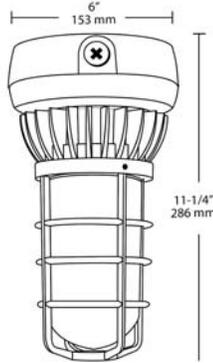


ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

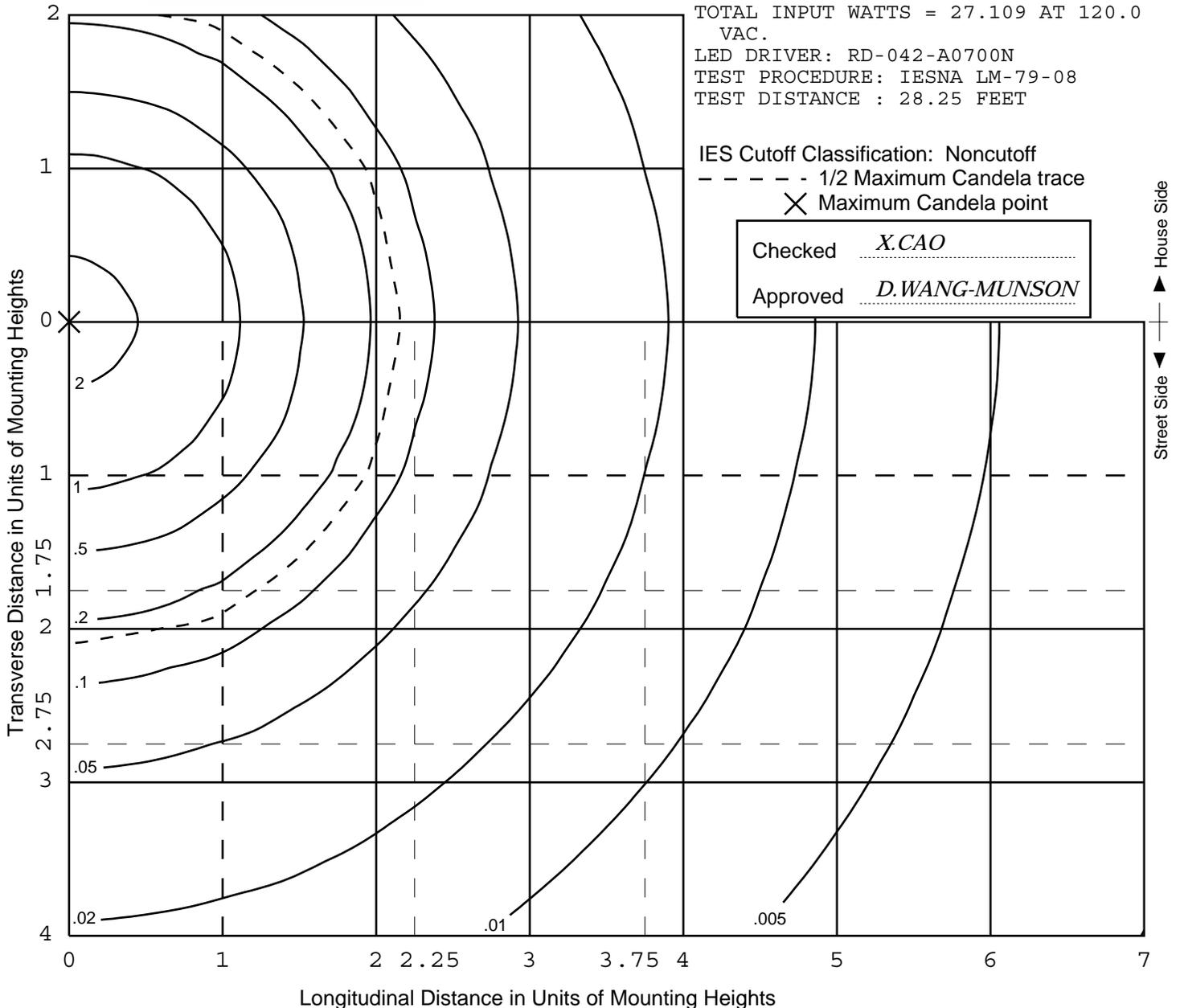
Values based on 10 foot mounting height.



