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THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

NVLAP
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 12 foot mounting height.

REPORT NUMBER: ITL68253

ISSUE DATE: 05/13/11 PAGE: 1 OF 6

PREPARED FOR: RAB LIGHTING, INC.

CATALOG NUMBER: CLED2X13N / PLED2X13N

LUMINAIRE: ONE LUMINAIRE CONSISTING OF TWO OPPOSING LIGHT HEADS, EACH LIGHT HEAD CONSISTING OF: CAST METAL HOUSING, ONE CIRCUIT BOARD WITH ONE LED, FORMED SEMI-SPECULAR METAL REFLECTOR, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL LENS FRAME.

LAMPS: TWO WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs) EACH CONTAINING LEDs ARRANGED IN AN ARRAY OF THREE LINEAR ROWS, TILTED 5-DEGREES FROM VERTICAL BASE-UP POSITION.

LED DRIVER: TWO HIGH PERFECTION TECH. LP1020-24-C0720

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

TOTAL INPUT WATTS = 30.2 AT 120.0 VOLTS

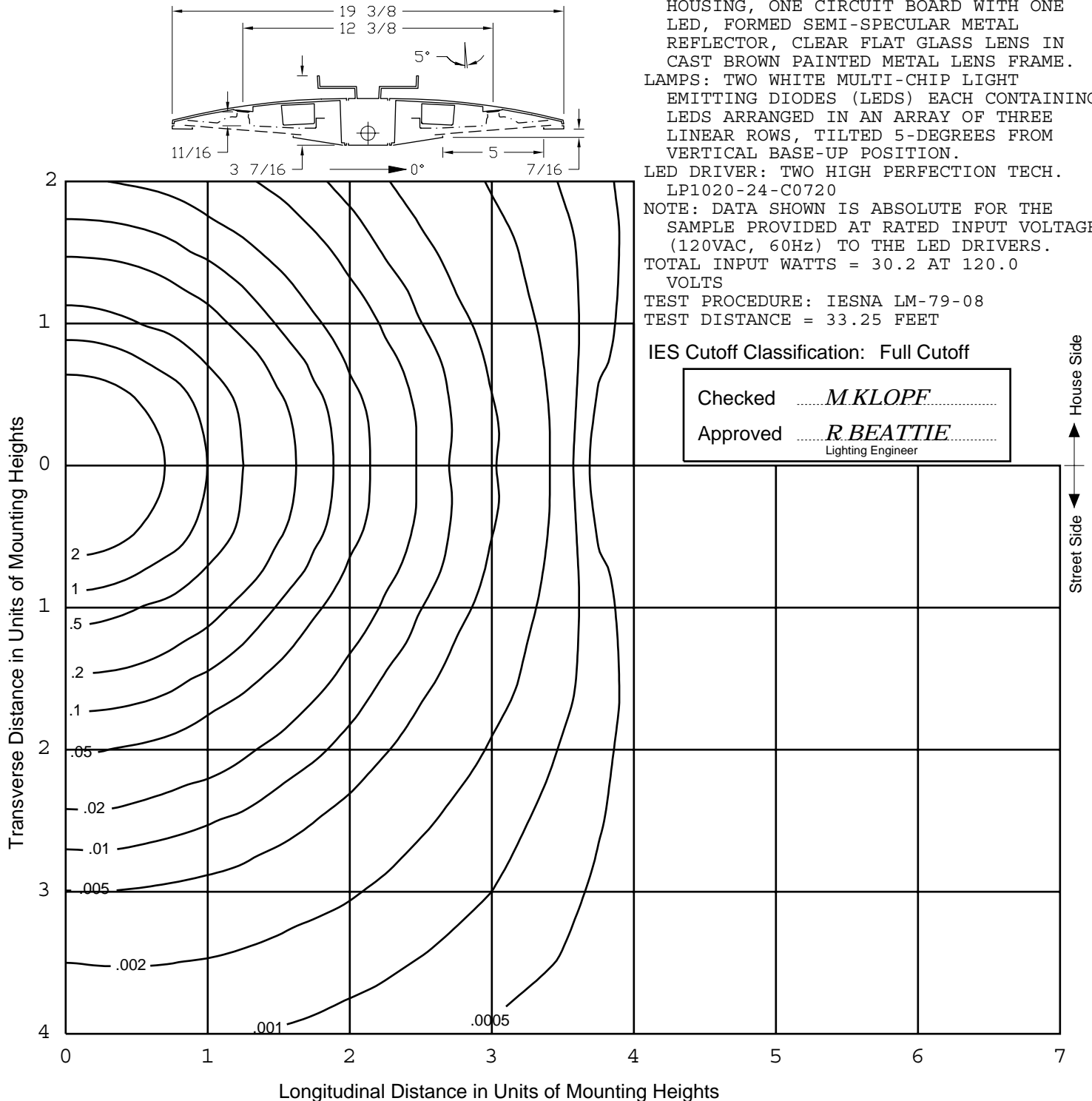
