



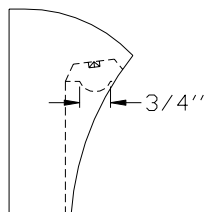
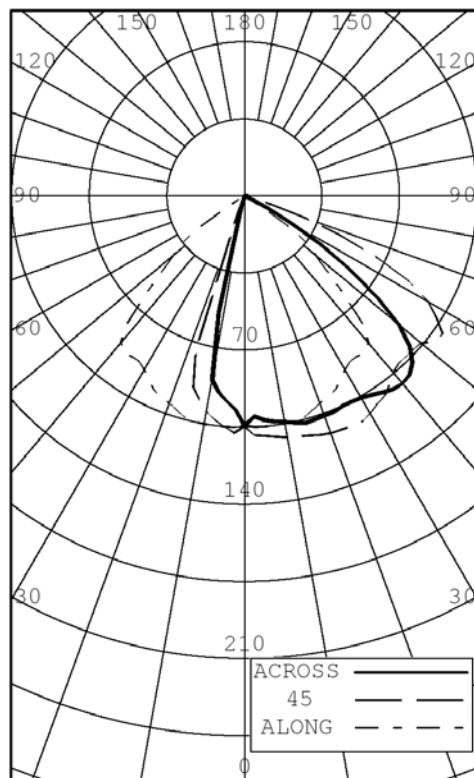
Lighting Sciences

www.lightingsciences.com

Lighting Sciences Inc.
7826 E. Evans Road
Scottsdale, Arizona 85260 USA
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INDEPENDENT TEST LABORATORY REPORT No. 27622

RAB LIGHTING - LED STAIRWAY LUMINAIRE, CAT# SLED5
WITH SPECULAR REFLECTOR AND CLEAR CURVED GLASS LENS
ONE LED ARRAY. LUMINAIRE OUTPUT = 196 LMS.
LUMINAIRE OPERATING AT 120 VAC AND 5.3 WATTS



INTENSITY (CANDLEPOWER)					SUMMARY	OUTPUT LUMENS
ANGLE	ALONG	BEAM	SIDE			
		67.5	45	22.5	ACROSS	
0	104	104	104	104	104	5
5	105	107	109	103	102	
10	105	107	111	106	104	
15	104	109	113	108	107	15
20	100	107	115	108	106	25
25	97	105	115	108	105	
30	91	104	114	108	106	
35	89	102	111	109	109	33
40	87	115	105	110	111	38
45	64	111	103	108	107	
50	42	63	104	100	91	
55	27	44	109	76	58	30
60	2	51	96	39	24	14
65	0	33	66	10	4	
70	0	6	29	2	1	
75	0	1	4	1	1	1
80	0	0	1	1	2	1
85	0	0	1	2	2	
90	0	0	0	1	1	

BOTH SIDES ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	68	34.62
0-40	107	54.56
0-60	180	91.84
0-90	196	100.00
40-90	89	45.44
60-90	16	8.16
90-180	0	0.00
0-180	196	100.00

EFFICACY (LUMENS PER WATT): 36.9

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 1.625 INS
WIDTH: 0.750 INS

LUMINANCE SUMMARY - CD./SQ.M.

BEAM SIDE			
ANGLE	ALONG	45	ACROSS
45	115109	186644	193569
55	59867	242929	128333
65	0	198132	13120
75	0	17369	4009
85	0	13749	22696

CERTIFIED BY:

James E. Wilson III

DATE:
SEP 8, 2010

PREPARED FOR:
RAB LIGHTING
NORTHVALE, NJ

TESTED IN ACCORDANCE WITH IES PROCEDURES.

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BEAM SIDE
INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	67.5	45	22.5	ACROSS	AVERAGE	
0.0	104	104	104	104	104	104	
2.5	105	107	109	103	100	105	
5.0	105	107	109	103	102	106	5
7.5	105	108	110	104	103	107	
10.0	105	107	111	106	104	107	
12.5	105	107	112	107	105	108	
15.0	104	109	113	108	107	109	15
17.5	102	108	114	108	107	109	
20.0	100	107	115	108	106	108	
22.5	99	107	115	109	106	108	
25.0	97	105	115	108	105	107	25
27.5	94	104	115	107	105	107	
30.0	91	104	114	108	106	106	
32.5	89	102	112	108	107	105	
35.0	89	102	111	109	109	105	33
37.5	90	107	108	110	111	106	
40.0	87	115	105	110	111	107	
42.5	79	118	103	109	110	106	
45.0	64	111	103	108	107	102	38
47.5	51	95	103	105	101	95	
50.0	42	63	104	100	91	83	
52.5	38	48	109	91	76	76	
55.0	27	44	109	76	58	68	30
57.5	9	48	103	58	41	58	
60.0	2	51	96	39	24	50	
62.5	1	47	83	22	11	40	
65.0	0	33	66	10	4	28	14
67.5	0	16	47	4	2	17	
70.0	0	6	29	2	1	9	
72.5	0	1	12	1	1	4	
75.0	0	1	4	1	1	2	1
77.5	0	1	1	1	1	1	
80.0	0	0	1	1	2	1	
82.5	0	0	1	2	1	1	
85.0	0	0	1	2	2	1	1
87.5	0	0	1	2	2	1	
90.0	0	0	0	1	1	0	