REPORT NUMBER: RAB00703
 ISSUE DATE: 02/05/15 PAGE: 1 OF 8
 DATE SAMPLE TESTED: 02/06/15
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26DG / VXBRLLED26DG
 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 = 27.109 AT 120.0 VAC.
 LED DRIVER: RD-042-A0700N
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE : 28.25 FEET

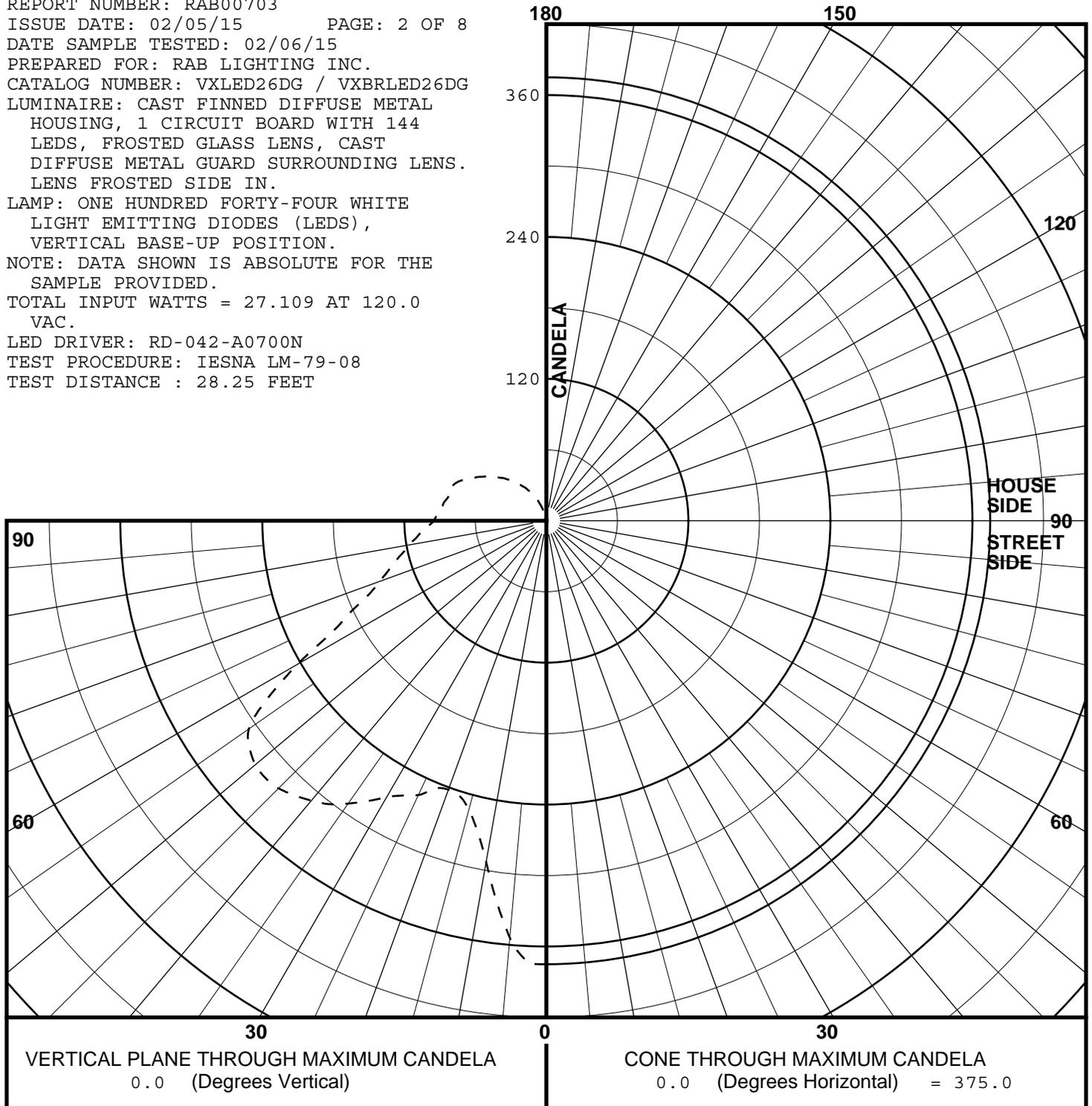
IES Cutoff Classification: Noncutoff

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



MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

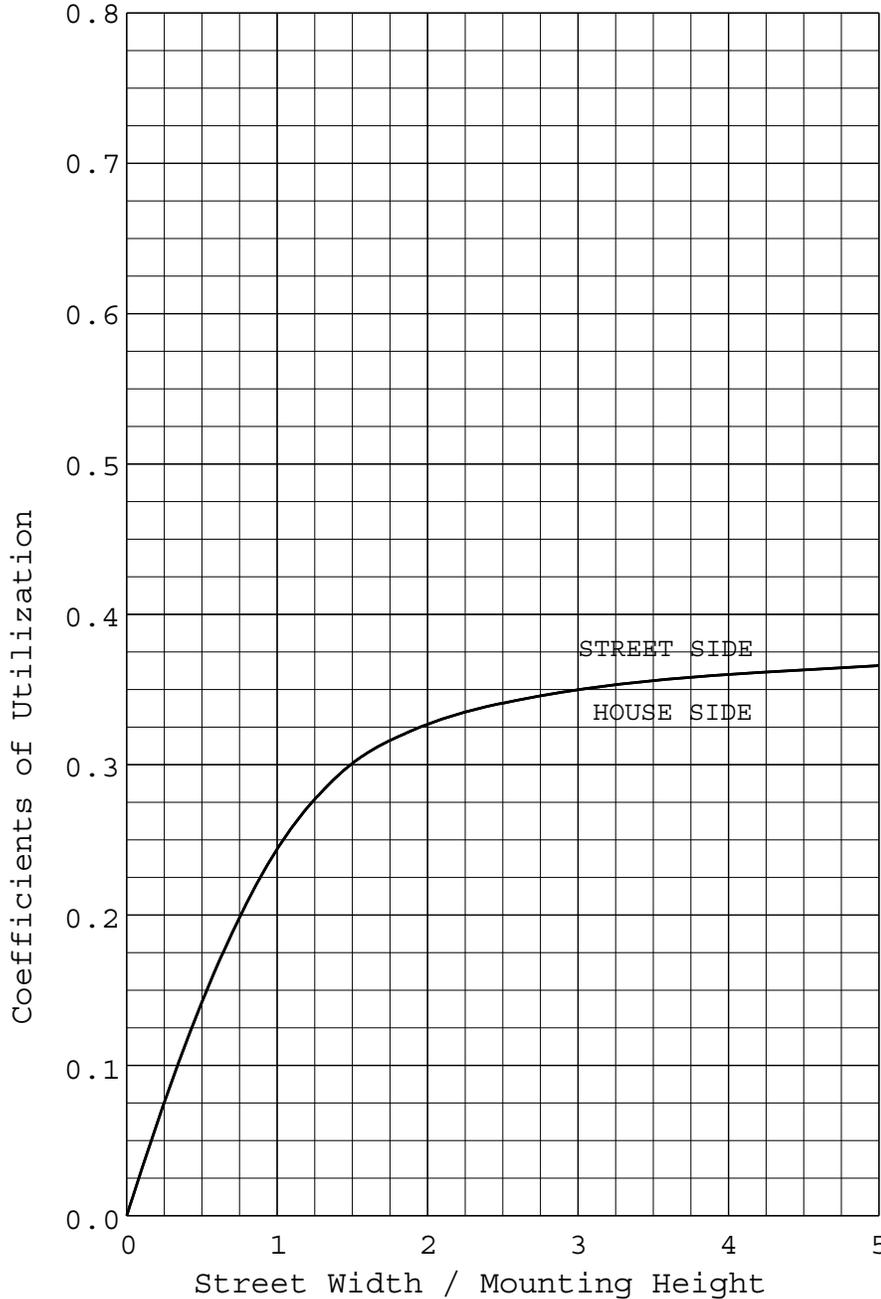
REPORT NUMBER: RAB00703
 ISSUE DATE: 02/05/15 PAGE: 2 OF 8
 DATE SAMPLE TESTED: 02/06/15
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26DG / VXBRLED26DG
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 LAMP: ONE HUNDRED FORTY-FOUR WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL BASE-UP POSITION.
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
 TOTAL INPUT WATTS = 27.109 AT 120.0 VAC.
 LED DRIVER: RD-042-A0700N
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE : 28.25 FEET



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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	691.	39.0
DOWNWARD HOUSE SIDE	691.	39.0
DOWNWARD TOTAL	1383.	77.9
UPWARD STREET SIDE	196.	11.0
UPWARD HOUSE SIDE	196.	11.0
UPWARD TOTAL	392.	22.1
TOTAL FLUX	1774.	100.0

TOTAL INPUT WATTS = 27.1
 EFFICACY = 65.5 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.

