

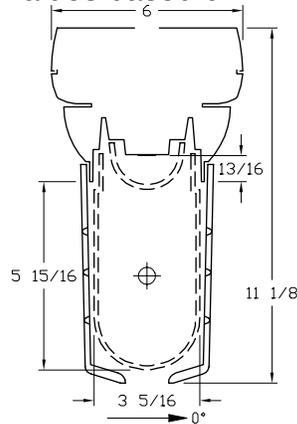
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**ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION**

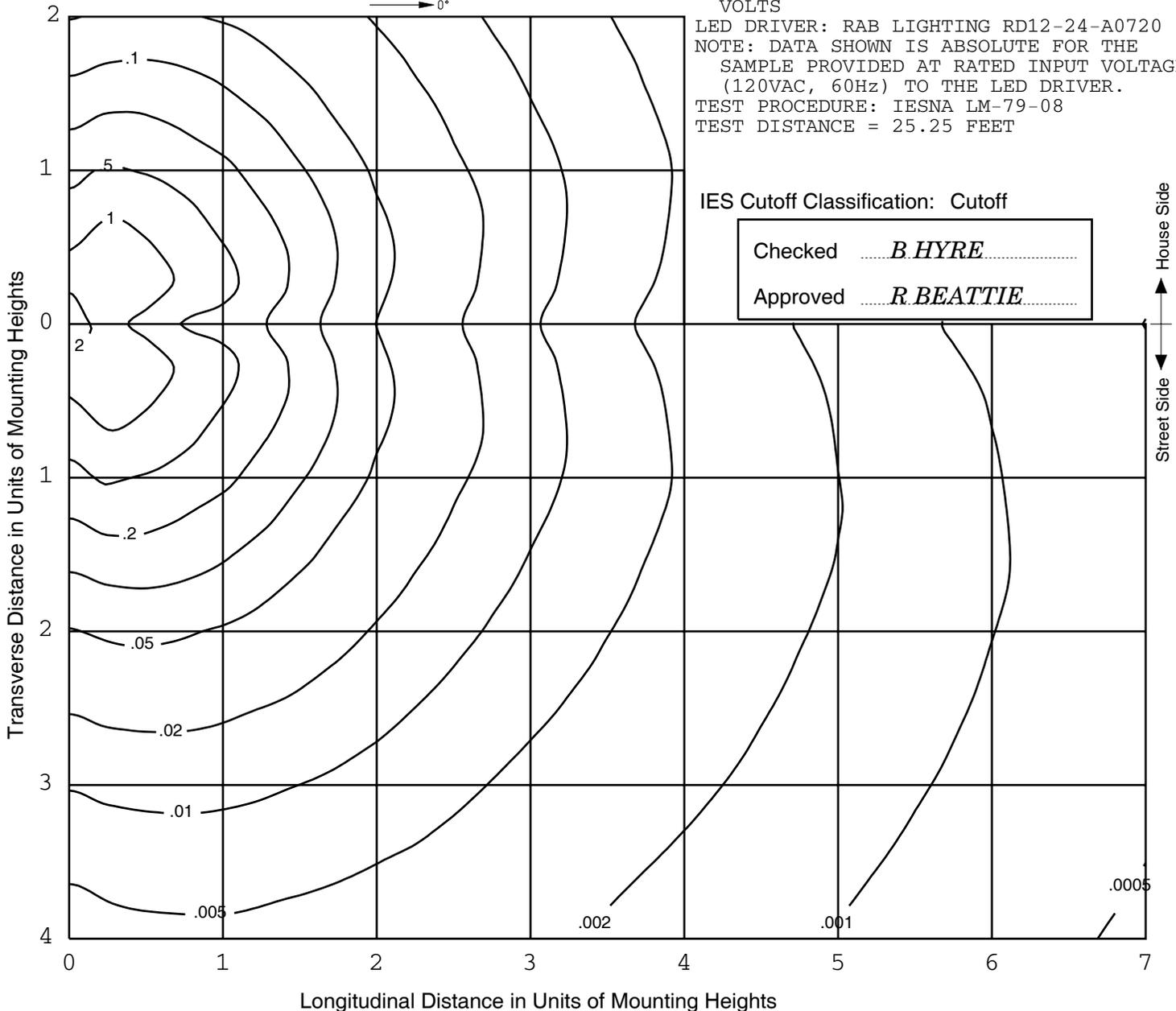
Values based on 10 foot mounting height.