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BEAM SIDE
AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	ALONG	67.5	45	22.5	ACROSS
0	132724 (38737)	132724 (38737)	132724 (38737)	132724 (38737)	132724 (38737)
30	133637 (39003)	152690 (44564)	167465 (48877)	158575 (46282)	155544 (45398)
40	144438 (42156)	191573 (55913)	173858 (50743)	183212 (53473)	184490 (53846)
45	115109 (33596)	200031 (58382)	186644 (54474)	194090 (56648)	193569 (56496)
50	83099 (24253)	125608 (36660)	205932 (60104)	198349 (57891)	179763 (52466)
55	59867 (17473)	98512 (28752)	242929 (70902)	168957 (49312)	128333 (37456)
60	5087 (1484)	129141 (37691)	243299 (71010)	99816 (29132)	61183 (17857)
65	0 (0)	99383 (29006)	198132 (57827)	29752 (8683)	13120 (3829)
70	0 (0)	20568 (6003)	107037 (31240)	6436 (1878)	3683 (1075)
75	0 (0)	4259 (1243)	17369 (5069)	6387 (1864)	4009 (1170)
80	0 (0)	1867 (545)	7283 (2125)	10991 (3208)	11720 (3420)
85	0 (0)	4463 (1302)	13749 (4012)	35339 (10314)	22696 (6624)

LUMINOUS LENGTH: 1.625 INS
WIDTH: 0.750 INS

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OPPOSITE SIDE TO BEAM
INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	112.5	135	157.5	ACROSS	AVERAGE	
0.0	104	104	104	104	104	104	
2.5	105	107	108	100	97	104	
5.0	105	107	105	97	94	102	5
7.5	105	106	103	94	90	100	
10.0	105	105	99	90	85	97	
12.5	105	104	95	81	54	90	
15.0	104	102	90	20	9	67	10
17.5	102	98	74	8	5	58	
20.0	100	95	16	2	1	41	
22.5	99	91	8	0	0	37	
25.0	97	86	4	0	0	35	8
27.5	94	82	1	0	0	32	
30.0	91	74	0	0	0	30	
32.5	89	51	0	0	0	24	
35.0	89	24	0	0	0	17	6
37.5	90	8	0	0	0	13	
40.0	87	5	0	0	0	12	
42.5	79	3	0	0	0	11	
45.0	64	1	0	0	0	8	3
47.5	51	0	0	0	0	6	
50.0	42	0	0	0	0	5	
52.5	38	0	0	0	0	5	
55.0	27	0	0	0	0	3	1
57.5	9	0	0	0	0	1	
60.0	2	0	0	0	0	0	
62.5	1	0	0	0	0	0	
65.0	0	0	0	0	0	0	0
67.5	0	0	0	0	0	0	
70.0	0	0	0	0	0	0	
72.5	0	0	0	0	0	0	
75.0	0	0	0	0	0	0	0
77.5	0	0	0	0	0	0	
80.0	0	0	0	0	0	0	
82.5	0	0	0	0	0	0	
85.0	0	0	0	0	0	0	0
87.5	0	0	0	0	0	0	
90.0	0	0	0	0	0	0	