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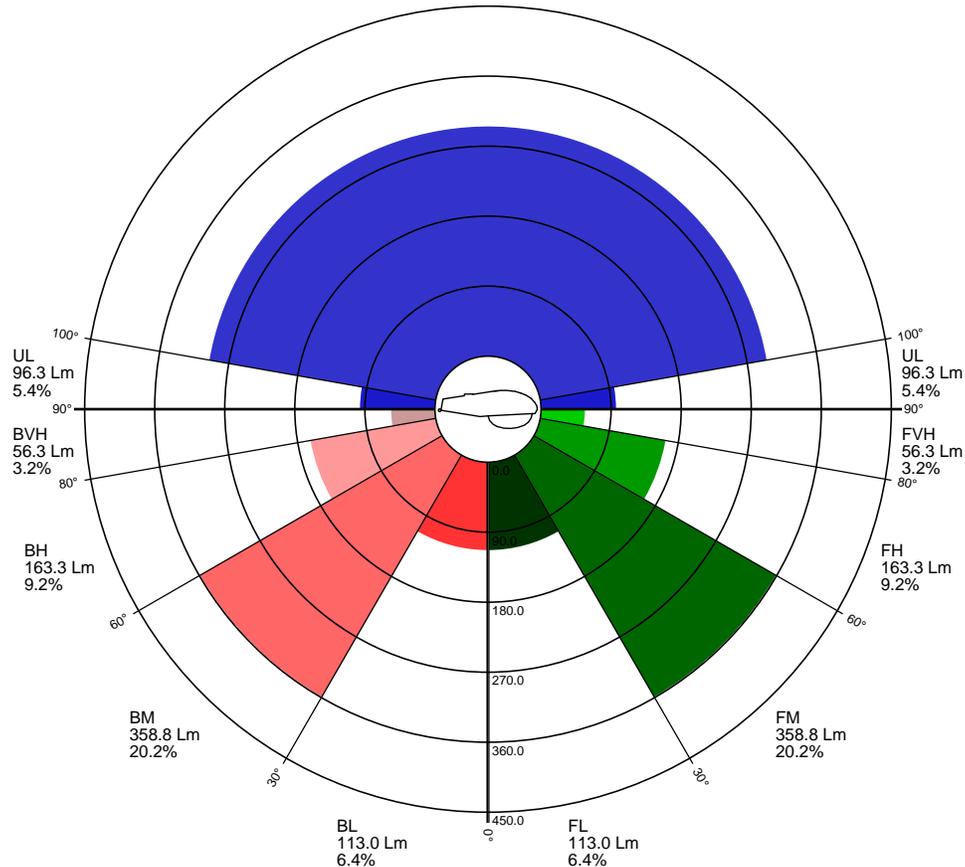
PAGE: 4 OF 8
 DATE SAMPLE TESTED: 02/06/15

BUG Rating:			B1	U3	G1	
Zonal Summary			Zone Ratings			
		Lumens	% of Fixture	B	U	G
Forward		691	39.0			
FL	(0° - 30°)	113.0	6.4			
FM	(30° - 60°)	358.8	20.2			
FH	(60° - 80°)	163.3	9.2			G0
FVH	(80° - 90°)	56.3	3.2			G1
Backward		691	39.0			
BL	(0° - 30°)	113.0	6.4	B1		
BM	(30° - 60°)	358.8	20.2	B1		
BH	(60° - 80°)	163.3	9.2	B1		G0
BVH	(80° - 90°)	56.3	3.2			G1
Upward		392	22.1			
UL	(90° - 100°)	96.3	5.4		U3	
UH	(100° - 180°)	295.3	16.6		U3	
Trapped Light		0	0.0			
Total Flux		1774	100.0			

Zonal Lumen Summary

(Linear scale)

