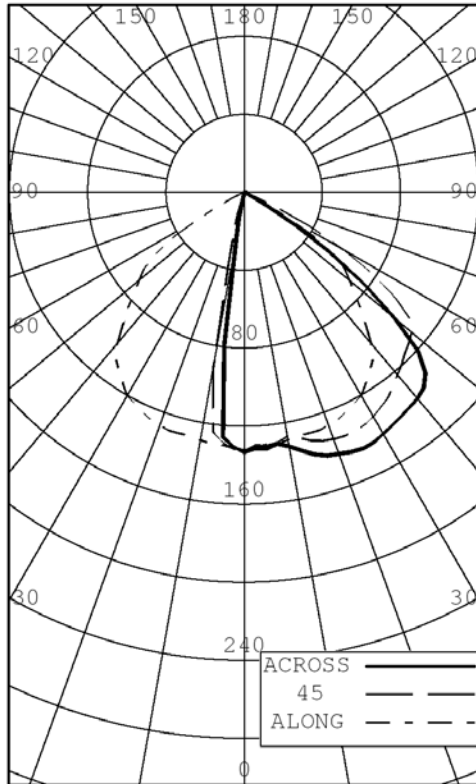




INDEPENDENT TEST LABORATORY REPORT No. 27624

RAB LIGHTING - LED STAIRWAY LUMINAIRE, CAT# SLEDR5
WITH SPECULAR REFLECTOR AND CLEAR CURVED GLASS LENS
ONE LED ARRAY. LUMINAIRE OUTPUT = 213 LMS.
LUMINAIRE OPERATING AT 120 VAC AND 5.2 WATTS



ANGLE	INTENSITY (CANDLEPOWER) SUMMARY				OUTPUT LUMENS
	ALONG	BEAM SIDE		ACROSS	
0	133	67.5	45	22.5	133
5	130	133	133	133	133
10	129	133	131	132	132
15	128	134	127	133	132
20	127	129	132	139	139
25	124	130	135	146	145
30	120	131	133	146	143
35	112	127	128	144	140
40	101	120	122	140	138
45	84	111	116	133	131
50	70	102	116	108	101
55	56	96	112	108	101
60	25	83	95	63	53
65	4	63	58	19	13
70	0	35	19	3	3
75	0	6	3	1	2
80	0	1	1	1	2
85	0	1	1	1	1
90	0	0	0	0	0

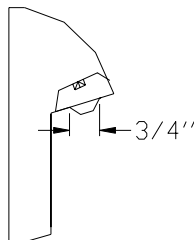
BOTH SIDES ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	74	35.03
0-40	120	56.25
0-60	203	95.30
0-90	213	100.00
40-90	93	43.75
60-90	10	4.70
90-180	0	0.00
0-180	213	100.00

EFFICACY (LUMENS PER WATT) : 40.9

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 1.625 INS
WIDTH: 0.750 INS



LUMINANCE SUMMARY - CD./SQ.M.

ANGLE	BEAM SIDE		
	ALONG	45	ACROSS
45	151081	210261	236355
55	124169	210365	117874
65	12037	55995	7749
75	0	6498	9271
85	0	10033	10045

CERTIFIED BY:

Jared E. Walker III

DATE:
SEP 21, 2010

PREPARED FOR:

RAB LIGHTING
NORTHVALE, NJ

TESTED IN ACCORDANCE WITH IES PROCEDURES.

