



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
BLAZE™ 12v LED Tape Light DI-12V-BL24-80XX

Order Number
10460077
Test Number
758915

Test Date

2014-09-24

Prepared By

Javier Caban

Javier Caban, Technician

Approved By

Eric M. Gaudreau

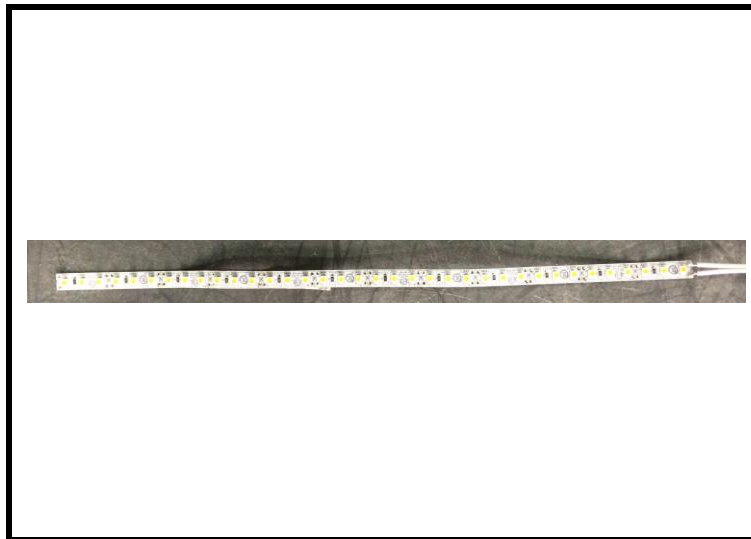
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED strip
Catalog Number: BLAZE™ 12v LED Tape Light DI-12V-BL24-80XX
Lamp: 36 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



Summary of Results

Radiant Flux:	848.1 mW
Luminous Flux:	255.0 Lumens
Luminaire Efficacy:	61.0 Lumens/Watt
CCT:	2356 K
CRI (Ra):	81.0
Chromaticity (x):	0.4890
Chromaticity (y):	0.4131
Chromaticity (u):	0.2802
Chromaticity (v):	0.3551
Duv:	-0.0010

Test Conditions

Test Temperature:	24.4 °C
Voltage:	120.0 VAC
Current:	0.08556 A
Power:	4.180 W
Power Factor:	0.408
Frequency:	60 Hz
Current THD:	189 %

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

Absorption correction was employed for this measurement.

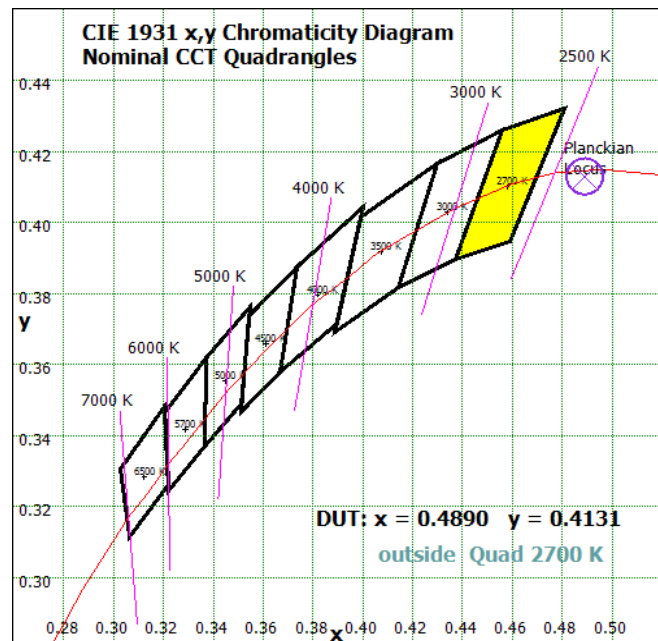
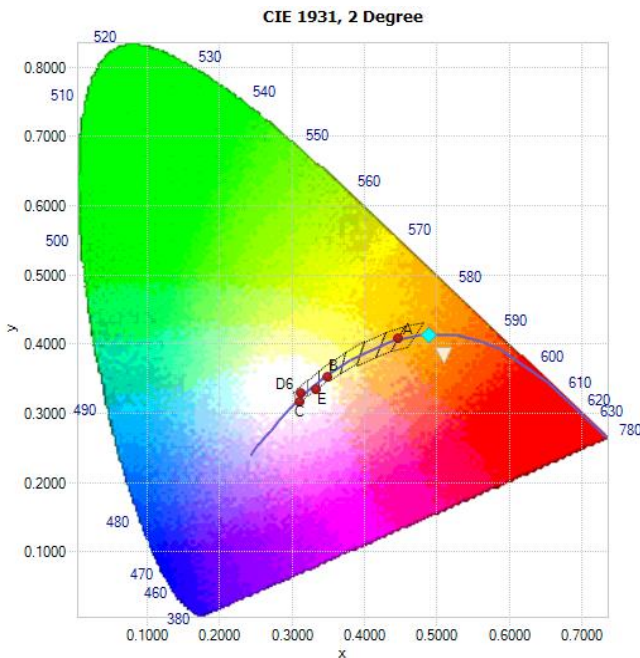