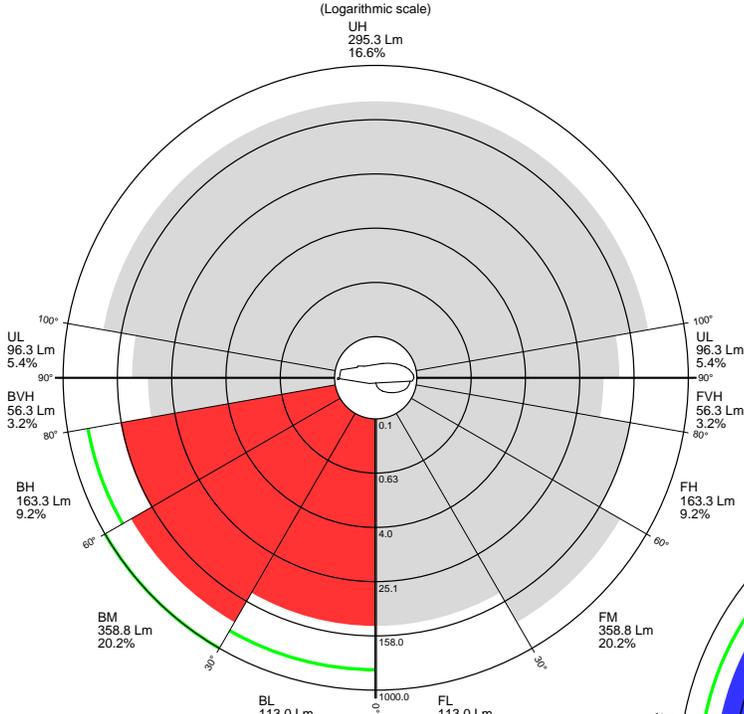
UH
295.3 Lm
16.6%



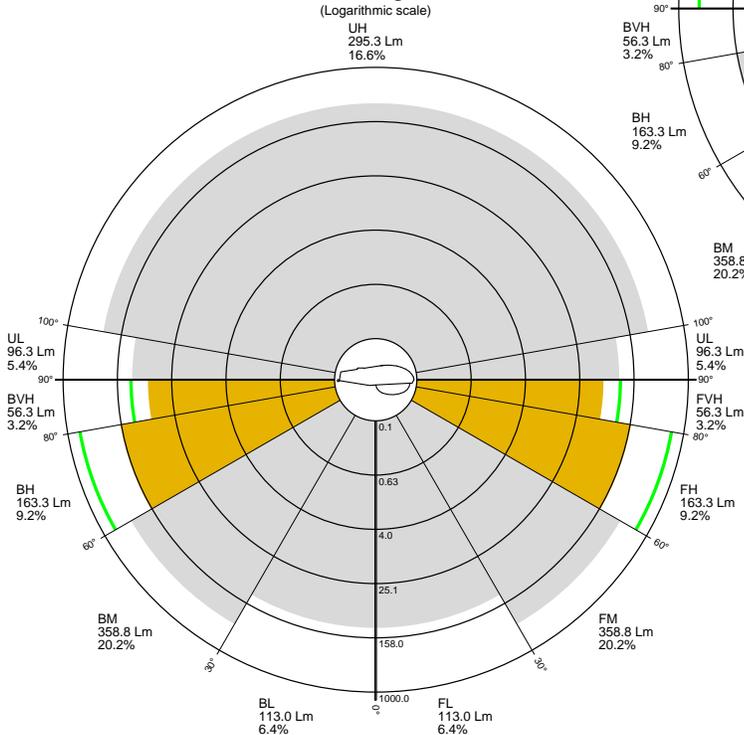
REPORT NUMBER: RAB00703
 ISSUE DATE: 02/05/15
 PREPARED FOR: RAB LIGHTING INC.

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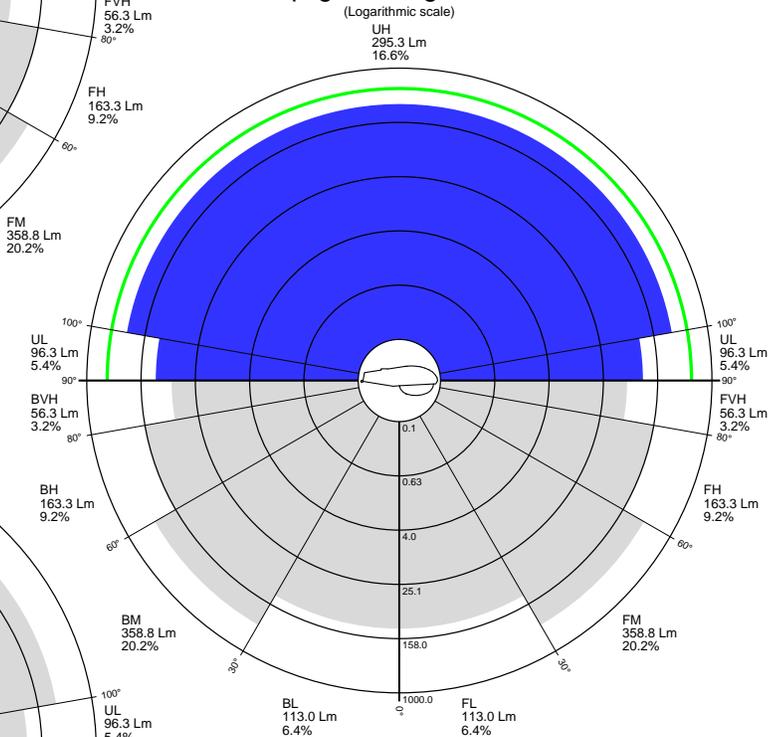
Backlight Rating Details