TEST PROCEDURE: IESNA LM-79-08

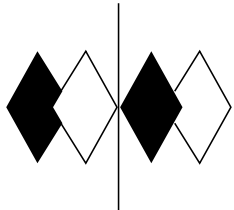
TEST DISTANCE = 33.25 FEET

IES Cutoff Classification: Full Cutoff

Checked *M.KLOPF*

Approved *R.BEATTIE*
Lighting Engineer





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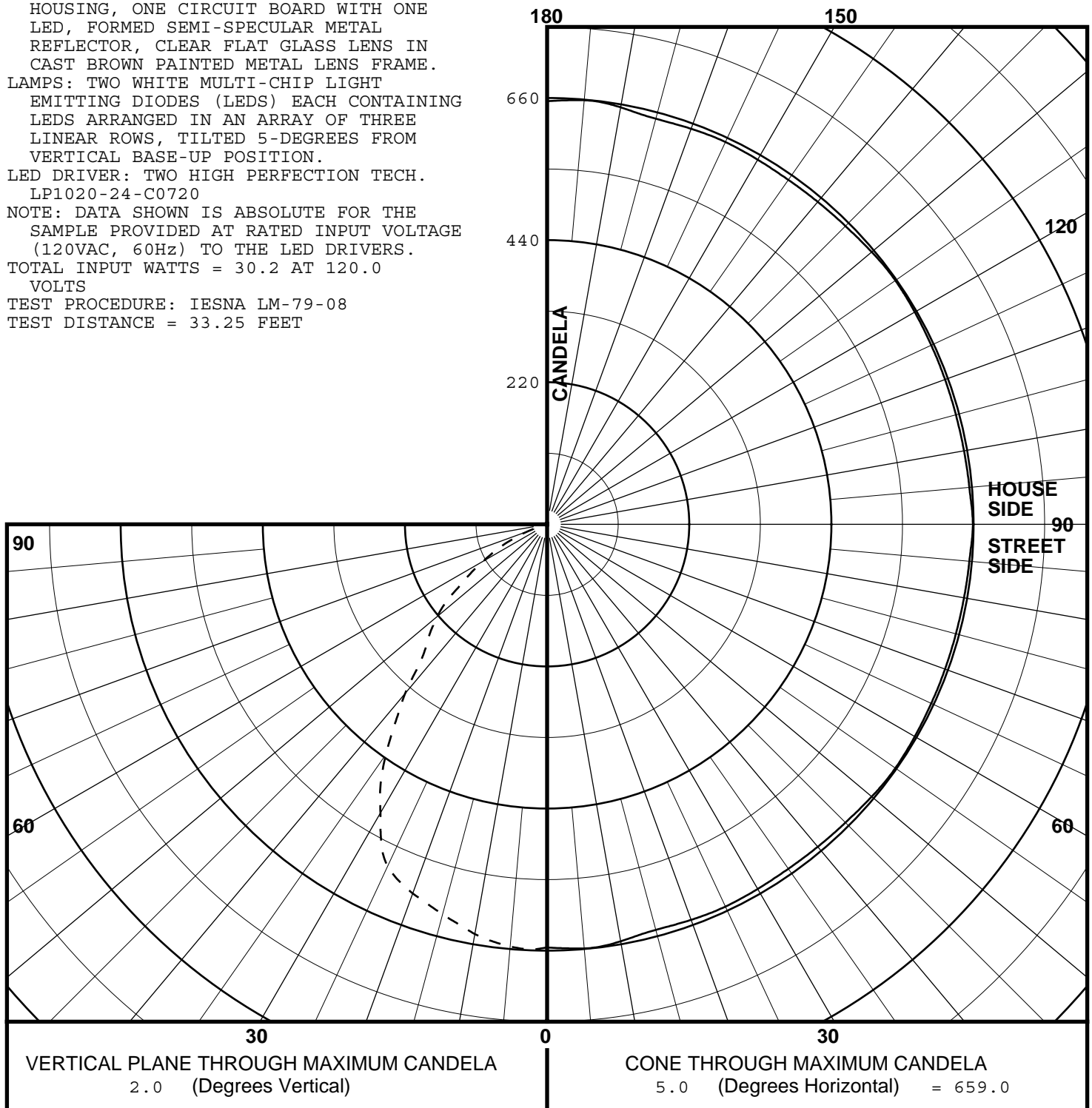
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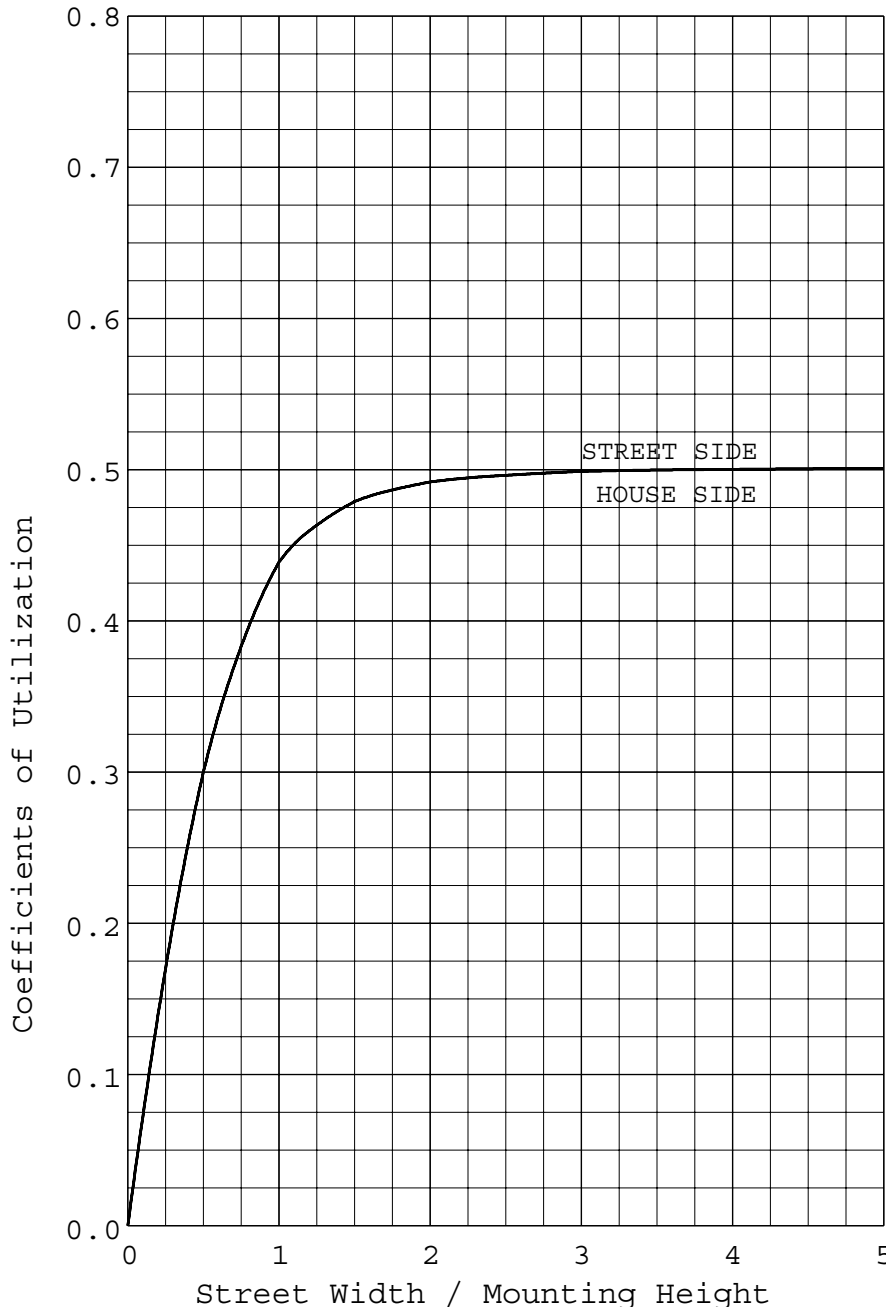
MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA



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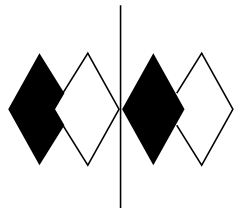
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	670	50.0
DOWNWARD HOUSE SIDE	670	50.0
DOWNWARD TOTAL	1340	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	1340	100.0
EFFICACY = 44.4 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.



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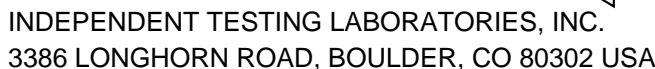
FLUX DISTRIBUTION BY SOLID ANGLE

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

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	670.	50.0	
FL (0- 30)	252.4	18.8	
FM (30- 60)	371.5	27.7	
FH (60- 80)	45.8	3.4	G0
FVH(80- 90)	0.5	0.0	U0 G0
BACK LIGHT	670.	50.0	
BL (0- 30)	252.4	18.8	B1
BM (30- 60)	371.5	27.7	B1
BH (60- 80)	45.8	3.4	B0 G0
BVH(80- 90)	0.5	0.0	U0 G0
UPLIGHT	0.	0.0	
UL (90-100)	0.0	0.0	U0
UH (100-180)	0.0	0.0	U0
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	1340.	100.0	

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

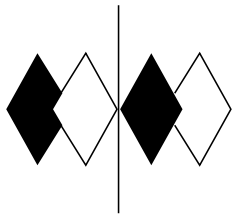
BUG RATING: B1 U0 G0



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CANDELA TABULATION

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



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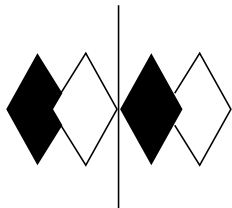
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ADDRESS: 170 LUDLOW AVE
NORTHVALE, NJ 07647

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DATE: 05/16/11

PREPARED FOR: RAB LIGHTING, INC.

Page 1 of 3

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NORTHVALE, NJ 07647

CATALOG NUMBER: CLED2X13N / PLED2X13N

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DRIVERS: TWO HIGH PERFECTION TECH. LP1020-24-C0720

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

INSTRUMENTS: Kikusui PCR500L AC Power Source
Yokogawa WT210 Digital Power Meter
Optronic Laboratories OL770 Spectroradiometer
ITL 1.5 Meter Diameter Integrating Sphere, 4 π Geometry

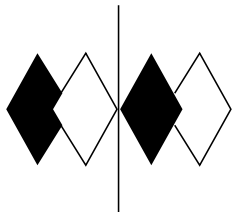
OBJECT OF TEST: Measure the Total Radiant Flux, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI_a,9), Chromaticity Coordinates (x,y;u',v'), ANSI C78.377 Duv, and electrical data including Power Factor (PF), Total Harmonic Distortion (THD), and Off-State 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 horizontal position (see luminaire description for LED orientations). The luminaire was allowed to stabilize at 120VAC input. After stabilization occurred, Total Radiant Flux, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Indices (CRI_a,9), Chromaticity Coordinates (x,y;u',v'), ANSI C78.377 Duv, and electrical data including Power Factor (PF) and Total Harmonic Distortion (THD) 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 120VAC 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)

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Checked	<i>T Berger</i>
Approved	<i>R Bergin</i> Lighting Engineer



