



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300

## Integrating Sphere Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C78.377-2011, ANSI C82.77-2002  
CIE 13.3-1995, CIE 15-2004

Prepared For  
Elemental LED Inc, DBA Diode LED  
Wes Buck  
Suite 211, 1195 Park Ave.  
Emeryville, CA 94608  
United States

Catalog Number  
DOUBLE BLAZE™ 12v LED Tape Light DI-12V-DB50-80XX

Order Number  
10460077  
Test Number  
758938

Test Date  
2014-09-24

Prepared By

*Javier Caban*

Javier Caban, Technician

Approved By

*Eric M. Gaudreau*

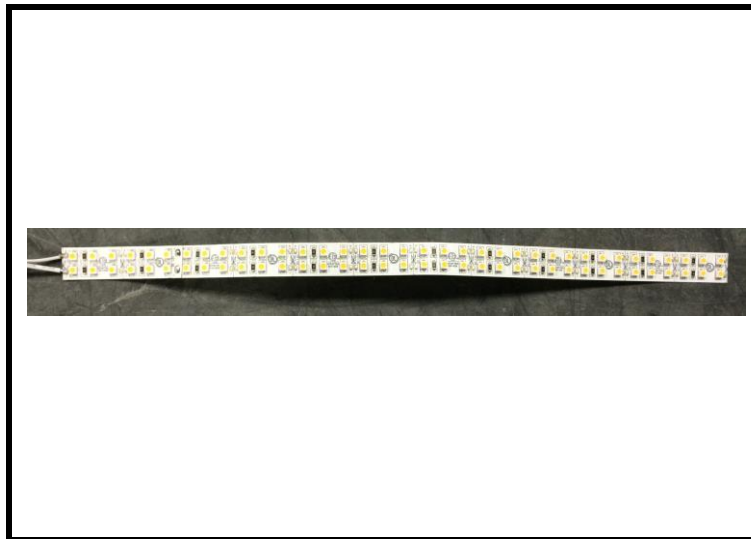
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.  
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Luminaire Description: LED strip  
Catalog Number: DOUBLE BLAZE™ 12v LED Tape Light DI-12V-DB50-80XX  
Lamp: 72 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



#### Summary of Results

Radiant Flux:	1853 mW
Luminous Flux:	589.6 Lumens
Luminaire Efficacy:	80.7 Lumens/Watt
CCT:	5224 K
CRI (Ra):	82.5
Chromaticity (x):	0.3392
Chromaticity (y):	0.3508
Chromaticity (u):	0.2078
Chromaticity (v):	0.3223
Duv:	0.0016

#### Test Conditions

Test Temperature:	24.7 °C
Voltage:	120.0 VAC
Current:	0.1374 A
Power:	7.310 W
Power Factor:	0.444
Frequency:	60 Hz
Current THD:	188 %

Testing was performed in a 1-meter integrating sphere using the 4 $\pi$  geometry method.

Absorption correction was employed for this measurement.

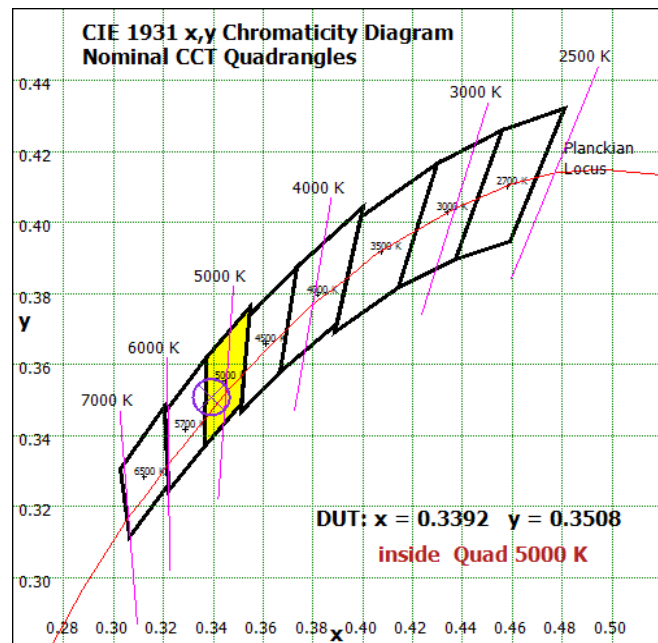
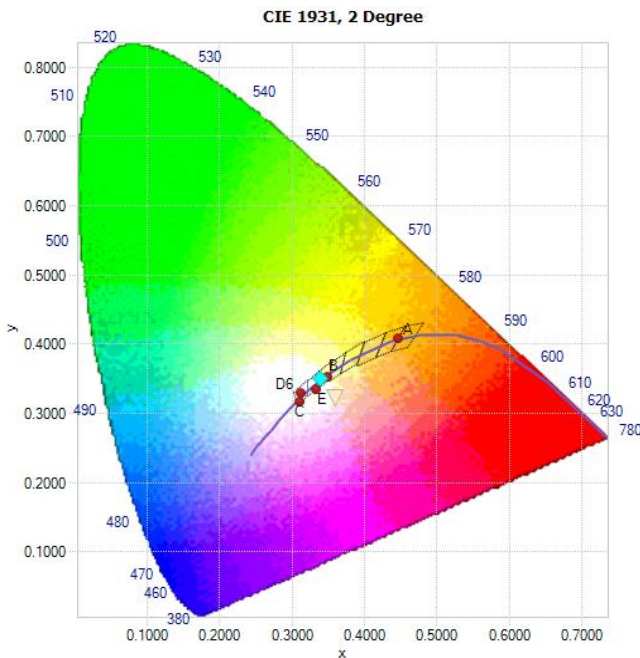