Glare Rating Details



Uplight Rating Details

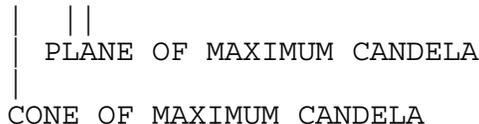


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 DATE SAMPLE TESTED: 02/06/15

CANDELA TABULATION

	LATERAL ANGLE									
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	6.	6.	6.	6.	6.	7.	7.	7.	7.	7.
	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.
	51.	51.	51.	50.	50.	49.	49.	50.	50.	51.
	65.	65.	64.	63.	62.	62.	62.	63.	64.	64.
	80.	80.	79.	78.	75.	75.	76.	77.	78.	79.
	85.	85.	84.	82.	80.	79.	80.	82.	83.	84.
	91.	91.	90.	88.	86.	85.	86.	88.	89.	90.
	95.	95.	95.	93.	90.	89.	90.	92.	94.	95.
	100.	100.	99.	98.	95.	94.	95.	97.	98.	100.
	106.	105.	104.	103.	101.	100.	101.	102.	104.	105.
V	82.5	111.	111.	110.	109.	107.	106.	107.	108.	109.
E	80.0	118.	117.	117.	116.	114.	113.	114.	115.	115.
R	77.5	124.	123.	123.	123.	121.	120.	121.	122.	121.
T	75.0	132.	131.	131.	132.	130.	129.	130.	131.	130.
I	72.5	140.	139.	138.	140.	139.	138.	139.	139.	138.
C	70.0	150.	148.	148.	151.	150.	149.	150.	151.	148.
A	67.5	162.	160.	161.	165.	164.	164.	165.	166.	162.
L	65.0	182.	180.	181.	186.	186.	187.	188.	190.	185.
	62.5	204.	202.	204.	211.	212.	213.	215.	217.	211.
A	60.0	243.	241.	243.	252.	254.	255.	259.	260.	254.
N	57.5	279.	277.	280.	289.	291.	293.	296.	298.	291.
G	55.0	307.	305.	308.	318.	321.	322.	325.	326.	319.
L	52.5	316.	315.	318.	328.	331.	331.	334.	334.	328.
E	50.0	321.	319.	323.	334.	336.	336.	338.	338.	332.
	47.5	322.	321.	325.	334.	337.	337.	339.	338.	332.
	45.0	320.	320.	324.	332.	335.	335.	336.	335.	329.
	42.5	315.	315.	320.	327.	330.	330.	331.	330.	324.
	40.0	309.	309.	313.	320.	323.	323.	324.	322.	317.
	37.5	302.	302.	306.	312.	315.	315.	315.	313.	309.
	35.0	292.	293.	297.	302.	305.	305.	305.	302.	298.
	30.0	270.	270.	273.	277.	280.	279.	279.	277.	275.
	25.0	256.	255.	258.	264.	266.	264.	262.	260.	259.
	20.0	242.	242.	244.	247.	248.	248.	247.	247.	247.
	15.0	253.	254.	254.	256.	258.	258.	257.	257.	256.
	10.0	293.	295.	294.	295.	294.	295.	295.	295.	294.
	5.0	354.	354.	354.	354.	353.	354.	353.	353.	352.
	0.0<<	375.	375.	375.	375.	375.	375.	375.	375.	375.