Chromaticity Coordinates

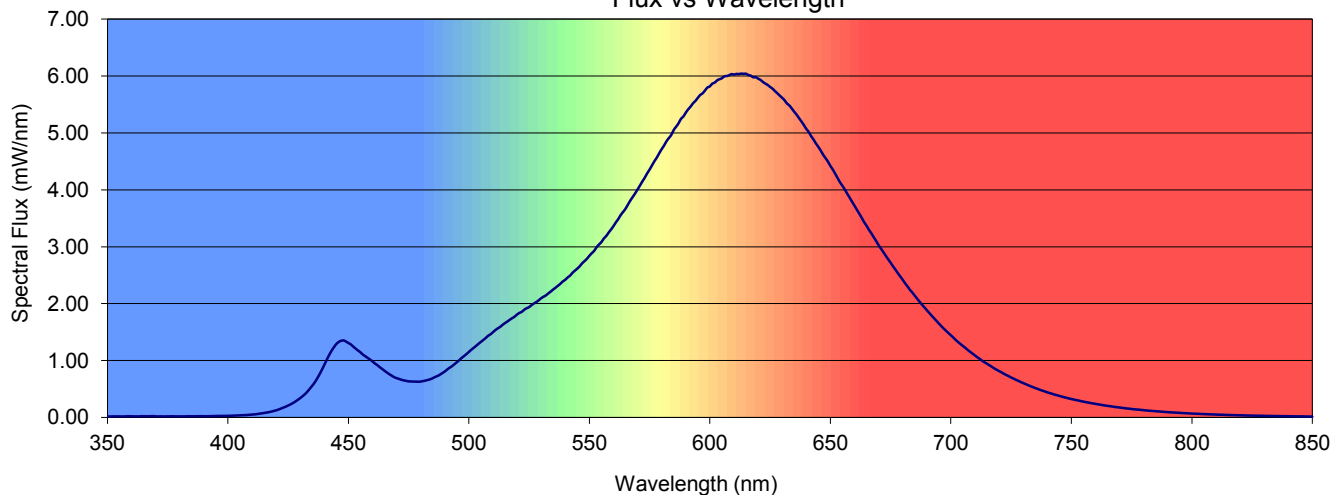
x	y	u	v	u'	v'	Duv
0.4890	0.4131	0.2802	0.3551	0.2802	0.5327	-0.0010

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.0	79.1	90.7	95.7	77.3	78.8	89.5	80.7	56.4	10.6	79.6	75.8	76.7	81.5	98.5