Chromaticity Coordinates

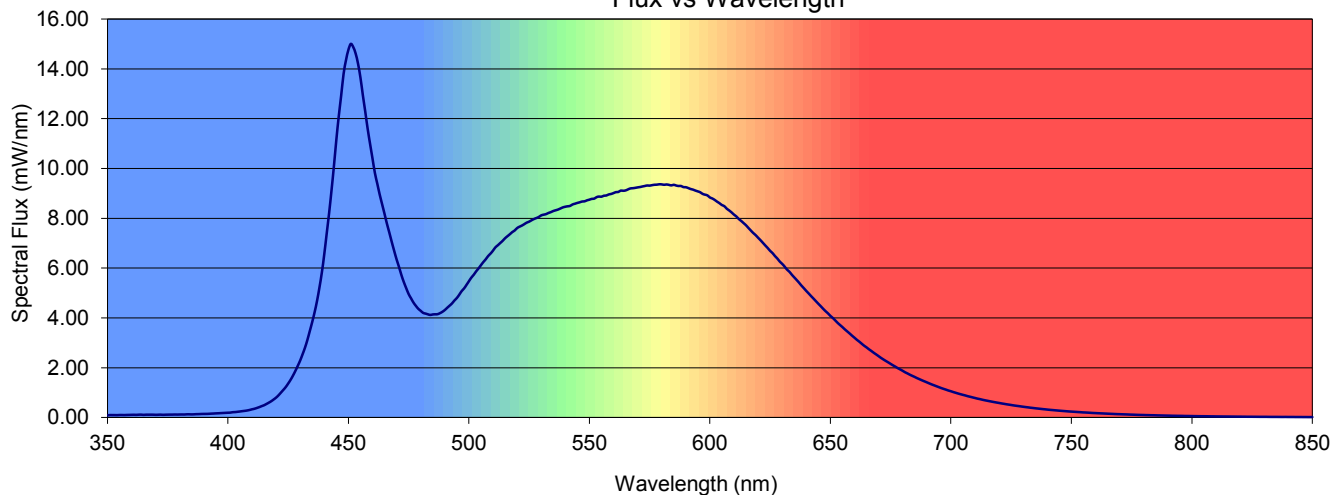
x	y	u	v	u'	v'	Duv
0.3392	0.3508	0.2078	0.3223	0.2078	0.4834	0.0016

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.5	80.7	88.3	92.6	81.6	81.3	83.0	86.5	66.3	4.2	71.4	80.2	61.1	82.8	96.1