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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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	6.	7.	7.	7.	7.	7.	6.	6.	6.	6.
	155.0	22.	22.	22.	22.	22.	22.	22.	22.	22.	22.
	145.0	36.	36.	36.	36.	36.	36.	36.	36.	36.	36.
	135.0	51.	51.	50.	50.	49.	49.	50.	50.	51.	51.
	125.0	65.	64.	64.	63.	62.	62.	62.	63.	64.	65.
	115.0	79.	79.	78.	77.	76.	75.	75.	78.	79.	80.
	105.0	84.	84.	83.	82.	80.	79.	80.	82.	84.	85.
	95.0	90.	90.	89.	88.	86.	85.	86.	88.	90.	91.
	90.0	95.	95.	94.	92.	90.	89.	90.	93.	95.	95.
	87.5	100.	100.	98.	97.	95.	94.	95.	98.	99.	100.
	85.0	105.	105.	104.	102.	101.	100.	101.	103.	104.	105.
V	82.5	111.	110.	109.	108.	107.	106.	107.	109.	110.	111.
E	80.0	117.	117.	115.	115.	114.	113.	114.	116.	117.	118.
R	77.5	124.	123.	121.	122.	121.	120.	121.	123.	123.	124.
T	75.0	132.	131.	130.	131.	130.	129.	130.	132.	131.	132.
I	72.5	140.	139.	138.	139.	139.	138.	139.	140.	138.	140.
C	70.0	151.	149.	148.	151.	150.	149.	150.	151.	148.	150.
A	67.5	165.	163.	162.	166.	165.	164.	164.	165.	161.	160.
L	65.0	187.	185.	185.	190.	188.	187.	186.	186.	181.	180.
	62.5	213.	211.	211.	217.	215.	213.	212.	211.	204.	202.
A	60.0	256.	253.	254.	260.	259.	255.	254.	252.	243.	241.
N	57.5	294.	291.	291.	298.	296.	293.	291.	289.	280.	277.
G	55.0	322.	319.	319.	326.	325.	322.	321.	318.	308.	305.
L	52.5	330.	328.	328.	334.	334.	331.	331.	328.	318.	315.
E	50.0	333.	332.	332.	338.	338.	336.	336.	334.	323.	319.
	47.5	332.	331.	332.	338.	339.	337.	337.	334.	325.	321.
	45.0	328.	328.	329.	335.	336.	335.	335.	332.	324.	320.
	42.5	323.	322.	324.	330.	331.	330.	330.	327.	320.	315.
	40.0	315.	315.	317.	322.	324.	323.	323.	320.	313.	309.
	37.5	307.	307.	309.	313.	315.	315.	315.	312.	306.	302.
	35.0	297.	296.	298.	302.	305.	305.	305.	302.	297.	293.
	30.0	276.	275.	275.	277.	279.	279.	280.	277.	273.	270.
	25.0	262.	260.	259.	260.	262.	264.	266.	264.	258.	255.
	20.0	248.	247.	247.	247.	247.	248.	248.	247.	244.	242.
	15.0	255.	256.	256.	257.	258.	258.	258.	256.	254.	254.
	10.0	293.	293.	294.	295.	295.	295.	294.	295.	294.	295.
	5.0	352.	352.	352.	353.	353.	354.	353.	354.	354.	354.
	0.0<<	375.	375.	375.	375.	375.	375.	375.	375.	375.	375.

CONE OF MAXIMUM CANDELA

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5-DEGREE
 ZONAL LUMEN SUMMARY

0- 5	9
5- 10	23
10- 15	32
15- 20	41
20- 25	53
25- 30	68
30- 35	85
35- 40	103
40- 45	120
45- 50	134
50- 55	142
55- 60	133
60- 65	104
65- 70	84
70- 75	73
75- 80	66
80- 85	59
85- 90	53
90- 95	49
95-100	47
100-105	45
105-110	43
110-115	41
115-120	36
120-125	31
125-130	26
130-135	22
135-140	17
140-145	13
145-150	10
150-155	6
155-160	4
160-165	2
165-170	0
170-175	0
175-180	0

10-DEGREE
 ZONAL LUMEN SUMMARY

0- 10	32
0- 20	105
0- 30	226
0- 40	414
0- 50	669
0- 60	944
0- 70	1132
0- 80	1270
0- 90	1383
0-100	1479
0-110	1567
0-120	1643
0-130	1700
0-140	1739
0-150	1762
0-160	1772
0-170	1774
0-180	1774

REPORT NUMBER: RAB00704
DATE: 2/6/2015
PREPARED FOR: RAB LIGHTING INC.
CATALOG NUMBER: VXLED26DG / VXBRLLED26DG

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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: RAB00704
 DATE: 2/6/2015
 PREPARED FOR: RAB LIGHTING INC.
 CATALOG NUMBER: VXLED26DG / VXBRLLED26DG

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	2004 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3471
Chromaticity Ordinate y	0.3806
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2020
Chromaticity Ordinate v'	0.4984
Correlated Color Temp CCT (K)	5020
ANSI C78.377-2008 Duv	0.013
Total Radiant Flux (milliWatts)	5707 *
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.227
Input Power (Watts)	27.1
Input Power Factor (%)	99.5
Input Current THD (%)	5.9
Input Voltage THD (%)	0.1
EFFICACY (Lumens/Watt)	
73.9	
ELECTRICAL AT MAX NONIMAL INPUT	
Input Voltage (Volts AC)	277.0
Input Current (Amps AC)	0.110
Input Power (Watts)	27.8
Input Power Factor (%)	91.2
Input Current THD (%)	11.7
Input Voltage THD (%)	0.1
Off-State Power (Watts)	
0.0	