Flux vs Wavelength





Spectral Power Distribution

λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm
350	0.0175	422	0.157	494	0.936	566	3.74	638	5.20	710	1.09	782	0.120
351	0.0179	423	0.174	495	0.972	567	3.81	639	5.14	711	1.06	783	0.117
352	0.0186	424	0.190	496	1.01	568	3.87	640	5.07	712	1.03	784	0.114
353	0.0197	425	0.211	497	1.05	569	3.94	641	5.02	713	0.997	785	0.111
354	0.0190	426	0.231	498	1.08	570	4.01	642	4.94	714	0.970	786	0.107
355	0.0202	427	0.255	499	1.11	571	4.08	643	4.88	715	0.945	787	0.104
356	0.0181	428	0.281	500	1.15	572	4.15	644	4.82	716	0.918	788	0.100
357	0.0191	429	0.310	501	1.19	573	4.21	645	4.75	717	0.891	789	0.0970
358	0.0222	430	0.341	502	1.22	574	4.29	646	4.69	718	0.864	790	0.0942
359	0.0231	431	0.375	503	1.26	575	4.36	647	4.62	719	0.839	791	0.0913
360	0.0220	432	0.412	504	1.30	576	4.43	648	4.56	720	0.816	792	0.0887
361	0.0195	433	0.455	505	1.33	577	4.50	649	4.49	721	0.793	793	0.0866
362	0.0203	434	0.507	506	1.36	578	4.57	650	4.42	722	0.769	794	0.0840
363	0.0191	435	0.558	507	1.40	579	4.64	651	4.36	723	0.747	795	0.0820
364	0.0232	436	0.615	508	1.44	580	4.71	652	4.28	724	0.727	796	0.0786
365	0.0229	437	0.683	509	1.46	581	4.78	653	4.21	725	0.703	797	0.0761
366	0.0230	438	0.757	510	1.50	582	4.85	654	4.13	726	0.684	798	0.0743
367	0.0219	439	0.837	511	1.54	583	4.91	655	4.07	727	0.662	799	0.0715
368	0.0240	440	0.924	512	1.57	584	4.97	656	4.00	728	0.644	800	0.0691
369	0.0250	441	1.01	513	1.59	585	5.05	657	3.93	729	0.623	801	0.0674
370	0.0213	442	1.10	514	1.63	586	5.11	658	3.86	730	0.605	802	0.0656
371	0.0187	443	1.17	515	1.66	587	5.17	659	3.79	731	0.587	803	0.0643
372	0.0205	444	1.23	516	1.69	588	5.25	660	3.72	732	0.569	804	0.0620
373	0.0183	445	1.29	517	1.72	589	5.29	661	3.65	733	0.551	805	0.0599
374	0.0198	446	1.33	518	1.75	590	5.36	662	3.58	734	0.535	806	0.0585
375	0.0200	447	1.35	519	1.77	591	5.41	663	3.51	735	0.518	807	0.0567
376	0.0208	448	1.35	520	1.81	592	5.46	664	3.43	736	0.503	808	0.0547
377	0.0220	449	1.34	521	1.84	593	5.52	665	3.37	737	0.486	809	0.0537
378	0.0203	450	1.31	522	1.86	594	5.56	666	3.30	738	0.472	810	0.0520
379	0.0196	451	1.28	523	1.89	595	5.62	667	3.24	739	0.458	811	0.0502
380	0.0191	452	1.25	524	1.92	596	5.67	668	3.17	740	0.443	812	0.0490
381	0.0207	453	1.21	525	1.94	597	5.70	669	3.10	741	0.429	813	0.0482
382	0.0191	454	1.18	526	1.97	598	5.75	670	3.03	742	0.417	814	0.0459
383	0.0222	455	1.15	527	2.00	599	5.80	671	2.97	743	0.403	815	0.0446
384	0.0223	456	1.10	528	2.03	600	5.82	672	2.91	744	0.392	816	0.0430
385	0.0215	457	1.08	529	2.06	601	5.87	673	2.84	745	0.379	817	0.0421
386	0.0212	458	1.05	530	2.10	602	5.88	674	2.78	746	0.368	818	0.0409
387	0.0224	459	1.02	531	2.12	603	5.92	675	2.72	747	0.356	819	0.0402
388	0.0233	460	0.986	532	2.15	604	5.94	676	2.66	748	0.346	820	0.0384
389	0.0238	461	0.949	533	2.18	605	5.96	677	2.60	749	0.334	821	0.0383
390	0.0226	462	0.920	534	2.21	606	5.99	678	2.54	750	0.325	822	0.0363
391	0.0224	463	0.885	535	2.25	607	6.00	679	2.48	751	0.316	823	0.0348
392	0.0236	464	0.853	536	2.28	608	6.01	680	2.42	752	0.306	824	0.0344
393	0.0245	465	0.821	537	2.32	609	6.03	681	2.36	753	0.298	825	0.0333
394	0.0255	466	0.790	538	2.35	610	6.02	682	2.30	754	0.288	826	0.0326
395	0.0261	467	0.761	539	2.39	611	6.04	683	2.24	755	0.279	827	0.0316
396	0.0279	468	0.735	540	2.42	612	6.03	684	2.20	756	0.270	828	0.0312
397	0.0279	469	0.709	541	2.46	613	6.04	685	2.14	757	0.263	829	0.0305
398	0.0286	470	0.692	542	2.49	614	6.04	686	2.09	758	0.254	830	0.0292
399	0.0287	471	0.679	543	2.54	615	6.04	687	2.04	759	0.247	831	0.0281
400	0.0299	472	0.663	544	2.58	616	6.02	688	1.98	760	0.240	832	0.0282
401	0.0303	473	0.653	545	2.62	617	6.00	689	1.94	761	0.232	833	0.0266
402	0.0327	474	0.643	546	2.66	618	5.98	690	1.89	762	0.226	834	0.0255
403	0.0340	475	0.636	547	2.71	619	5.98	691	1.84	763	0.218	835	0.0253
404	0.0364	476	0.633	548	2.75	620	5.95	692	1.79	764	0.211	836	0.0248
405	0.0386	477	0.631	549	2.79	621	5.93	693	1.74	765	0.205	837	0.0242
406	0.0406	478	0.631	550	2.84	622	5.90	694	1.70	766	0.199	838	0.0239
407	0.0417	479	0.628	551	2.89	623	5.87	695	1.65	767	0.193	839	0.0234
408	0.0451	480	0.633	552	2.93	624	5.84	696	1.61	768	0.186	840	0.0230
409	0.0478	481	0.640	553	2.99	625	5.81	697	1.56	769	0.181	841	0.0209
410	0.0521	482	0.649	554	3.04	626	5.78	698	1.52	770	0.176	842	0.0212
411	0.0549	483	0.660	555	3.08	627	5.73	699	1.48	771	0.170	843	0.0207
412	0.0600	484	0.673	556	3.14	628	5.70	700	1.44	772	0.165	844	0.0195
413	0.0669	485	0.691	557	3.19	629	5.65	701	1.40	773	0.159	845	0.0206
414	0.0728	486	0.712	558	3.25	630	5.62	702	1.36	774	0.156	846	0.0199
415	0.0796	487	0.730	559	3.30	631	5.57	703	1.33	775	0.149	847	0.0184
416	0.0864	488	0.754	560	3.36	632	5.52	704	1.29	776	0.145	848	0.0176
417	0.0947	489	0.781	561	3.43	633	5.48	705	1.26	777	0.141	849	0.0175
418	0.104	490	0.808	562	3.49	634	5.43	706	1.22	778	0.138	850	0.0165
419	0.115	491	0.843	563	3.56	635	5.37	707	1.19	779	0.133		
420	0.126	492	0.874	564	3.61	636	5.32	708	1.15	780	0.129		
421	0.141	493	0.902	565	3.67	637	5.26	709	1.12	781	0.125		