Flux vs Wavelength





Spectral Power Distribution

$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm
350	0.0859	422	0.999	494	4.70	566	9.16	638	5.30	710	0.784	782	0.0951
351	0.0990	423	1.11	495	4.80	567	9.20	639	5.19	711	0.759	783	0.0921
352	0.0974	424	1.22	496	4.93	568	9.21	640	5.08	712	0.740	784	0.0906
353	0.0977	425	1.36	497	5.07	569	9.22	641	4.98	713	0.716	785	0.0877
354	0.0954	426	1.51	498	5.18	570	9.24	642	4.88	714	0.695	786	0.0850
355	0.101	427	1.68	499	5.32	571	9.25	643	4.78	715	0.675	787	0.0826
356	0.101	428	1.87	500	5.47	572	9.28	644	4.67	716	0.656	788	0.0801
357	0.0985	429	2.08	501	5.62	573	9.30	645	4.57	717	0.637	789	0.0782
358	0.102	430	2.29	502	5.73	574	9.32	646	4.47	718	0.619	790	0.0761
359	0.105	431	2.54	503	5.87	575	9.31	647	4.37	719	0.601	791	0.0735
360	0.108	432	2.81	504	5.99	576	9.33	648	4.27	720	0.585	792	0.0709
361	0.111	433	3.12	505	6.12	577	9.35	649	4.18	721	0.566	793	0.0697
362	0.107	434	3.48	506	6.24	578	9.35	650	4.08	722	0.550	794	0.0678
363	0.114	435	3.84	507	6.35	579	9.36	651	4.00	723	0.533	795	0.0662
364	0.116	436	4.23	508	6.48	580	9.36	652	3.90	724	0.519	796	0.0656
365	0.107	437	4.69	509	6.58	581	9.35	653	3.80	725	0.503	797	0.0625
366	0.114	438	5.23	510	6.70	582	9.36	654	3.72	726	0.487	798	0.0609
367	0.113	439	5.83	511	6.83	583	9.34	655	3.63	727	0.473	799	0.0601
368	0.115	440	6.56	512	6.92	584	9.32	656	3.54	728	0.460	800	0.0575
369	0.114	441	7.38	513	7.01	585	9.34	657	3.46	729	0.446	801	0.0560
370	0.109	442	8.21	514	7.09	586	9.32	658	3.37	730	0.433	802	0.0543
371	0.111	443	9.12	515	7.20	587	9.30	659	3.29	731	0.420	803	0.0529
372	0.116	444	10.1	516	7.28	588	9.30	660	3.20	732	0.407	804	0.0516
373	0.109	445	11.2	517	7.36	589	9.25	661	3.12	733	0.394	805	0.0510
374	0.112	446	12.1	518	7.45	590	9.25	662	3.05	734	0.383	806	0.0499
375	0.115	447	12.9	519	7.51	591	9.21	663	2.96	735	0.371	807	0.0484
376	0.117	448	13.8	520	7.61	592	9.18	664	2.88	736	0.361	808	0.0464
377	0.117	449	14.3	521	7.66	593	9.15	665	2.82	737	0.350	809	0.0456
378	0.120	450	14.8	522	7.71	594	9.11	666	2.74	738	0.339	810	0.0441
379	0.118	451	15.0	523	7.77	595	9.08	667	2.67	739	0.330	811	0.0429
380	0.120	452	14.9	524	7.82	596	9.04	668	2.60	740	0.319	812	0.0422
381	0.122	453	14.6	525	7.86	597	8.98	669	2.53	741	0.310	813	0.0410
382	0.121	454	14.2	526	7.92	598	8.95	670	2.46	742	0.300	814	0.0402
383	0.128	455	13.7	527	7.97	599	8.92	671	2.39	743	0.292	815	0.0391
384	0.128	456	12.9	528	8.01	600	8.84	672	2.33	744	0.283	816	0.0389
