



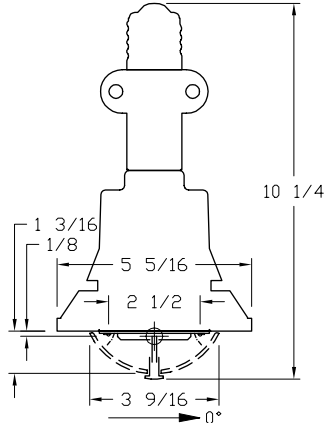
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 THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

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

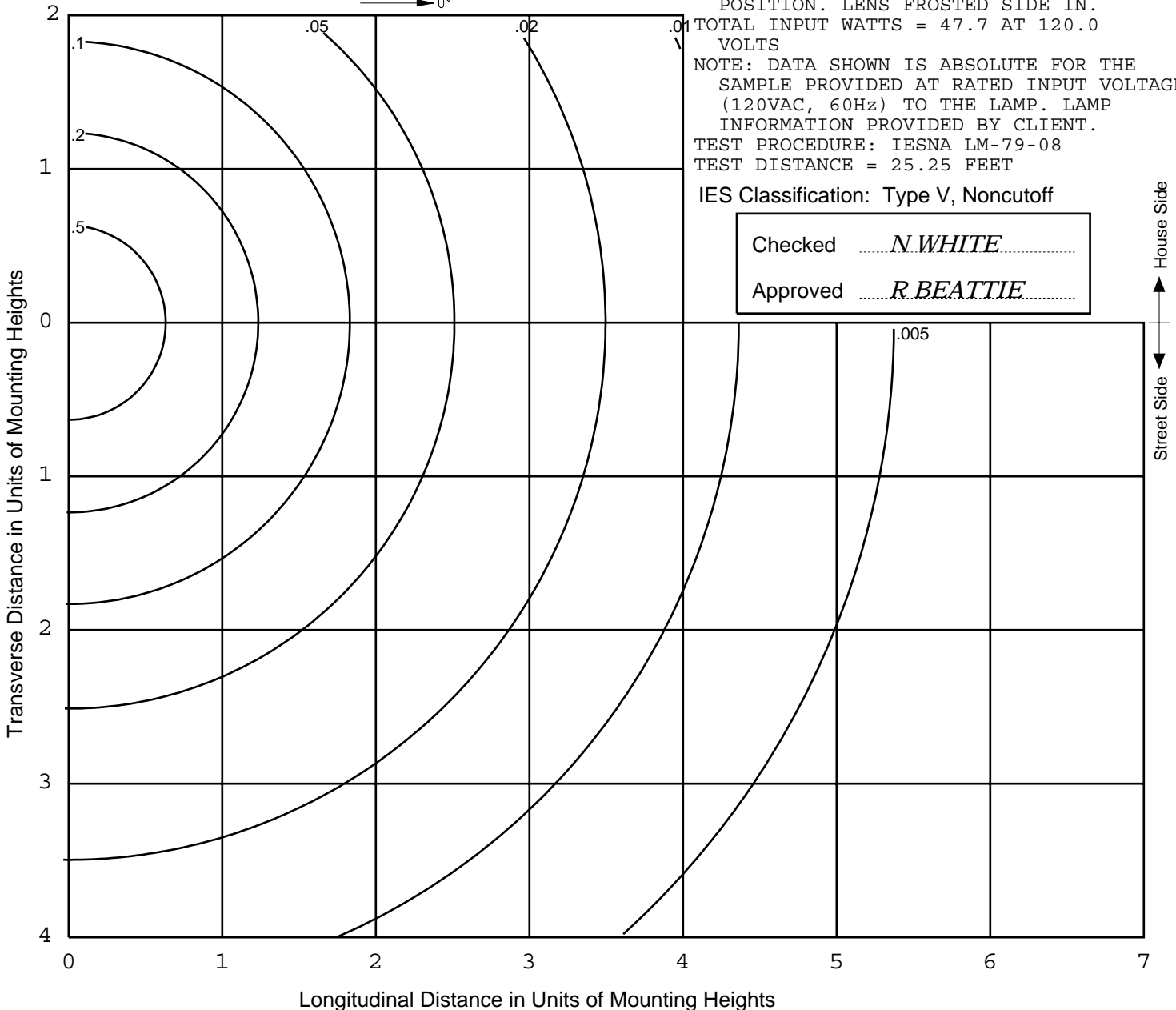
Values based on 25 foot mounting height.