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Photometric Indoor Test Report

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IES LM-79-2008
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Prepared For
Elemental LED Inc, DBA Diode LED
Wes Buck
Suite 211, 1195 Park Ave.
Emeryville, CA 94608
United States

Catalog Number
BLAZE™ 12v LED Tape Light DI-12V-BL24-80XX
Project Number
10460077
Test Number
758914

Test Date

2014-09-19

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

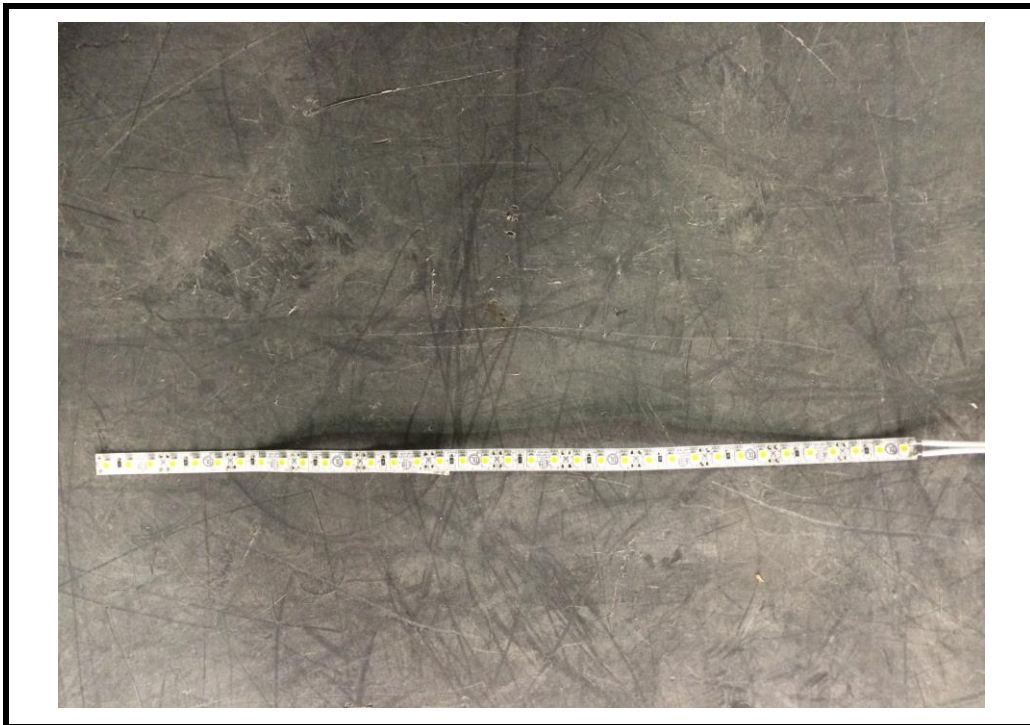
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Luminaire Description: LED strip
Catalog Number: BLAZE™ 12v LED Tape Light DI-12V-BL24-80XX
Lamp: 36 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