385	0.126	457	12.3	529	8.05	601	8.79	673	2.27	745	0.275	817	0.0374
386	0.129	458	11.6	530	8.12	602	8.74	674	2.21	746	0.267	818	0.0369
387	0.135	459	11.0	531	8.14	603	8.67	675	2.15	747	0.259	819	0.0356
388	0.136	460	10.4	532	8.17	604	8.60	676	2.09	748	0.251	820	0.0352
389	0.142	461	9.82	533	8.21	605	8.53	677	2.04	749	0.244	821	0.0334
390	0.144	462	9.39	534	8.25	606	8.49	678	1.98	750	0.238	822	0.0328
391	0.145	463	8.95	535	8.29	607	8.39	679	1.93	751	0.231	823	0.0313
392	0.148	464	8.56	536	8.32	608	8.31	680	1.88	752	0.225	824	0.0309
393	0.155	465	8.18	537	8.35	609	8.24	681	1.82	753	0.218	825	0.0306
394	0.160	466	7.78	538	8.39	610	8.15	682	1.77	754	0.212	826	0.0297
395	0.166	467	7.42	539	8.44	611	8.07	683	1.72	755	0.205	827	0.0292
396	0.170	468	7.05	540	8.46	612	7.97	684	1.67	756	0.201	828	0.0282
397	0.176	469	6.69	541	8.48	613	7.89	685	1.63	757	0.194	829	0.0282
398	0.182	470	6.35	542	8.50	614	7.81	686	1.58	758	0.189	830	0.0275
399	0.187	471	6.05	543	8.55	615	7.72	687	1.54	759	0.182	831	0.0273
400	0.192	472	5.72	544	8.58	616	7.61	688	1.49	760	0.177	832	0.0257
401	0.197	473	5.44	545	8.62	617	7.51	689	1.45	761	0.173	833	0.0246
402	0.213	474	5.19	546	8.64	618	7.41	690	1.41	762	0.168	834	0.0245
403	0.218	475	4.96	547	8.67	619	7.32	691	1.37	763	0.164	835	0.0242
404	0.230	476	4.79	548	8.68	620	7.22	692	1.33	764	0.159	836	0.0237
405	0.242	477	4.62	549	8.72	621	7.12	693	1.29	765	0.154	837	0.0228
406	0.255	478	4.48	550	8.75	622	7.02	694	1.26	766	0.150	838	0.0225
407	0.268	479	4.37	551	8.78	623	6.91	695	1.22	767	0.145	839	0.0230
408	0.283	480	4.28	552	8.79	624	6.81	696	1.18	768	0.141	840	0.0212
409	0.303	481	4.20	553	8.85	625	6.69	697	1.15	769	0.136	841	0.0212
410	0.330	482	4.17	554	8.87	626	6.60	698	1.12	770	0.133	842	0.0214
411	0.351	483	4.14	555	8.87	627	6.48	699	1.08	771	0.129	843	0.0198
412	0.383	484	4.12	556	8.91	628	6.38	700	1.06	772	0.127	844	0.0197
413	0.416	485	4.14	557	8.91	629	6.26	701	1.02	773	0.123	845	0.0191
414	0.456	486	4.14	558	8.96	630	6.17	702	0.994	774	0.119	846	0.0187
415	0.493	487	4.15	559	8.98	631	6.06	703	0.963	775	0.115	847	0.0181
416	0.544	488	4.19	560	9.01	632	5.94	704	0.936	776	0.112	848	0.0175
417	0.597	489	4.24	561	9.05	633	5.85	705	0.910	777	0.108	849	0.0169
418	0.655	490	4.32	562	9.06	634	5.74	706	0.885	778	0.105	850	0.0172
419	0.725	491	4.41	563	9.11	635	5.63	707	0.856	779	0.102		
420	0.799	492	4.49	564	9.10	636	5.52	708	0.833	780	0.100		
421	0.892	493	4.58	565	9.12	637	5.41	709	0.808	781	0.0968		