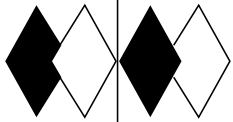


REPORT NUMBER: ITL66963
 DATE: 12/23/10
 PREPARED FOR: EVLUMA
 CATALOG NUMBER: 91635049-2
 LAMP: ONE 50-WATT MOGUL BASE LED LAMP WITH INTEGRAL LED DRIVER, CAST FINNED SEMI-SPECULAR METAL BODY, MOLDED GRAY PLASTIC TOP, MOLDED BLACK PLASTIC NECK, 16 WHITE LIGHT EMITTING DIODES (LEDS) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, FABRICATED SPECULAR SEGMENTED METAL REFLECTOR, FORMED DIFFUSE METAL REFLECTOR MOUNTING RING, FROSTED SEMI-HEMISPHERICAL PLASTIC LENS, MOLDED WHITE PLASTIC LENS RETAINING POST. VERTICAL BASE-UP POSITION. LENS FROSTED SIDE IN.
 TOTAL INPUT WATTS = 47.7 AT 120.0 VOLTS
 NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LAMP. LAMP INFORMATION PROVIDED BY CLIENT.
 TEST PROCEDURE: IESNA LM-79-08
 TEST DISTANCE = 25.25 FEET

IES Classification: Type V, Noncutoff

Checked	<i>N. WHITE</i>
Approved	<i>R. BEATTIE</i>





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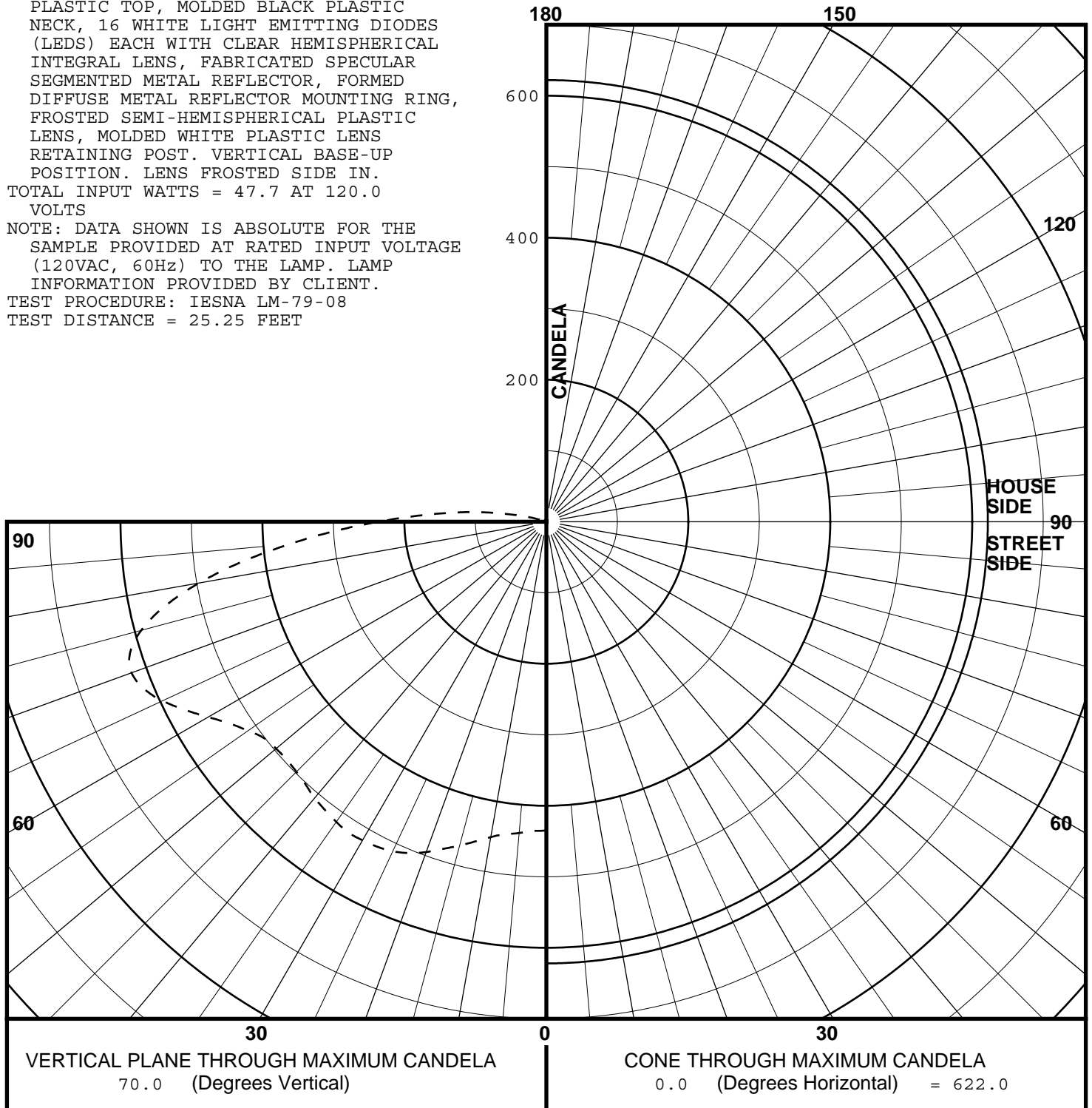
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