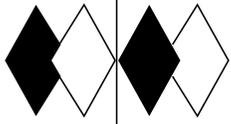


REPORT NUMBER: ITL67248  
 DATE: 02/01/11  
 PREPARED FOR: RAB LIGHTING, INC.  
 CATALOG NUMBER: VXLED13GL100GD100DG - VXBRL13GL100GD100DG  
 LUMINAIRE: CAST DIFFUSE METAL HOUSING, ONE CIRCUIT BOARD WITH ONE LED, INTERIOR FROSTED HEMISPHERICAL GLASS INTERIOR LENS, CLEAR CYLINDRICAL GLASS EXTERIOR LENS, CAST DIFFUSE METAL GUARD SURROUNDING LENS.  
 LAMP: ONE 13-WATT WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED) WITH LEADS ARRANGED IN AN ARRAY OF THREE LINEAR ROWS, VERTICAL BASE-UP POSITION.  
 TOTAL INPUT WATTS = 15.0 AT 120.0 VOLTS  
 LED DRIVER: RAB LIGHTING RD12-24-A0720  
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER.  
 TEST PROCEDURE: IESNA LM-79-08  
 TEST DISTANCE = 25.25 FEET

IES Cutoff Classification: Cutoff

Checked B. HYRE  
 Approved R. BEATTIE





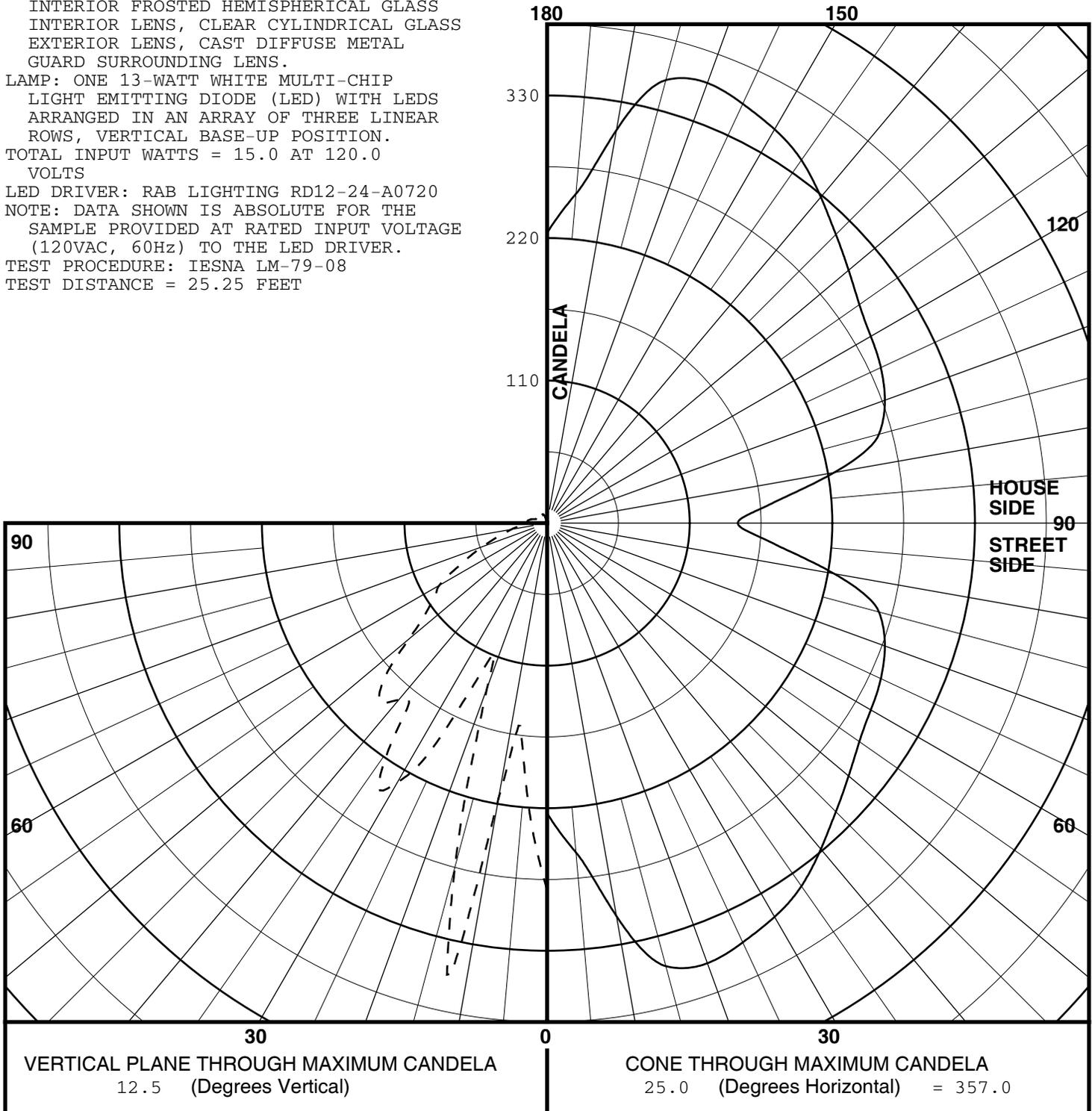
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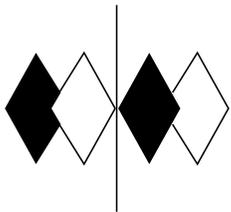
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 ONE CIRCUIT BOARD WITH ONE LED,  
 INTERIOR FROSTED HEMISPHERICAL GLASS  
 INTERIOR LENS, CLEAR CYLINDRICAL GLASS  
 EXTERIOR LENS, CAST DIFFUSE METAL  
 GUARD SURROUNDING LENS.  
 LAMP: ONE 13-WATT WHITE MULTI-CHIP  
 LIGHT EMITTING DIODE (LED) WITH LEDS  
 ARRANGED IN AN ARRAY OF THREE LINEAR  
 ROWS, VERTICAL BASE-UP POSITION.  
 TOTAL INPUT WATTS = 15.0 AT 120.0  
 VOLTS  
 LED DRIVER: RAB LIGHTING RD12-24-A0720  
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
 SAMPLE PROVIDED AT RATED INPUT VOLTAGE  
 (120VAC, 60Hz) TO THE LED DRIVER.  
 TEST PROCEDURE: IESNA LM-79-08  
 TEST DISTANCE = 25.25 FEET