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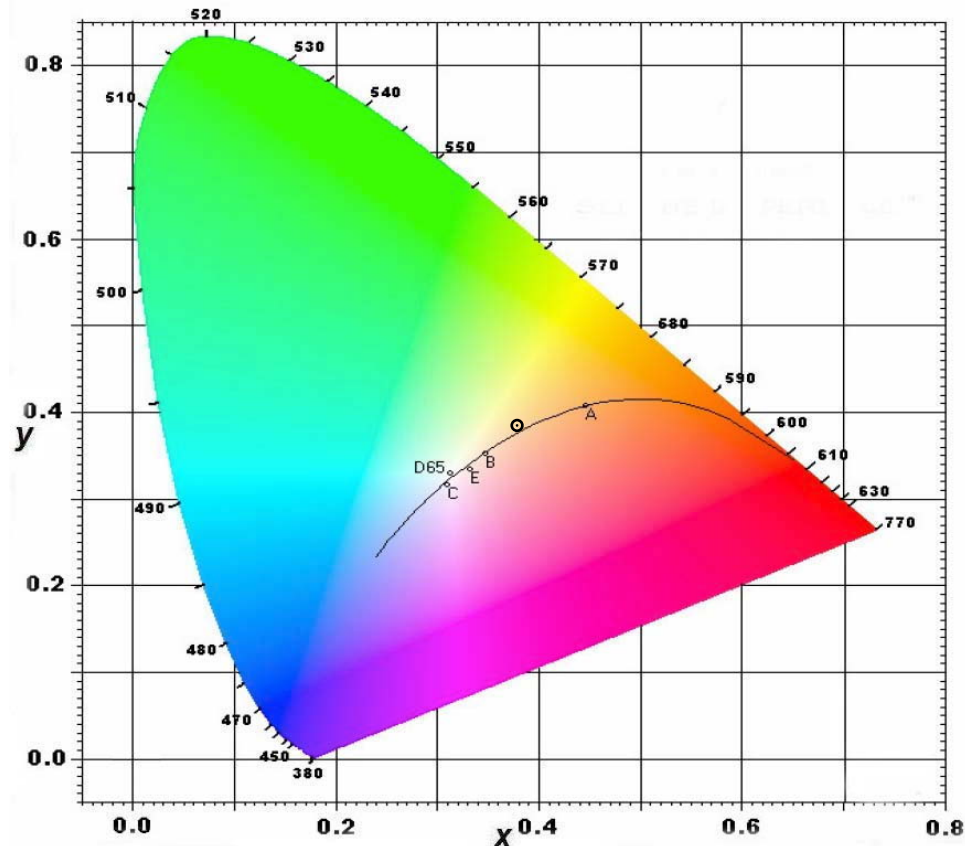
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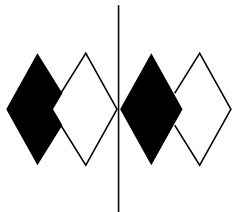
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RESULTS:

CIE Chromaticity Diagram



SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3783
Chromaticity Ordinate y	0.3844
Chromaticity Ordinate u'	0.2207
Chromaticity Ordinate v'	0.5046
Correlated Color Temp CCT (K)	4112
Color Rendering Index (CRI _a)	86
Color Rendering Index 9 (Strong red)	47
Total Radiant Flux (milliWatts)	4469
ANSI C78.377-2008 Duv	0.004
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (mA AC)	259
Input Power (Watts)	30.2
Input Power Factor (%)	97.2
Input Current THD (%)	21.6
Input Voltage THD (%)	0.0
Off State Power (Watts)	0.0



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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.349	515	15.525	650	16.414
385	0.338	520	16.589	655	15.541
390	0.351	525	17.558	660	14.608
395	0.381	530	18.324	665	13.581
400	0.428	535	18.800	670	12.567
405	0.528	540	19.293	675	11.474
410	0.713	545	19.687	680	10.494
415	1.047	550	20.003	685	9.508
420	1.661	555	20.220	690	8.565
425	2.847	560	20.372	695	7.654
430	4.911	565	20.447	700	6.800
435	8.064	570	20.478	705	6.002
440	12.808	575	20.427	710	5.271
445	19.584	580	20.358	715	4.593
450	22.992	585	20.269	720	4.007
455	18.668	590	20.193	725	3.505
460	13.355	595	20.116	730	3.041
465	10.517	600	20.057	735	2.629
470	8.307	605	20.005	740	2.267
475	6.808	610	19.912	745	1.947
480	6.451	615	19.784	750	1.674
485	6.838	620	19.598	755	1.440
490	7.751	625	19.352	760	1.234
495	9.189	630	18.972	765	1.054
500	10.916	635	18.510	770	0.905
505	12.578	640	17.929	775	0.771
510	14.101	645	17.203	780	0.666