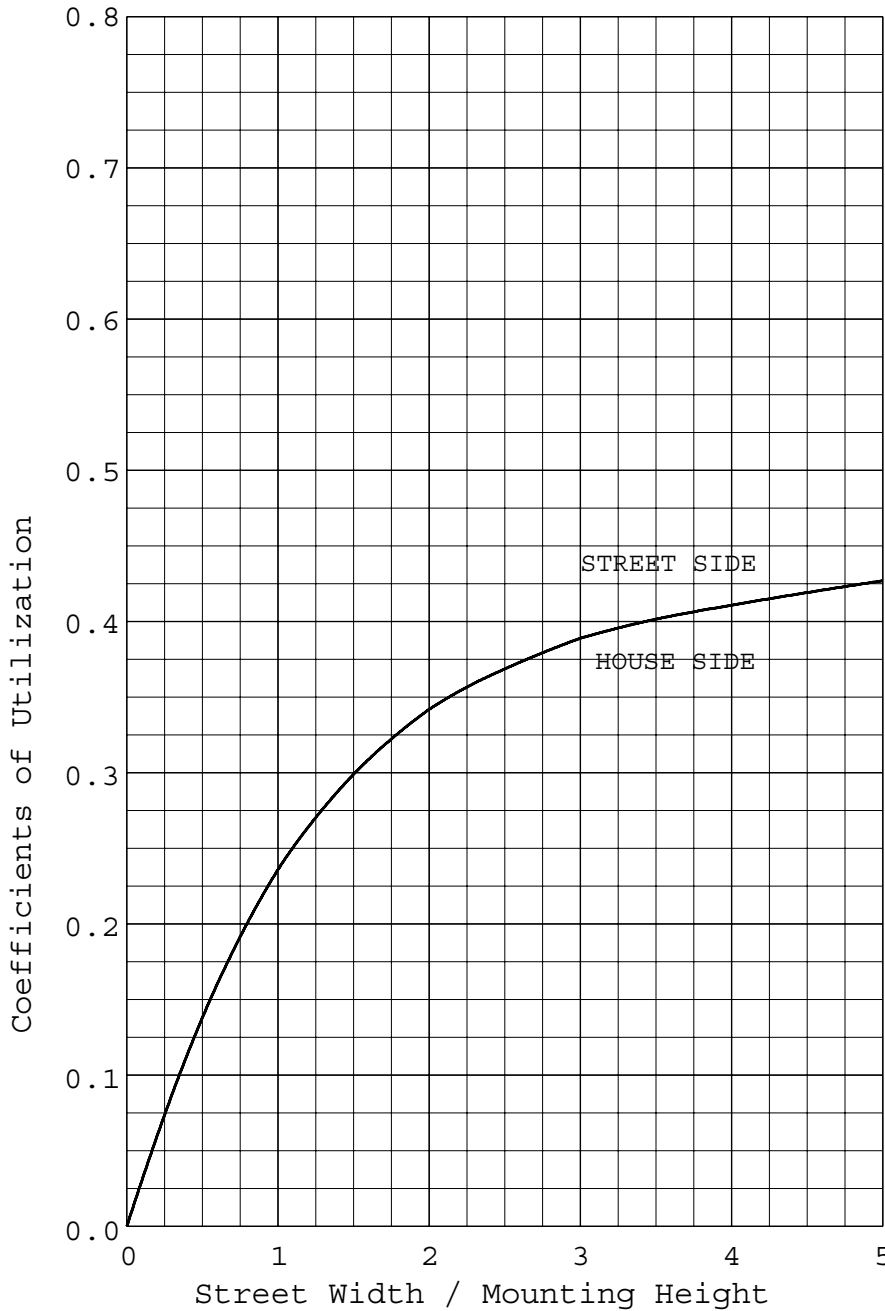




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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	1593	47.0
DOWNWARD HOUSE SIDE	1593	47.0
DOWNWARD TOTAL	3187	93.9
UPWARD STREET SIDE	103	3.0
UPWARD HOUSE SIDE	103	3.0
UPWARD TOTAL	206	6.1
TOTAL FLUX	3393	100.0
EFFICACY = 71.1 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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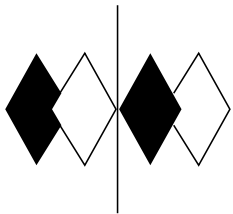
FLUX DISTRIBUTION BY SOLID ANGLE