LIGHTING SCIENCES, INC.
7826 E. EVANS RD.
SCOTTSDALE, AZ, USA 85260

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BEAM SIDE
INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE				ACROSS	AVERAGE	OUTPUT LUMENS
	ALONG	67.5	45	22.5			
0.0	133	133	133	133	133	133	
2.5	131	134	130	131	131	132	
5.0	130	133	131	132	132	132	6
7.5	130	134	129	130	130	131	
10.0	129	134	127	133	132	131	
12.5	128	132	129	136	136	132	
15.0	128	129	132	139	139	134	19
17.5	128	129	134	142	142	135	
20.0	127	130	135	143	143	136	
22.5	126	131	135	145	144	136	
25.0	124	131	135	146	145	137	31
27.5	122	129	134	146	144	136	
30.0	120	127	133	146	143	134	
32.5	116	124	130	145	141	132	
35.0	112	120	128	144	140	130	40
37.5	108	115	125	142	139	126	
40.0	101	111	122	140	138	123	
42.5	92	105	119	137	136	119	
45.0	84	102	116	133	131	115	44
47.5	77	98	114	125	121	109	
50.0	70	96	112	108	101	100	
52.5	65	90	107	86	77	88	
55.0	56	83	95	63	53	74	32
57.5	43	74	78	40	31	57	
60.0	25	63	58	19	13	40	
62.5	11	52	38	8	5	27	
65.0	4	35	19	3	3	15	9
67.5	1	20	8	2	2	8	
70.0	0	6	3	1	2	3	
72.5	0	2	2	1	2	1	
75.0	0	1	1	1	2	1	1
77.5	0	0	1	1	1	1	
80.0	0	0	1	1	1	1	
82.5	0	0	1	1	1	1	
85.0	0	0	1	1	1	0	0
87.5	0	0	1	0	1	0	
90.0	0	0	0	0	0	0	

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 WITH SPECULAR REFLECTOR AND CLEAR CURVED GLASS LENS
 ONE LED ARRAY. LUMINAIRE OUTPUT = 213 LMS.
 LUMINAIRE OPERATING AT 120 VAC AND 5.2 WATTS

BEAM SIDE
 AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	ALONG	67.5	45	22.5	ACROSS
0	169364 (49431)	169364 (49431)	169364 (49431)	169364 (49431)	169364 (49431)
30	176224 (51433)	186879 (54543)	195401 (57030)	215633 (62935)	209817 (61238)
40	167680 (48940)	184470 (53840)	202729 (59169)	233233 (68072)	229400 (66954)
45	151081 (44095)	183152 (53455)	210261 (61367)	240321 (70141)	236355 (68983)
50	138499 (40423)	189925 (55432)	220910 (64476)	214072 (62480)	198911 (58055)
55	124169 (36240)	185006 (53996)	210365 (61398)	139470 (40706)	117874 (34403)
60	63589 (18559)	161946 (47266)	148424 (43319)	48580 (14178)	32820 (9579)
65	12037 (3513)	105963 (30927)	55995 (16343)	8818 (2573)	7749 (2261)
70	0 (0)	23601 (6888)	11177 (3262)	5395 (1574)	6044 (1764)
75	0 (0)	3758 (1097)	6498 (1896)	6763 (1973)	9271 (2705)
80	0 (0)	2801 (817)	8216 (2398)	7824 (2283)	9115 (2660)
85	0 (0)	0 (0)	10033 (2928)	7439 (2171)	10045 (2932)

LUMINOUS LENGTH: 1.625 INS
 WIDTH: 0.750 INS

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 ONE LED ARRAY. LUMINAIRE OUTPUT = 213 LMS.
 LUMINAIRE OPERATING AT 120 VAC AND 5.2 WATTS

