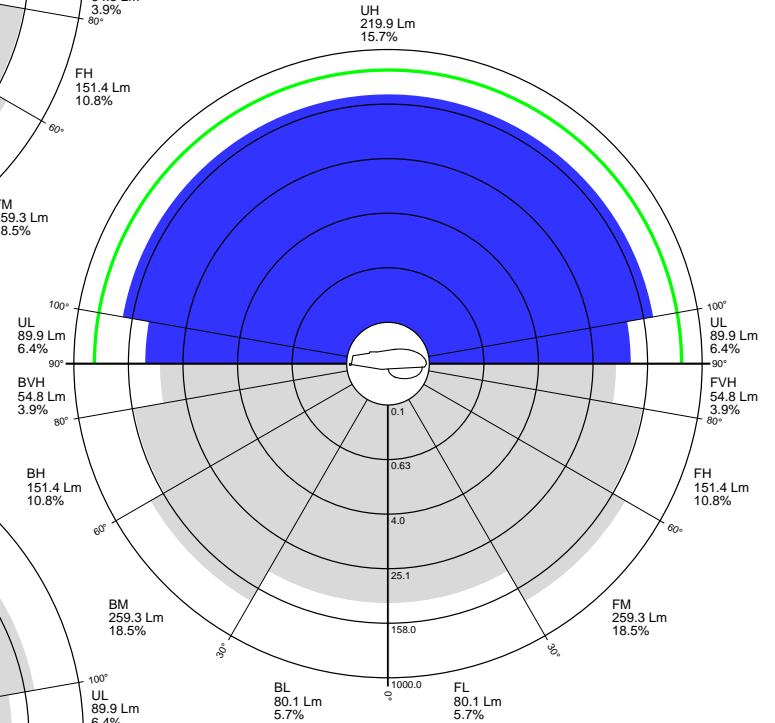
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)



REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15
 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	55.0	65.0	75.0 85.0
	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	5.	5.	5.	5.	5.	5.	5.	4.	4. 4.
	155.0	16.	16.	16.	16.	16.	16.	16.	16.	16.
	145.0	26.	26.	26.	26.	26.	26.	26.	26.	26.
	135.0	35.	35.	35.	36.	36.	36.	36.	36.	35. 35.
	125.0	43.	43.	44.	45.	46.	46.	46.	46.	45. 44.
	115.0	53.	53.	54.	56.	56.	57.	57.	56.	54. 53.
	105.0	64.	64.	66.	68.	69.	69.	69.	68.	66. 65.
	95.0	79.	79.	81.	83.	84.	84.	84.	84.	81. 79.
	90.0	86.	87.	89.	91.	91.	92.	92.	91.	89. 87.
	87.5	91.	92.	94.	96.	96.	97.	97.	96.	94. 92.
	85.0	96.	97.	99.	101.	102.	102.	102.	102.	99. 97.
V	82.5	102.	103.	105.	107.	107.	108.	108.	108.	105. 104.
E	80.0	109.	110.	112.	114.	114.	114.	114.	114.	112. 110.
R	77.5	116.	117.	119.	121.	120.	120.	120.	121.	119. 117.
T	75.0	124.	124.	127.	128.	128.	127.	127.	129.	127. 125.
I	72.5	132.	133.	135.	137.	135.	135.	135.	137.	135. 134.
C	70.0	142.	143.	145.	146.	144.	144.	145.	147.	146. 144.
A	67.5	154.	155.	156.	157.	155.	155.	155.	159.	158. 156.
L	65.0	167.	167.	169.	169.	166.	166.	167.	172.	172. 170.
	62.5	181.	181.	182.	183.	178.	179.	181.	187.	187. 186.
A	60.0	197.	197.	197.	197.	192.	192.	194.	203.	204. 202.
N	57.5	212.	212.	212.	211.	205.	205.	207.	217.	218. 217.
G	55.0	227.	227.	227.	226.	218.	219.	220.	231.	232. 231.
L	52.5	242.	242.	243.	242.	231.	231.	231.	244.	246. 244.
E	50.0	250.	249.	251.	250.	240.	238.	238.	252.	254. 252.
	47.5	249.	249.	250.	249.	240.	238.	238.	251.	253. 251.
	45.0	241.	242.	242.	241.	234.	232.	232.	243.	246. 244.
	42.5	234.	234.	233.	231.	226.	224.	225.	234.	236. 236.
	40.0	228.	228.	228.	225.	220.	217.	219.	226.	228. 228.
	37.5	222.	222.	221.	219.	214.	212.	213.	218.	221. 221.
	35.0	215.	215.	214.	212.	208.	205.	206.	210.	213. 213.
	30.0	200.	199.	198.	197.	195.	193.	191.	195.	195. 195.
	25.0	188.	188.	188.	187.	185.	184.	181.	184.	183. 182.
	20.0	177.	177.	177.	176.	174.	174.	173.	174.	174. 175.
	15.0	185.	185.	184.	183.	182.	181.	181.	182.	182. 183.
	10.0	210.	211.	210.	210.	209.	209.	209.	209.	209. 209.
	5.0	251.	252.	251.	252.	251.	251.	251.	251.	251. 251.
	0.0<<	264.	264.	264.	264.	264.	264.	264.	264.	264. 264.