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COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																									
0	1.221	1.221	1.221	1.22	1.191	1.191	1.191	1.19	1.161	1.161	1.161	1.16	1.111	1.111	1.11	1.061	1.061	1.06	1.021	1.021	1.02	1.00			
1	1.141	1.101	1.071	1.04	1.121	1.081	1.051	1.02	1.091	1.061	1.031	1.00	1.020	0.990	0.97	0.980	0.960	0.94	0.940	0.930	0.91	0.90			
2	1.061	1.000	0.940	0.89	1.040	0.980	0.930	0.88	1.020	0.960	0.910	0.87	0.920	0.880	0.85	0.890	0.860	0.83	0.870	0.840	0.81	0.80			
3	0.980	0.890	0.830	0.77	0.960	0.880	0.820	0.76	0.940	0.870	0.810	0.76	0.840	0.790	0.75	0.810	0.770	0.73	0.790	0.750	0.72	0.70			
4	0.910	0.810	0.730	0.67	0.890	0.790	0.720	0.67	0.870	0.780	0.720	0.66	0.760	0.700	0.65	0.740	0.690	0.65	0.720	0.670	0.64	0.62			
5	0.840	0.730	0.640	0.58	0.820	0.710	0.630	0.58	0.800	0.700	0.630	0.57	0.680	0.620	0.57	0.660	0.610	0.56	0.650	0.600	0.56	0.54			
6	0.780	0.650	0.570	0.51	0.760	0.640	0.560	0.51	0.740	0.630	0.560	0.50	0.620	0.550	0.50	0.600	0.540	0.50	0.590	0.530	0.49	0.47			
7	0.720	0.590	0.510	0.45	0.700	0.580	0.500	0.45	0.690	0.570	0.500	0.44	0.560	0.490	0.44	0.540	0.480	0.44	0.530	0.480	0.43	0.42			
8	0.660	0.530	0.450	0.39	0.650	0.520	0.440	0.39	0.630	0.510	0.440	0.39	0.500	0.430	0.39	0.490	0.430	0.38	0.480	0.420	0.38	0.36			
9	0.610	0.480	0.400	0.34	0.600	0.470	0.390	0.34	0.580	0.470	0.390	0.34	0.450	0.380	0.34	0.440	0.380	0.33	0.430	0.380	0.33	0.32			
10	0.570	0.440	0.350	0.30	0.550	0.430	0.350	0.30	0.540	0.420	0.350	0.30	0.410	0.350	0.30	0.400	0.340	0.30	0.400	0.340	0.30	0.28			

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LUMINAIRE INPUT WATTS 5.3

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

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ELECTRICAL MEASUREMENTS

INPUT VOLTAGE:	120.0	VOLTS AC
INPUT CURRENT:	0.095	AMPS
INPUT POWER:	5.3	WATTS
POWER FACTOR:	46.5	PERCENT
TOTAL HARMONIC DISTORTION:	86.32	PERCENT
OFF STATE POWER:	0.00	WATTS

LIGHT OUTPUT

LUMENS:	196	lm
EFFICACY:	36.9	lm/W

SPECTRAL MEASUREMENTS

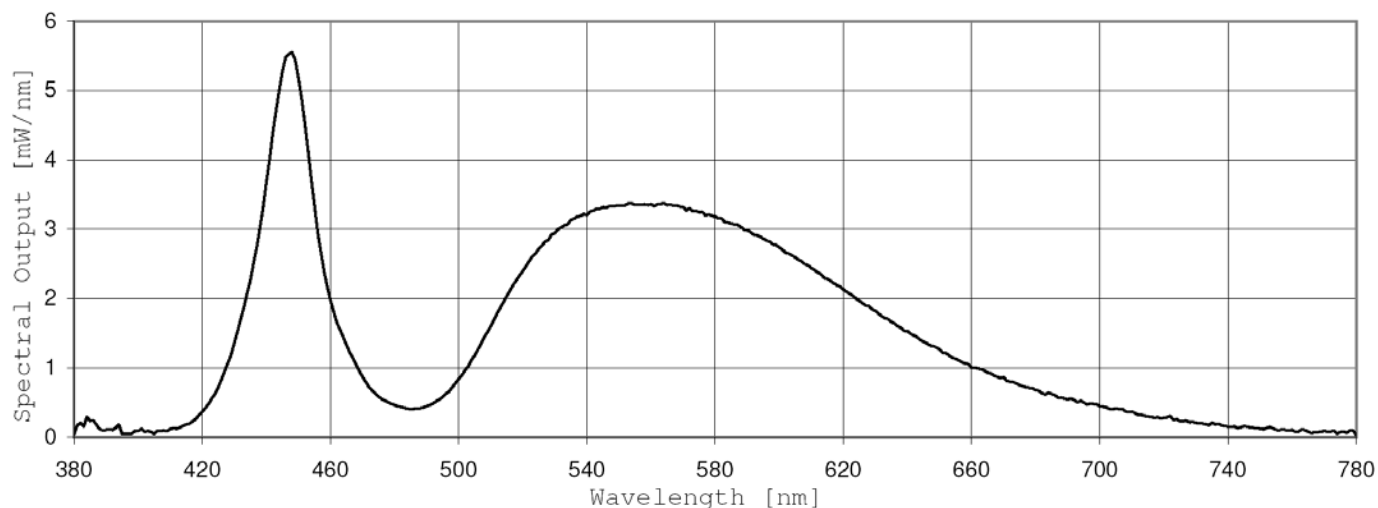
X:	0.3442	
y:	0.3591	
u/u':	0.2080	
v:	0.3254	
v':	0.4881	
Duv:	0.0042	
CRI (R _a):	68.5	
CRI (R _g):	-31.0	
CCT:	5054	K
RADIANT FLUX:	587	mW