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

	LUMENS	PERCENT OF FIXTURE	BUG ZONE RATINGS
FORWARD LIGHT	1593.	47.0	
FL (0- 30)	206.6	6.1	
FM (30- 60)	587.1	17.3	
FH (60- 80)	600.5	17.7	G0
FVH(80- 90)	199.2	5.9	U3 G1
BACK LIGHT	1593.	47.0	
BL (0- 30)	206.6	6.1	B1
BM (30- 60)	587.1	17.3	B1
BH (60- 80)	600.5	17.7	B2 G0
BVH(80- 90)	199.2	5.9	U3 G1
UPLIGHT	206.	6.1	
UL (90-100)	159.2	4.7	U3
UH (100-180)	47.0	1.4	U2
TRAPPED LIGHT	0.	0.0	
TOTAL FLUX	3393.	100.0	

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

BUG RATING: B2 U3 G1



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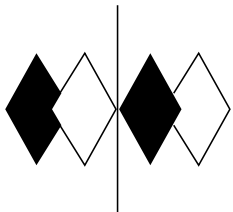
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CANDELA TABULATION

TYPE V

	180.0	0.
	175.0	0.
	165.0	2.
	155.0	4.
	145.0	4.
	135.0	4.
	125.0	4.
	115.0	4.
	105.0	24.
	95.0	141.
	92.5	185.
	90.0	237.
	87.5	298.
	85.0	364.
V	82.5	433.
E	80.0	497.
R	77.5	551.
T	75.0	591.
I	72.5	615.
C	70.0<<	622.
A	67.5	614.
L	65.0	597.
	62.5	574.
A	60.0	550.
N	57.5	529.
G	55.0	513.
L	52.5	501.
E	50.0	497.
	47.5	496.
	45.0	498.
	42.5	502.
	40.0	508.
	37.5	512.
	35.0	516.
	32.5	519.
	30.0	518.
	25.0	512.
	20.0	495.
	15.0	472.
	10.0	451.
	5.0	440.
	0.0	435.

CONE OF MAXIMUM CANDELA



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LAMP: ONE 50-WATT MOGUL BASE LED LAMP WITH INTEGRAL LED DRIVER, CAST FINNED SEMI-SPECULAR METAL BODY, MOLDED GRAY PLASTIC TOP, MOLDED BLACK PLASTIC NECK, 16 WHITE LIGHT EMITTING DIODES (LEDs) EACH WITH CLEAR HEMISPHERICAL INTEGRAL LENS, FABRICATED SPECULAR SEGMENTED METAL REFLECTOR, FORMED DIFFUSE METAL REFLECTOR MOUNTING RING, FROSTED SEMI-HEMISPHERICAL PLASTIC LENS, MOLDED WHITE PLASTIC LENS RETAINING POST. VERTICAL BASE-UP POSITION. LENS FROSTED SIDE IN.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LAMP. LAMP INFORMATION PROVIDED BY CLIENT.

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

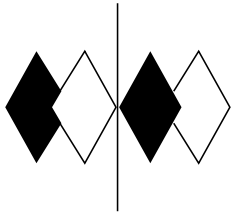
OBJECT OF TEST: Measure the Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRI), Chromaticity Coordinates (x,y), ANSI C78.377 Duv, and electrical data to the lamp.

PROCEDURE: The lamp was provided by the customer and had an unknown number of burn hours. The lamp was mounted inside the integrating sphere in a vertical base-up position (LEDs facing down). The lamp 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 were measured with the lamp 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.

RESULTS:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3887
Chromaticity Ordinate y	0.4043
Correlated Color Temp CCT (K)	3982
Color Rendering Index (CRI)	68
ANSI C78.377-2008 Duv	0.010
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (mA AC)	460
Input Power (Watts)	48.0

Checked	<i>L Brockman</i>
Approved	<i>N Gully</i>



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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.730	515	28.734	650	28.024
385	0.694	520	34.969	655	25.796
390	0.767	525	40.942	660	23.649
395	0.837	530	46.082	665	21.570
400	0.972	535	49.976	670	19.698
405	1.212	540	53.244	675	17.870
410	1.718	545	55.708	680	16.199
415	2.822	550	57.457	685	14.644
420	5.074	555	58.611	690	13.222
425	9.478	560	59.162	695	11.961
430	16.332	565	59.365	700	10.778
435	24.815	570	59.120	705	9.709
440	34.231	575	58.496	710	8.737
445	45.501	580	57.699	715	7.800
450	50.617	585	56.562	720	6.969
455	39.423	590	55.175	725	6.229
460	23.717	595	53.541	730	5.548
465	15.819	600	51.713	735	4.967
470	11.858	605	49.591	740	4.421
475	9.007	610	47.462	745	3.936
480	7.613	615	45.095	750	3.528
485	7.308	620	42.713	755	3.146
490	7.658	625	40.273	760	2.825
495	9.139	630	37.752	765	2.514
500	12.147	635	35.279	770	2.255
505	16.559	640	32.847	775	2.018
510	22.217	645	30.303	780	1.807