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

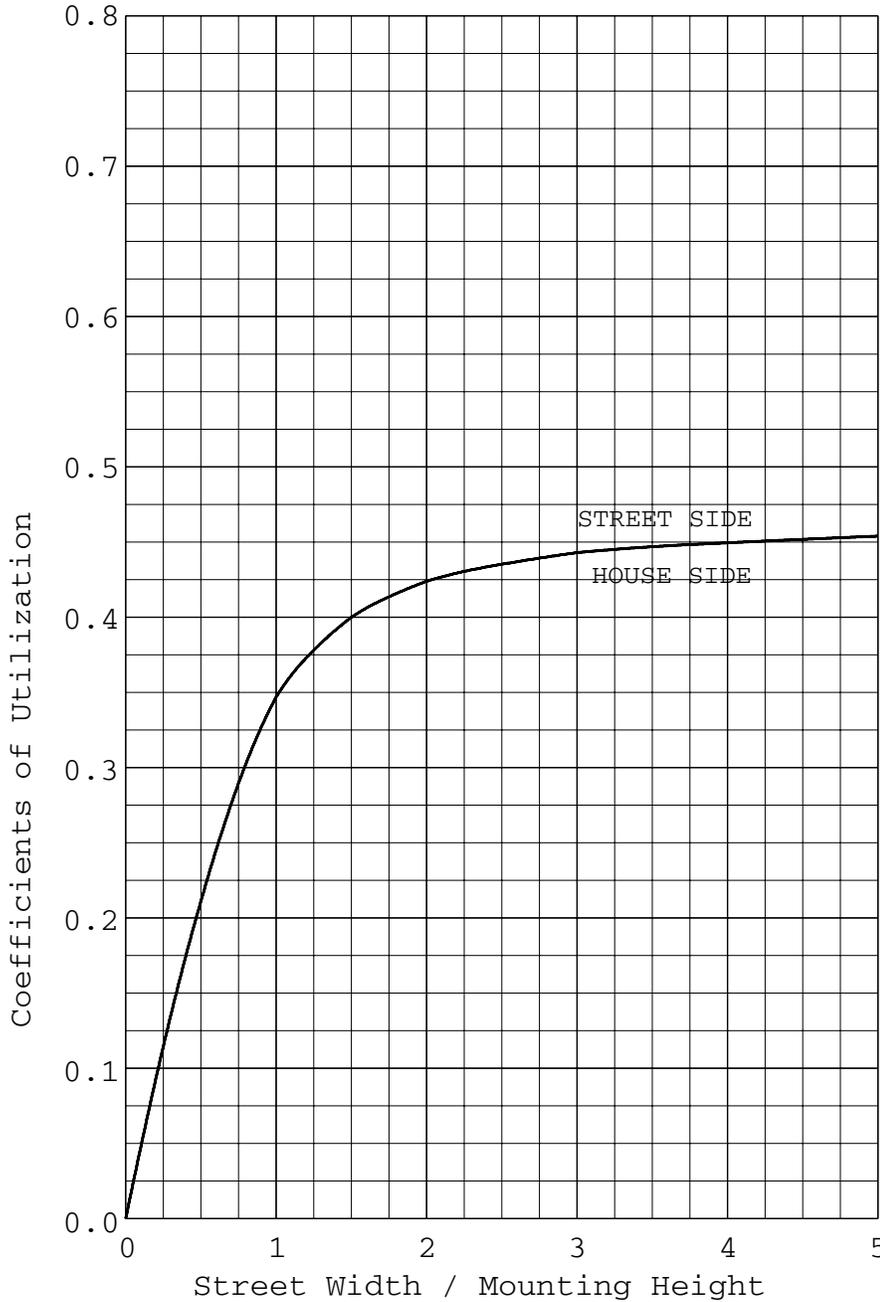




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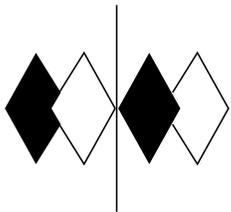
DATE: 02/01/11

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	312	45.5
DOWNWARD HOUSE SIDE	312	45.5
DOWNWARD TOTAL	625	91.0
UPWARD STREET SIDE	31	4.5
UPWARD HOUSE SIDE	31	4.5
UPWARD TOTAL	62	9.0
TOTAL FLUX	687	100.0
EFFICACY = 45.8 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.