||
 PLANE OF MAXIMUM CANDELA
 |
 CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15
 PREPARED FOR: RAB LIGHTING INC.

PAGE: 7 OF 8

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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
165.0	4.	4.	4.	4.	5.	5.	5.	5.	5.	5.	5.
155.0	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.	16.
145.0	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.	26.
135.0	35.	35.	35.	36.	36.	36.	36.	36.	35.	35.	35.
125.0	44.	44.	45.	46.	46.	46.	46.	45.	44.	43.	43.
115.0	53.	53.	54.	56.	57.	57.	56.	56.	54.	53.	53.
105.0	64.	65.	66.	68.	69.	69.	69.	68.	66.	64.	64.
95.0	79.	79.	81.	84.	84.	84.	84.	83.	81.	79.	79.
90.0	86.	87.	89.	91.	92.	92.	91.	91.	89.	87.	86.
87.5	91.	92.	94.	96.	97.	97.	96.	96.	94.	92.	91.
85.0	97.	97.	99.	102.	102.	102.	102.	101.	99.	97.	96.
V 82.5	102.	104.	105.	108.	108.	108.	107.	107.	105.	103.	102.
E 80.0	109.	110.	112.	114.	114.	114.	114.	114.	112.	110.	109.
R 77.5	116.	117.	119.	121.	120.	120.	120.	121.	119.	117.	116.
T 75.0	124.	125.	127.	129.	127.	127.	128.	128.	127.	124.	124.
I 72.5	133.	134.	135.	137.	135.	135.	135.	137.	135.	133.	132.
C 70.0	143.	144.	146.	147.	145.	144.	144.	146.	145.	143.	142.
A 67.5	155.	156.	158.	159.	155.	155.	155.	157.	156.	155.	154.
L 65.0	170.	170.	172.	172.	167.	166.	166.	169.	169.	167.	167.
62.5	185.	186.	187.	187.	181.	179.	178.	183.	182.	181.	181.
A 60.0	202.	202.	204.	203.	194.	192.	192.	197.	197.	197.	197.
N 57.5	217.	217.	218.	217.	207.	205.	205.	211.	212.	212.	212.
G 55.0	231.	231.	232.	231.	220.	219.	218.	226.	227.	227.	227.
L 52.5	244.	244.	246.	244.	231.	231.	231.	242.	243.	242.	242.
E 50.0	251.	252.	254.	252.	238.	238.	240.	250.	251.	249.	250.
47.5	250.	251.	253.	251.	238.	238.	240.	249.	250.	249.	249.
45.0	244.	244.	246.	243.	232.	232.	234.	241.	242.	242.	241.
42.5	236.	236.	236.	234.	225.	224.	226.	231.	233.	234.	234.
40.0	228.	228.	228.	226.	219.	217.	220.	225.	228.	228.	228.
37.5	221.	221.	221.	218.	213.	212.	214.	219.	221.	222.	222.
35.0	212.	213.	213.	210.	206.	205.	208.	212.	214.	215.	215.
30.0	195.	195.	195.	195.	191.	193.	195.	197.	198.	199.	200.
25.0	182.	182.	183.	184.	181.	184.	185.	187.	188.	188.	188.
20.0	175.	175.	174.	174.	173.	174.	174.	176.	177.	177.	177.
15.0	183.	183.	182.	182.	181.	181.	182.	183.	184.	185.	185.
10.0	208.	209.	209.	209.	209.	209.	209.	210.	210.	211.	210.
5.0	251.	251.	251.	251.	251.	251.	251.	252.	251.	252.	251.
0.0<<	264.	264.	264.	264.	264.	264.	264.	264.	264.	264.	264.