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## Photometric Indoor Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C82.77-2002

Prepared For  
Elemental LED Inc, DBA Diode LED  
Wes Buck  
Suite 211, 1195 Park Ave.  
Emeryville, CA 94608  
United States

Catalog Number  
DOUBLE BLAZE™ 12v LED Tape Light DI-12V-DB50-80XX  
Project Number  
10460077  
Test Number  
758937

Test Date

2014-09-24

Prepared By

Handwritten signature of Javier Caban in black ink.

Javier Caban, Technician

Approved By

Handwritten signature of Eric M. Gaudreau in black ink.

Eric Gaudreau, Engineering Project Handler

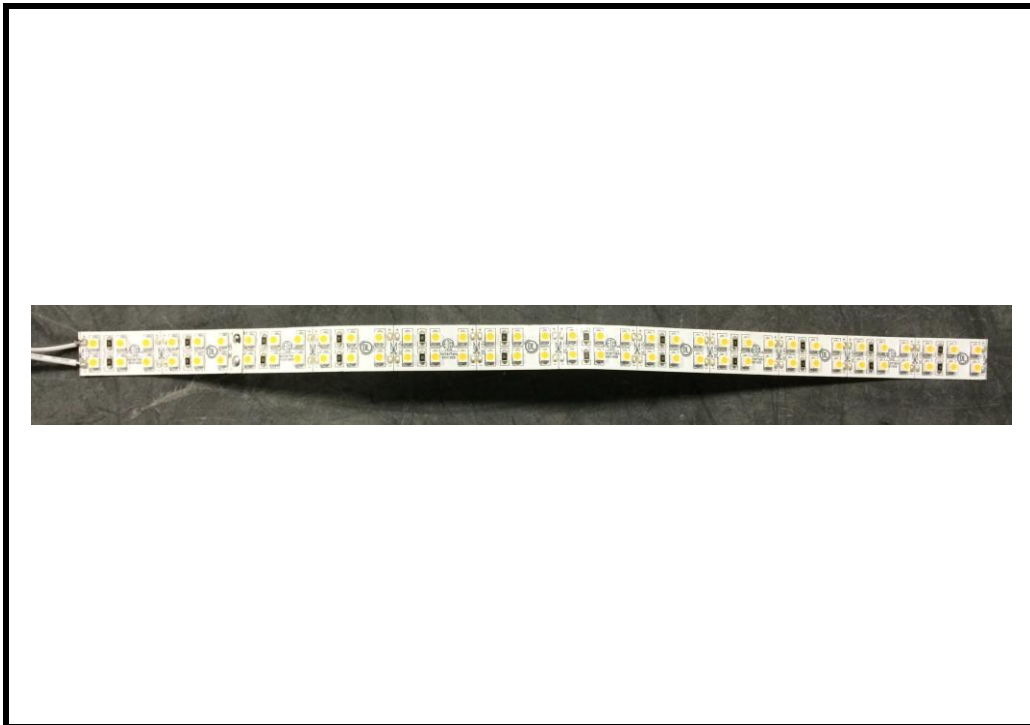
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Luminaire Description: LED strip  
Catalog Number: DOUBLE BLAZE™ 12v LED Tape Light DI-12V-DB50-80XX  
Lamp: 72 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

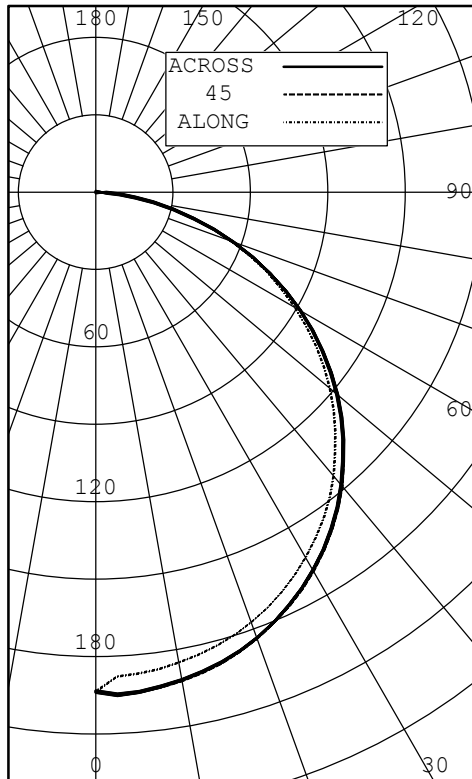


Test Conditions

Test Temperature:	25.0 °C
Voltage:	120.0 VAC
Current:	0.1333 A
Power:	7.452 W
Power Factor:	0.466
Frequency:	60 Hz
Current THD:	179 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	194	194	194	194	194	
5	187	193	195	194	194	19
10	185	191	192	192	192	
15	182	188	189	189	189	53
20	177	183	184	184	184	
25	171	177	177	177	177	81
30	163	169	169	169	169	
35	154	159	160	159	159	99
40	143	148	149	148	148	
45	131	136	136	136	136	104
50	119	123	122	122	122	
55	104	108	108	107	107	96
60	89	92	92	92	91	
65	73	75	75	75	75	74
70	56	58	58	58	57	
75	39	40	40	40	39	42
80	23	24	23	23	23	
85	9	10	10	10	9	11
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	153	26.38
0-40	252	43.52
0-60	451	78.03
0-90	579	100.00
40-90	327	56.48
60-90	127	21.97
90-180	0	0.00
0-180	579	100.00

EFFICACY (LUMENS PER WATT): 77.1

\*\*\* THIS IS AN ABSOLUTE TEST \*\*\*

LUMINOUS LENGTH: 12.000 INS  
 WIDTH: 0.500 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.3  
 SC: 1.3

ANGLE	ALONG	45	ACROSS
45	47968	49857	49747
55	46930	48624	48511
65	44653	46037	45836
75	38527	39723	39426
85	28011	29865	27671

TESTED IN ACCORDANCE WITH IES PROCEDURES.