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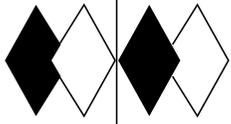
FLUX DISTRIBUTION BY SOLID ANGLE

(PER IESNA TM-15-07, LUMINAIRE CLASSIFICATION SYSTEM FOR OUTDOOR LUMINAIRES)

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	312.	45.5	
FL ( 0- 30)	77.5	11.3	
FM ( 30- 60)	170.5	24.8	
FH ( 60- 80)	53.3	7.8	G0
FVH( 80- 90)	11.3	1.6	U1 G1
BACK LIGHT	312.	45.5	
BL ( 0- 30)	77.5	11.3	B0
BM ( 30- 60)	170.5	24.8	B0
BH ( 60- 80)	53.3	7.8	B0 G0
BVH( 80- 90)	11.3	1.6	U1 G1
UPLIGHT	62.	9.0	
UL ( 90-100)	15.8	2.3	U2
UH (100-180)	45.9	6.7	U2
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	687.	100.0	

BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS  
 (PER ADDENDUM A FOR IESNA TM-15-07)

BUG RATING: B0 U2 G1



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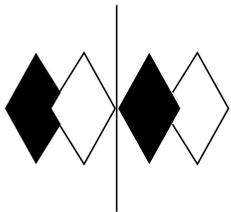
DATE: 02/01/11

## CANDELA TABULATION

	LATERAL ANGLE										
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0
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	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
155.0	7.	7.	7.	7.	8.	8.	7.	7.	7.	7.	7.
145.0	8.	8.	9.	9.	9.	9.	9.	9.	9.	8.	8.
135.0	9.	10.	10.	10.	10.	11.	10.	10.	10.	9.	9.
125.0	9.	9.	10.	10.	10.	10.	10.	10.	9.	9.	8.
115.0	8.	8.	9.	9.	9.	9.	9.	9.	9.	8.	7.
105.0	9.	10.	11.	12.	12.	11.	11.	11.	10.	9.	8.
95.0	11.	12.	15.	15.	15.	15.	15.	16.	15.	13.	11.
92.5	11.	13.	15.	16.	16.	15.	16.	17.	16.	13.	11.
90.0	11.	13.	15.	16.	16.	16.	17.	17.	17.	14.	11.
87.5	13.	15.	18.	19.	19.	19.	19.	20.	19.	16.	13.
85.0	15.	17.	20.	22.	22.	21.	22.	22.	22.	18.	15.
V 82.5	17.	20.	23.	24.	25.	24.	24.	25.	24.	20.	17.
E 80.0	19.	22.	26.	28.	28.	27.	28.	28.	28.	23.	19.
R 77.5	22.	26.	31.	32.	33.	32.	33.	33.	33.	27.	23.
T 75.0	26.	31.	36.	38.	40.	39.	39.	39.	39.	32.	27.
I 72.5	31.	35.	42.	45.	46.	45.	44.	44.	45.	37.	32.
C 70.0	36.	41.	49.	53.	54.	52.	51.	51.	52.	43.	37.
A 67.5	43.	49.	58.	62.	64.	62.	61.	60.	60.	50.	44.
L 65.0	49.	56.	67.	71.	74.	72.	70.	69.	69.	57.	50.
62.5	56.	63.	78.	84.	87.	85.	84.	83.	81.	66.	58.
A 60.0	63.	71.	88.	96.	100.	99.	98.	98.	94.	74.	65.
N 57.5	68.	75.	93.	102.	106.	108.	108.	108.	104.	80.	70.
G 55.0	73.	82.	102.	110.	114.	117.	118.	118.	115.	88.	76.
L 52.5	80.	91.	114.	121.	126.	130.	132.	134.	133.	99.	83.
E 50.0	89.	102.	131.	139.	144.	150.	152.	157.	158.	112.	91.
47.5	102.	119.	155.	164.	170.	175.	177.	183.	185.	124.	98.
45.0	113.	132.	174.	182.	187.	192.	193.	197.	201.	130.	99.
42.5	117.	139.	183.	188.	190.	191.	188.	191.	193.	124.	96.
40.0	115.	134.	175.	178.	176.	171.	165.	166.	165.	109.	89.
37.5	115.	132.	170.	175.	172.	165.	160.	162.	162.	108.	90.
35.0	133.	155.	203.	213.	208.	201.	194.	196.	198.	124.	97.
30.0	147.	177.	230.	231.	239.	235.	230.	226.	220.	130.	98.
25.0	115.	130.	150.	149.	156.	159.	156.	159.	163.	126.	107.
20.0	106.	117.	135.	135.	131.	133.	140.	150.	166.	120.	98.
15.0	182.	207.	271.	275.	284.	280.	279.	281.	296.	181.	139.
12.5<<	224.	255.	354.	357.	342.	315.	294.	284.	265.	174.	147.
10.0	163.	172.	208.	216.	211.	205.	203.	204.	188.	142.	131.
5.0	192.	192.	193.	195.	198.	202.	204.	202.	200.	198.	197.
0.0	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.