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

ANGLE	PLANE				ACROSS	AVERAGE	OUTPUT LUMENS
	ALONG	112.5	135	157.5			
0.0	133	133	133	133	133	133	
2.5	131	137	132	131	131	133	
5.0	130	135	128	127	126	130	5
7.5	130	132	124	101	79	115	
10.0	129	129	93	32	23	82	
12.5	128	125	39	15	13	62	
15.0	128	116	19	5	3	52	7
17.5	128	98	12	2	1	44	
20.0	127	65	4	0	0	33	
22.5	126	37	2	0	0	25	
25.0	124	19	1	0	0	21	5
27.5	122	11	1	0	0	18	
30.0	120	8	0	0	0	17	
32.5	116	5	0	0	0	16	
35.0	112	3	0	0	0	15	5
37.5	108	2	0	0	0	14	
40.0	101	2	0	0	0	13	
42.5	92	1	0	0	0	12	
45.0	84	1	0	0	0	11	4
47.5	77	1	0	0	0	10	
50.0	70	1	0	0	0	9	
52.5	65	1	0	0	0	8	
55.0	56	0	0	0	0	7	3
57.5	43	0	0	0	0	5	
60.0	25	0	0	0	0	3	
62.5	11	0	0	0	0	1	
65.0	4	0	0	0	0	0	0
67.5	1	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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 ONE LED ARRAY. LUMINAIRE OUTPUT = 213 LMS.
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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	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.111	.111	.111	.11	1.061	.061	.06	1.021	.021	.02	1.00		
1	1.141	.101	.071	.04	1.121	.081	.051	.02	1.091	.061	.031	.01	1.021	.000	.97	0.980	.960	.95	0.950	.930	.92	0.90			
2	1.061	.000	.950	.90	1.040	.980	.930	.89	1.020	.960	.920	.88	0.930	.890	.86	0.900	.870	.84	0.870	.850	.82	0.80			
3	0.990	.900	.830	.78	0.970	.890	.820	.77	0.950	.870	.820	.77	0.850	.800	.76	0.820	.780	.74	0.800	.760	.73	0.71			
4	0.920	.810	.740	.68	0.900	.800	.730	.68	0.880	.790	.730	.67	0.770	.710	.66	0.750	.700	.66	0.730	.680	.65	0.63			
5	0.850	.740	.650	.59	0.830	.720	.650	.59	0.810	.710	.640	.59	0.690	.630	.58	0.670	.620	.58	0.660	.610	.57	0.55			
6	0.790	.660	.580	.52	0.770	.650	.580	.52	0.750	.640	.570	.52	0.630	.560	.51	0.610	.550	.51	0.600	.540	.50	0.49			
7	0.720	.600	.520	.46	0.710	.590	.510	.46	0.700	.580	.510	.45	0.570	.500	.45	0.550	.490	.45	0.540	.490	.44	0.43			
8	0.670	.540	.460	.40	0.650	.530	.450	.40	0.640	.520	.450	.40	0.510	.440	.39	0.500	.440	.39	0.490	.430	.39	0.37			
9	0.620	.480	.400	.35	0.600	.480	.400	.35	0.590	.470	.400	.35	0.460	.390	.34	0.450	.390	.34	0.440	.380	.34	0.32			
10	0.570	.440	.360	.31	0.560	.430	.360	.31	0.550	.430	.360	.31	0.420	.350	.31	0.410	.350	.30	0.400	.340	.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 5.2

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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LUMINAIRE OPERATING AT 120 VAC AND 5.2 WATTS

ELECTRICAL MEASUREMENTS

INPUT VOLTAGE:	120.0	VOLTS AC
INPUT CURRENT:	0.096	AMPS
INPUT POWER:	5.2	WATTS
POWER FACTOR:	45.1	PERCENT
TOTAL HARMONIC DISTORTION:	86.25	PERCENT
OFF STATE POWER:	0.00	WATTS