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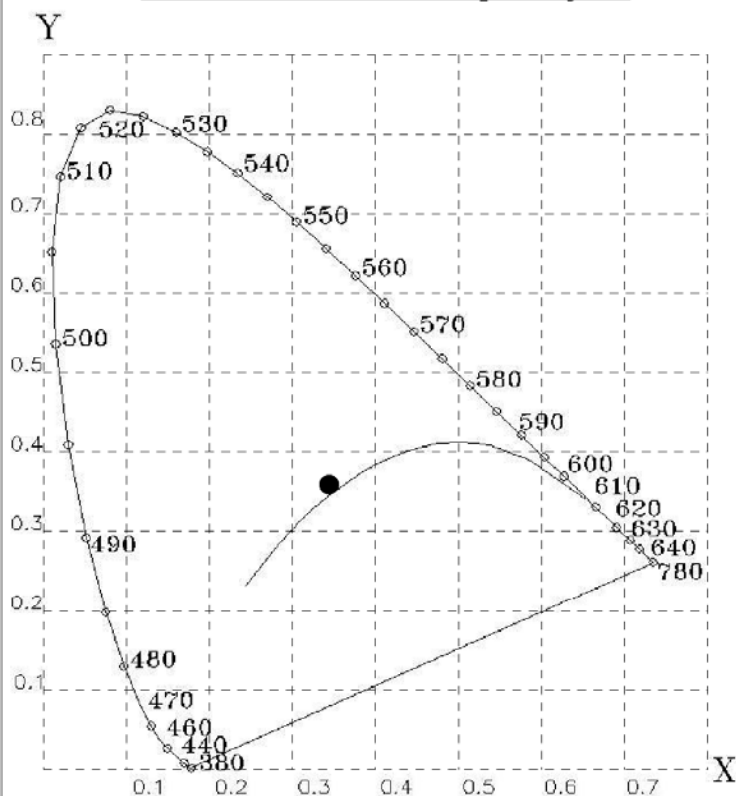
Spectral Power Distribution



Tabulated Spectral Power Distribution

Wavelength [nm]	[mW/nm]	Wavelength [nm]	[mW/nm]
380	0.04037	590	2.98585
390	0.10591	600	2.73663
400	0.08913	610	2.43674
410	0.11744	620	2.13247
420	0.36805	630	1.82174
430	1.36438	640	1.53181
440	3.68717	650	1.26721
450	5.17774	660	1.00087
460	1.97536	670	0.86596
470	0.87067	680	0.67791
480	0.46522	690	0.54544
490	0.44862	700	0.44565
500	0.84027	710	0.36858
510	1.60276	720	0.27980
520	2.39811	730	0.20779
530	2.94705	740	0.15152
540	3.20482	750	0.12443
550	3.34568	760	0.10626
560	3.36351	770	0.09123
570	3.32279	780	0.02980
580	3.18053		

CIE 1931 Chromaticity Diagram



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SIDE VIEW



LUMINOUS OPENING



All testing was conducted in accordance with LM-79-08,

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products as published by the Illuminating Engineering Society of North America (IESNA).

The condition of the item tested was new. Stabilization time before testing exceeded 16 hours.

The test results (luminous distribution and flux) were obtained by using a Lighting Sciences series 6000 Type C Moving Mirror Goniophotometer

- The photometric reference standard used is a set of three incandescent luminous intensity standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.

The test results (colorimetric and luminous flux) were obtained by using a Lighting Sciences model 4000 Integrating Sphere of either 1 or 2 meters diameter, having an internal reflectance exceeding 0.80. 4π geometry was used. Correction factors were applied for spectral mismatch and self-absorption. The spectroradiometer employed was a LSC model 500E having a bandwidth of .84.

- The photometric reference standard used is a set of three incandescent luminous flux standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.
- The colorimetric reference standard used is an incandescent spectral standard lamp calibrated and traceable to the U.S. National Institute of Standards and Technology.

Power measurements were obtained with a Yokogawa WT210 power analyzer.

Ambient temperature during testing was $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured using an Omega model DP460.

Calibration certificates are on file at the laboratories of Lighting Sciences Inc.