||  
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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REPORT NUMBER: ITL67250  
DATE: 02/09/11

Page 1 of 3

PREPARED FOR: RAB LIGHTING, INC.  
CATALOG NUMBER: VXLED13GL100GD100DG - VXBRL13GL100GD100DG

LUMINAIRE: CAST DIFFUSE METAL HOUSING, ONE CIRCUIT BOARD WITH ONE LED, INTERIOR FROSTED HEMISPHERICAL GLASS INTERIOR LENS, CLEAR CYLINDRICAL GLASS EXTERIOR LENS, CAST DIFFUSE METAL GUARD SURROUNDING LENS.

LAMPS: ONE 13-WATT WHITE MULTI-CHIP LIGHT EMITTING DIODE (LED) WITH LEDS ARRANGED IN AN ARRAY OF THREE LINEAR ROWS, VERTICAL BASE-UP POSITION.

DRIVER: RAB LIGHTING RD12-24-A0720

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER.

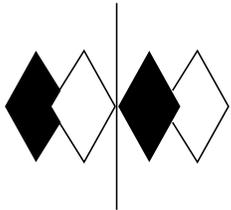
INSTRUMENTS: Associated Power Technologies APT6040 AC Power Source  
Yokogawa WT210 Digital Power Meter  
Ocean Optics QE65000 Spectroradiometer  
ITL 2.0 Meter Diameter Integrating Sphere, 4π Geometry

OBJECT OF TEST: Measure the Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRI), Chromaticity Coordinates (x,y), ANSI C78.377 Duv, and electrical data including Power Factor (PF) and Off-State Power to the luminaire.

PROCEDURE: The luminaire was provided by the customer and had an unknown number of burn hours. The luminaire was mounted inside the integrating sphere in a vertical base-up position (LEDs facing down). The luminaire was allowed to stabilize at 120 VAC input. After stabilization occurred, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRI), Chromaticity Coordinates (x,y), ANSI C78.377 Duv, and electrical data including Power Factor (PF) and Off-State Power were measured with the luminaire operating in the integrating sphere. In order to measure mean performance, multiple data sets were recorded and averaged. Readings were taken with the luminaire operating at 120 VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology. Off-State Power is reported with no voltage applied to the luminaire.

RESULTS: (continued subsequent pages)

Checked	..... <i>N White</i> .....
Approved	..... <i>N Gully</i> .....