LIGHT OUTPUT

LUMENS:	213	lm
EFFICACY:	40.9	lm/W

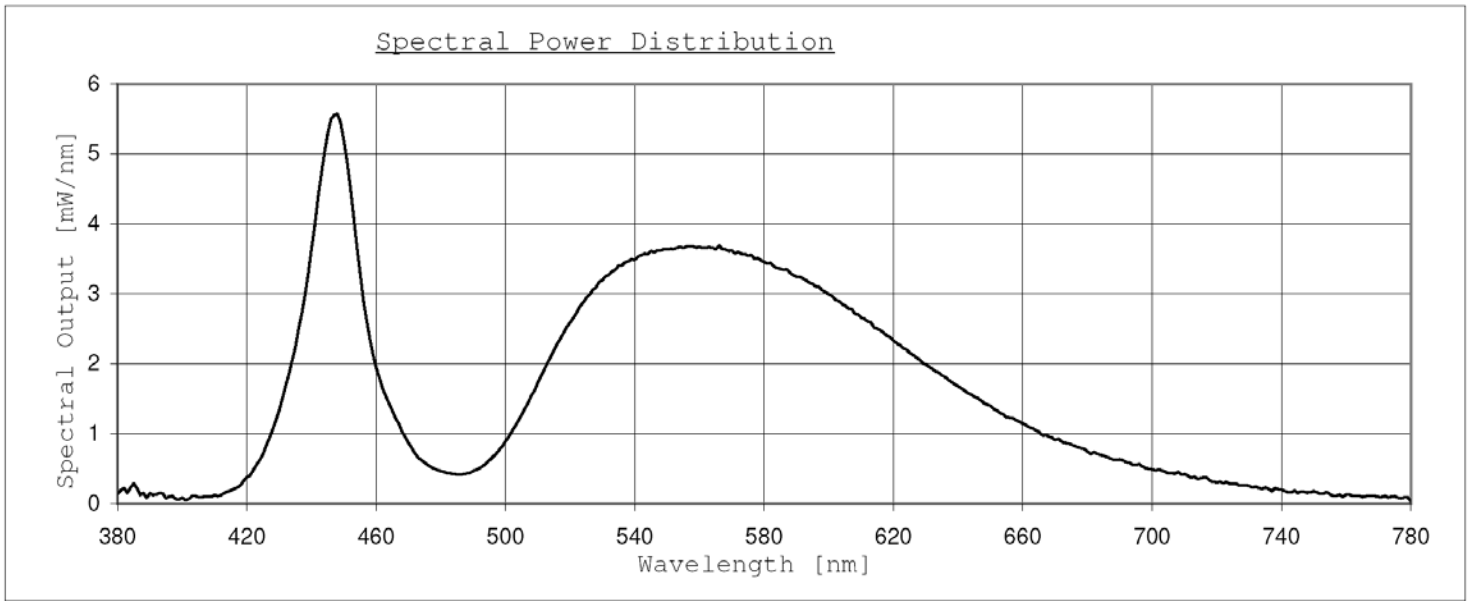
SPECTRAL MEASUREMENTS

X:	0.3507	
y:	0.3691	
u/u':	0.2085	
v:	0.3292	
v':	0.4938	
Duv:	0.0065	
CRI (R _a):	67.8	
CRI (R _g):	-33.8	
CCT:	4859	K
RADIANT FLUX:	628	mW

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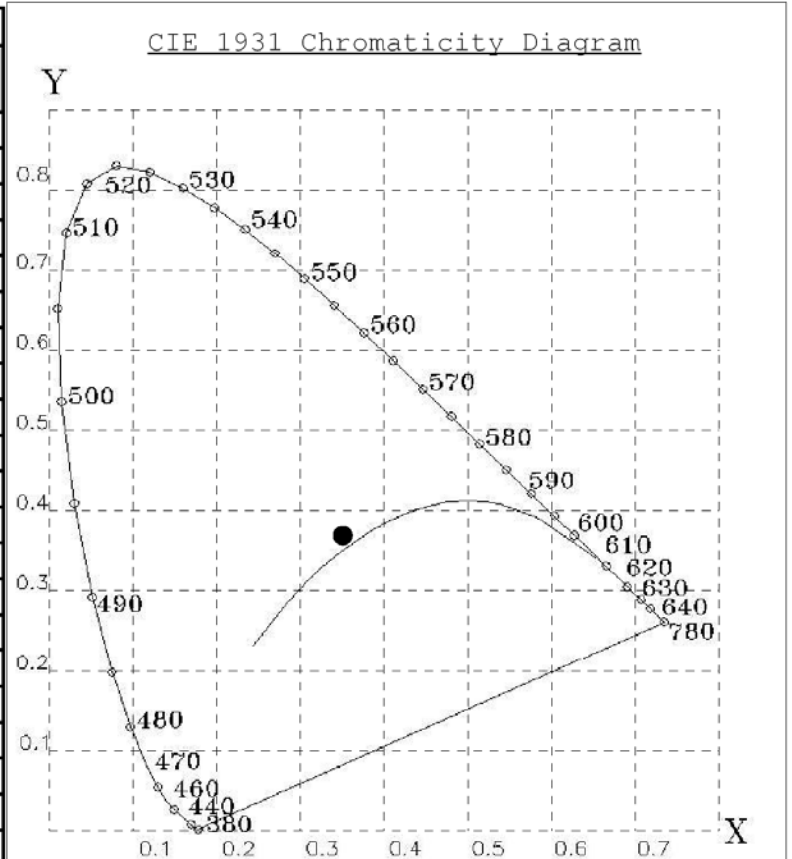
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Tabulated Spectral Power Distribution

Wavelength [nm]	[mW/nm]	Wavelength [nm]	[mW/nm]
380	0.13549	590	3.24562
390	0.14704	600	2.98801
400	0.08515	610	2.65977
410	0.12163	620	2.33219
420	0.37676	630	1.98992
430	1.33772	640	1.67620
440	3.65737	650	1.39944
450	5.18339	660	1.14414
460	1.93958	670	0.90733
470	0.86442	680	0.74411
480	0.46538	690	0.63223
490	0.46538	700	0.48783
500	0.89182	710	0.41950
510	1.73363	720	0.30134
520	2.59161	730	0.25183
530	3.19809	740	0.19886
540	3.48590	750	0.17790
550	3.63525	760	0.13087
560	3.66677	770	0.09539
570	3.61875	780	0.03012
580	3.45653		



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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.