CONE OF MAXIMUM CANDELA

REPORT NUMBER: RAB00705
 ISSUE DATE: 02/04/15
 PREPARED FOR: RAB LIGHTING INC.

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5-DEGREE ZONAL LUMEN SUMMARY

0- 5	6
5- 10	16
10- 15	23
15- 20	29
20- 25	38
25- 30	48
30- 35	60
35- 40	73
40- 45	86
45- 50	99
50- 55	103
55- 60	98
60- 65	89
65- 70	79
70- 75	71
75- 80	64
80- 85	58
85- 90	52
90- 95	47
95-100	43
100-105	38
105-110	33
110-115	29
115-120	26
120-125	22
125-130	19
130-135	15
135-140	12
140-145	10
145-150	7
150-155	5
155-160	3
160-165	1
165-170	0
170-175	0
175-180	0

10-DEGREE ZONAL LUMEN SUMMARY

0- 10	23
0- 20	75
0- 30	160
0- 40	293
0- 50	478
0- 60	679
0- 70	847
0- 80	982
0- 90	1091
0-100	1181
0-110	1253
0-120	1308
0-130	1348
0-140	1376
0-150	1392
0-160	1400
0-170	1401
0-180	1401

REPORT NUMBER: RAB00706
 DATE: 2/5/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26YDG / VXBRLD26YDG

ADDRESS: 170 LUDLOW AVE, NORTHVALE, NJ 07647

LUMINAIRE: CAST FINNED DIFFUSE METAL HOUSING, 1 CIRCUIT BOARD WITH 144 LEDS, FROSTED GLASS LENS, CAST DIFFUSE METAL GUARD SURROUNDING LENS. LENS FROSTED SIDE IN.

LAMP: ONE HUNDRED FORTY-FOUR WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.

DRIVER: RD-042-A0700N

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 6460	Calibration Due: N/A
	CHROMA PROGRAMMABLE DIGITAL POWER METER MODEL 66202	3/14/15
	OCEAN OPTICS QE65PRO Spectroradiometer	2/5/16
	RAB 2.0 meter Diameter Integrating Sphere, 4PI Geometry	2/5/16

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: RAB00706
 DATE: 2/5/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26YDG / VXBRLLED26YDG

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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	1401 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4435
Chromaticity Ordinate y	0.4101
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2522
Chromaticity Ordinate v'	0.5247
Correlated Color Temp CCT (K)	2941
ANSI C78.377-2008 Duv	0.002
Total Radiant Flux (milliWatts)	4206 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.220
Input Power (Watts)	26.2
Input Power Factor (%)	99.2
Input Current THD (%)	8.5
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
	53.5
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.106
Input Power (Watts)	27.0
Input Power Factor (%)	92.0
Input Current THD (%)	10.6
Input Voltage THD (%)	0.0
Off-State Power (Watts)	0.0

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	81
R1 Light greyish red	79
R2 Dark greyish yellow	89
R3 Strong yellowish green	97
R4 Moderate yellowish green	79
R5 Light bluish green	79
R6 Light blue	88
R7 Light violet	82
R8 Light reddish purple	55
R9 Strong red	-1
R10 Strong yellow	76
R11 Strong green	78
R12 Strong blue	68
R13 Light yellowish pink (skin)	81
R14 Moderate olive green (leaf)	99

*NOTE:

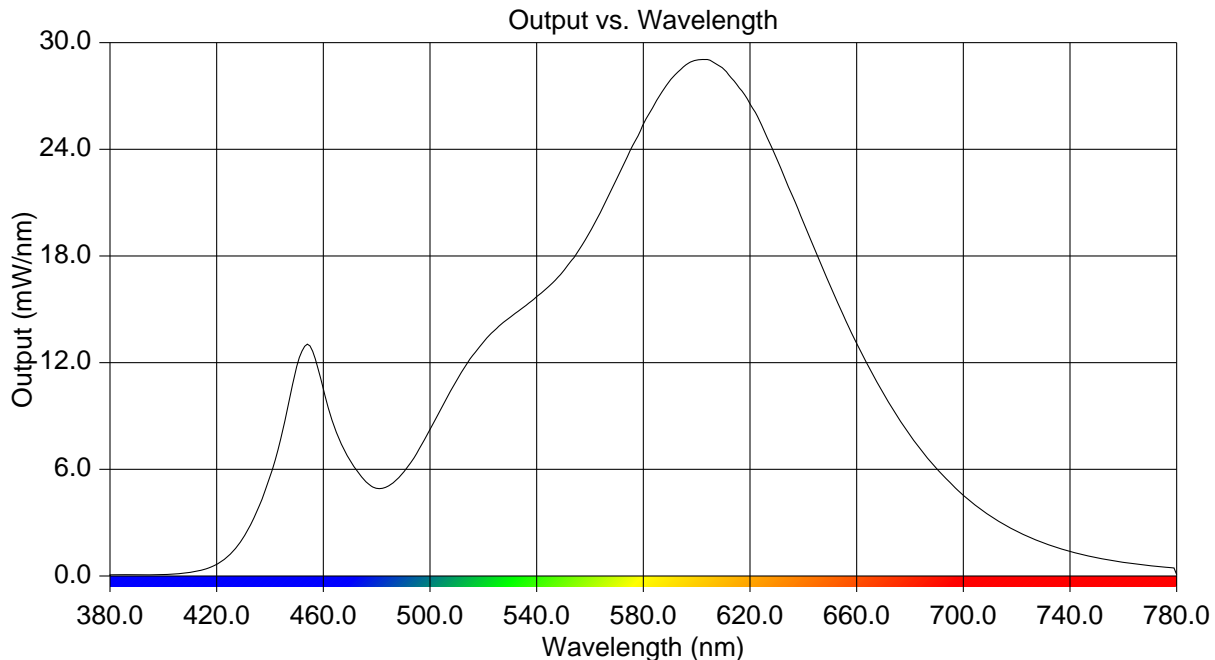
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even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

REPORT NUMBER: RAB00706
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 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26YDG / VXBRLLED26YDG

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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.063	515	12.209	650	16.364
385	0.063	520	13.161	655	14.672
390	0.062	525	13.925	660	13.099
395	0.073	530	14.533	665	11.625
400	0.082	535	15.110	670	10.283
405	0.119	540	15.716	675	9.038
410	0.199	545	16.360	680	7.940
415	0.354	550	17.139	685	6.929
420	0.656	555	18.140	690	6.030
425	1.205	560	19.383	695	5.263
430	2.166	565	20.795	700	4.541
435	3.615	570	22.347	705	3.922
440	5.590	575	23.914	710	3.382
445	8.358	580	25.412	715	2.932
450	11.774	585	26.754	720	2.520
455	12.942	590	27.893	725	2.161
460	10.527	595	28.634	730	1.863
465	8.033	600	29.026	735	1.600
470	6.508	605	29.013	740	1.382
475	5.447	610	28.530	745	1.192
480	4.943	615	27.660	750	1.030
485	5.123	620	26.557	755	0.892
490	5.831	625	25.154	760	0.769
495	6.889	630	23.479	765	0.662
500	8.241	635	21.696	770	0.578
505	9.655	640	19.901	775	0.504
510	11.009	645	18.117	780	0.077



REPORT NUMBER: RAB00706
DATE: 2/5/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: VXLED26YDG / VXBRLD26YDG

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CIE Chromaticity Diagram