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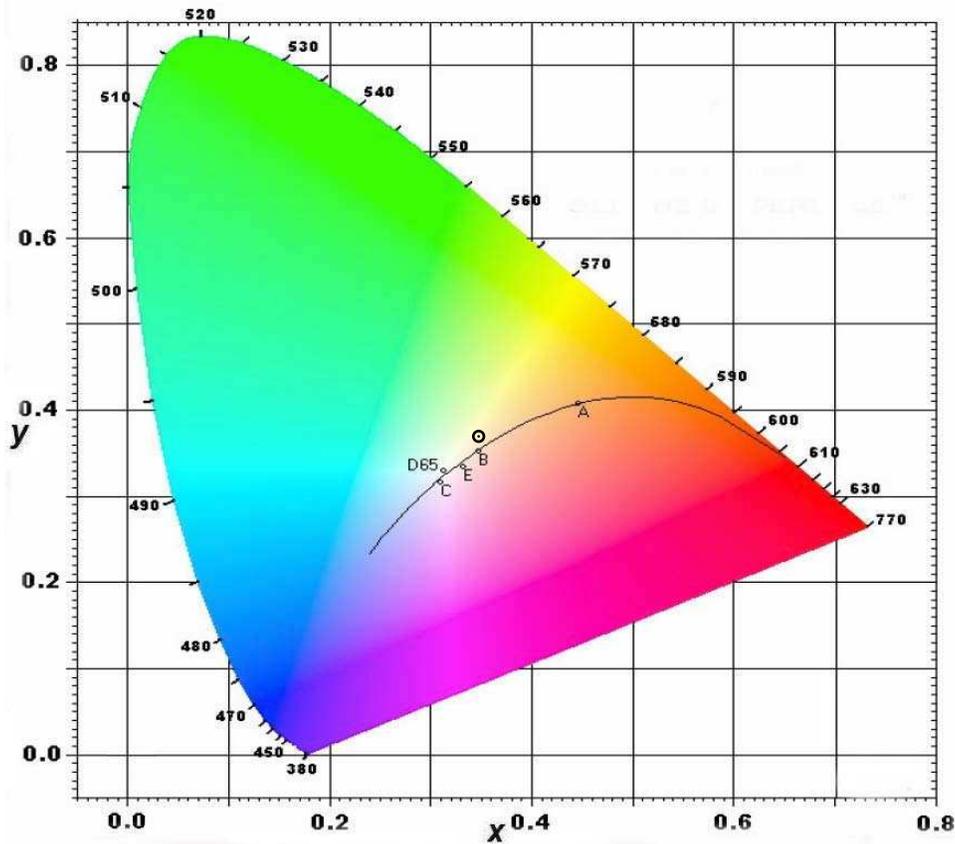
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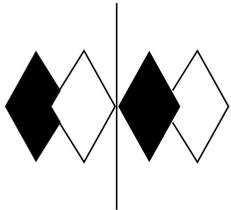
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RESULTS:

## CIE Chromaticity Diagram



SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3473
Chromaticity Ordinate y	0.3702
Correlated Color Temp CCT (K)	4982
Color Rendering Index (CRIa)	65
Color Rendering Index 9 (Strong Red)	-46
Total Radiant Flux (milliWatts)	X.X
ANSI C78.377-2008 Duv	0.008
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (mA AC)	134
Input Power (Watts)	15.0
Input Power Factor (%)	93.3
Off-State Power (Watts)	0.0



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Page 3 of 3

PREPARED FOR: RAB LIGHTING, INC.

CATALOG NUMBER: VXLED13GL100GD100DG - VXBRL13GL100GD100DG

## RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.092	515	7.397	650	4.097
385	0.098	520	8.616	655	3.691
390	0.134	525	9.730	660	3.323
395	0.196	530	10.584	665	2.981
400	0.306	535	11.117	670	2.669
405	0.530	540	11.529	675	2.372
410	0.936	545	11.793	680	2.119
415	1.710	550	11.949	685	1.894
420	3.179	555	12.010	690	1.680
425	5.576	560	11.996	695	1.491
430	8.604	565	11.886	700	1.318
435	12.242	570	11.700	705	1.164
440	15.838	575	11.431	710	1.026
445	16.051	580	11.106	715	0.905
450	11.461	585	10.734	720	0.796
455	6.811	590	10.314	725	0.703
460	4.232	595	9.853	730	0.611
465	2.694	600	9.349	735	0.537
470	1.765	605	8.837	740	0.473
475	1.326	610	8.265	745	0.409
480	1.164	615	7.714	750	0.366
485	1.231	620	7.151	755	0.323
490	1.568	625	6.602	760	0.282
495	2.234	630	6.050	765	0.246
500	3.243	635	5.533	770	0.218
505	4.522	640	5.025	775	0.192
510	5.948	645	4.530	780	0.169