INTENSITY (CANDLEPOWER) DATA  
 IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0.0	194	194	194	194	194	194	
2.5	188	194	195	195	195	194	
5.0	187	193	195	194	194	193	19
7.5	186	192	194	193	193	192	
10.0	185	191	192	192	192	191	
12.5	184	190	191	190	191	190	
15.0	182	188	189	189	189	188	53
17.5	180	186	187	186	186	185	
20.0	177	183	184	184	184	183	
22.5	174	180	181	180	180	180	
25.0	171	177	177	177	177	176	81
27.5	167	173	174	173	173	172	
30.0	163	169	169	169	169	168	
32.5	159	164	165	164	164	164	
35.0	154	159	160	159	159	159	99
37.5	149	154	154	154	154	154	
40.0	143	148	149	148	148	148	
42.5	137	142	142	142	142	142	
45.0	131	136	136	136	136	135	104
47.5	125	129	129	129	129	129	
50.0	119	123	122	122	122	122	
52.5	111	115	115	115	115	115	
55.0	104	108	108	107	107	107	96
57.5	97	100	100	100	100	99	
60.0	89	92	92	92	91	91	
62.5	81	84	83	83	83	83	
65.0	73	75	75	75	75	75	74
67.5	65	67	66	66	66	66	
70.0	56	58	58	58	57	57	
72.5	47	49	49	49	48	48	
75.0	39	40	40	40	39	40	42
77.5	30	31	31	31	31	31	
80.0	23	24	23	23	23	23	
82.5	16	16	16	16	16	16	
85.0	9	10	10	10	9	10	11
87.5	4	5	5	5	4	5	
90.0	0	0	0	0	0	0	





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	.061	.06	1.021	.021	.021	.02	1.00
	1	1.121	.071	.030	.99	1.091	.051	.010	.97	1.071	.030	.990	.96	0.980	.950	.93	0.940	.920	.90	0.910	.890	.87	0.85			
	2	1.020	.940	.880	.81	1.000	.930	.860	.81	0.980	.910	.850	.80	0.870	.820	.78	0.840	.800	.76	0.810	.770	.74	0.72			
	3	0.940	.830	.750	.68	0.910	.810	.740	.68	0.890	.800	.730	.67	0.770	.710	.66	0.740	.690	.65	0.720	.670	.64	0.61			
	4	0.860	.740	.650	.59	0.840	.730	.650	.58	0.820	.720	.640	.58	0.690	.620	.57	0.670	.610	.56	0.650	.600	.55	0.53			
	5	0.800	.660	.570	.50	0.770	.650	.560	.50	0.750	.640	.560	.50	0.620	.540	.49	0.600	.530	.48	0.580	.530	.48	0.46			
	6	0.730	.590	.500	.44	0.710	.580	.490	.43	0.690	.570	.490	.43	0.550	.480	.42	0.540	.470	.42	0.520	.460	.42	0.40			
	7	0.670	.530	.440	.38	0.650	.520	.430	.37	0.640	.510	.430	.37	0.500	.420	.37	0.480	.410	.36	0.470	.410	.36	0.34			
	8	0.620	.480	.390	.33	0.610	.470	.390	.33	0.590	.460	.380	.33	0.450	.380	.33	0.440	.370	.32	0.430	.370	.32	0.30			
	9	0.580	.440	.350	.29	0.560	.430	.340	.29	0.550	.420	.340	.29	0.410	.340	.29	0.400	.330	.28	0.390	.330	.28	0.26			
	10	0.530	.400	.310	.26	0.520	.390	.310	.26	0.510	.380	.310	.25	0.370	.300	.25	0.360	.300	.25	0.360	.290	.25	0.23			

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

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.



## Cone of Light

**Cone Of Light Tabulation**

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
4.00	12.2	5.14
6.00	5.40	7.72
8.00	3.04	10.3
10.0	1.94	12.9
12.0	1.35	15.4
14.0	0.992	18.0
16.0	0.760	20.6

**Cone of Light Plot**