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	68
R1 Light greyish red	63
R2 Dark greyish yellow	74
R3 Strong yellowish green	82
R4 Moderate yellowish green	66
R5 Light bluish green	63
R6 Light blue	63
R7 Light violet	83
R8 Light reddish purple	52
R9 Strong red	-48
R10 Strong yellow	37
R11 Strong green	60
R12 Strong blue	31
R13 Light yellowish pink (skin)	64
R14 Moderate olive green (leaf)	90

*NOTE:

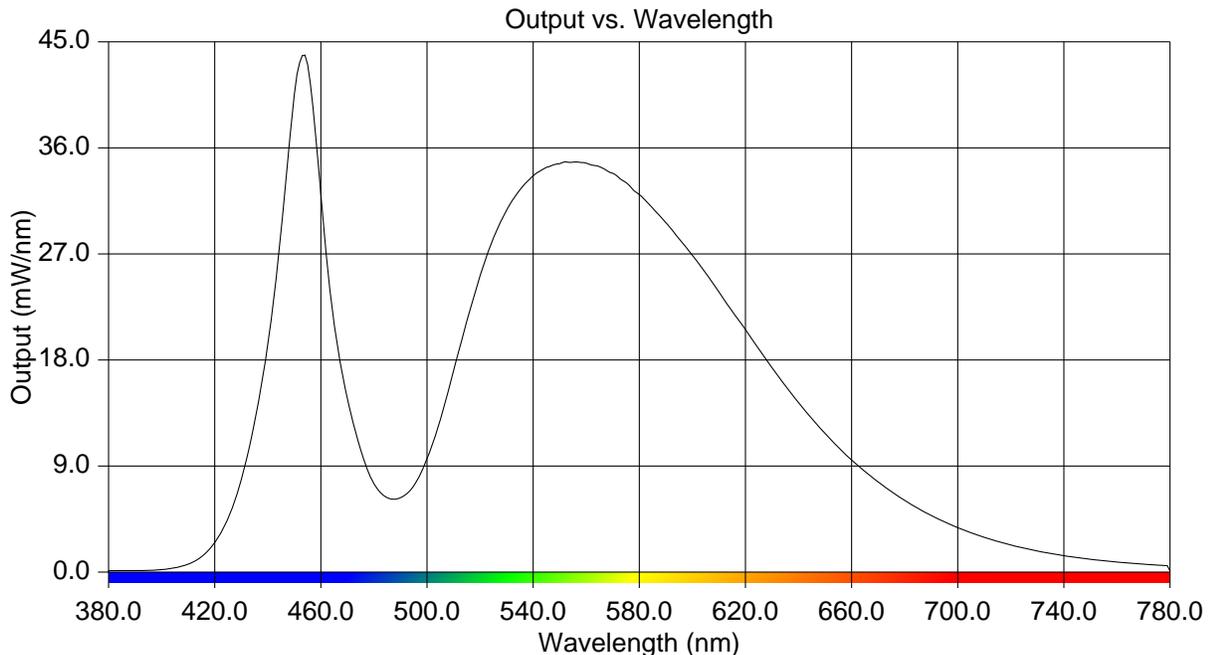
Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even 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	0.111	515	21.305	650	11.763
385	0.119	520	25.149	655	10.599
390	0.126	525	28.306	660	9.520
395	0.150	530	30.692	665	8.550
400	0.211	535	32.437	670	7.651
405	0.357	540	33.630	675	6.819
410	0.672	545	34.348	680	6.095
415	1.305	550	34.657	685	5.406
420	2.500	555	34.785	690	4.794
425	4.542	560	34.704	695	4.266
430	7.831	565	34.403	700	3.774
435	12.725	570	33.843	705	3.333
440	19.365	575	33.056	710	2.944
445	28.923	580	32.035	715	2.605
450	40.538	585	30.895	720	2.302
455	43.080	590	29.667	725	2.019
460	32.014	595	28.278	730	1.789
465	21.095	600	26.896	735	1.575
470	14.689	605	25.414	740	1.387
475	10.379	610	23.800	745	1.231
480	7.523	615	22.138	750	1.091
485	6.311	620	20.572	755	0.964
490	6.309	625	18.957	760	0.850
495	7.317	630	17.356	765	0.753
500	9.593	635	15.797	770	0.669
505	12.948	640	14.373	775	0.590
510	17.062	645	13.029	780	0.092



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CIE Chromaticity Diagram