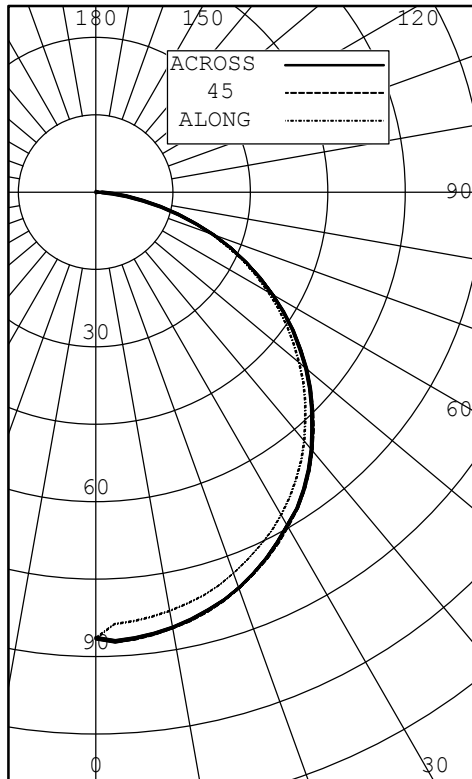


Test Conditions

Test Temperature:	24.9 °C
Voltage:	120.0 VAC
Current:	0.08282 A
Power:	4.290 W
Power Factor:	0.432
Frequency:	60 Hz
Current THD:	182 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	86	86	86	86	86	
5	84	86	87	87	87	8
10	82	85	86	86	86	
15	81	83	84	84	84	24
20	79	81	82	81	81	
25	76	78	79	78	78	36
30	72	74	75	74	74	
35	68	70	71	70	70	44
40	63	65	65	65	65	
45	57	59	60	59	59	46
50	52	53	53	53	53	
55	45	47	47	47	47	41
60	39	40	40	40	40	
65	31	32	32	32	32	32
70	24	25	25	25	24	
75	16	17	17	17	17	18
80	9	10	10	10	9	
85	3	4	4	4	3	4
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	68	26.83
0-40	111	44.13
0-60	198	78.60
0-90	252	100.00
40-90	141	55.87
60-90	54	21.40
90-180	0	0.00
0-180	252	100.00

EFFICACY (LUMENS PER WATT): 58.7

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 12.000 INS
 WIDTH: 0.375 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.3
 SC (ALONG): 1.2, SC (ACROSS): 1.3

ANGLE	ALONG	45	ACROSS
45	27936	29094	28971
55	27173	28181	28091
65	25591	26459	26344
75	21892	22651	22243
85	13635	14462	13290

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	86	86	86	86	86	86	
2.5	84	86	87	87	87	87	
5.0	84	86	87	87	87	86	8
7.5	83	86	87	86	86	86	
10.0	82	85	86	86	86	85	
12.5	82	84	85	85	85	84	
15.0	81	83	84	84	84	83	24
17.5	80	82	83	83	83	82	
20.0	79	81	82	81	81	81	
22.5	77	80	80	80	80	80	
25.0	76	78	79	78	78	78	36
27.5	74	76	77	76	76	76	
30.0	72	74	75	74	74	74	
32.5	70	72	73	73	73	72	
35.0	68	70	71	70	70	70	44
37.5	65	68	68	68	68	67	
40.0	63	65	65	65	65	65	
42.5	60	62	62	62	62	62	
45.0	57	59	60	59	59	59	46
47.5	55	56	57	56	56	56	
50.0	52	53	53	53	53	53	
52.5	48	50	50	50	50	50	
55.0	45	47	47	47	47	46	41
57.5	42	43	43	43	43	43	
60.0	39	40	40	40	40	40	
62.5	35	36	36	36	36	36	
65.0	31	32	32	32	32	32	32
67.5	28	29	29	29	28	28	
70.0	24	25	25	25	24	25	
72.5	20	21	21	21	21	21	
75.0	16	17	17	17	17	17	18
77.5	13	13	13	13	13	13	
80.0	9	10	10	10	9	10	
82.5	6	6	6	6	6	6	
85.0	3	4	4	4	3	4	4
87.5	1	2	2	2	1	2	
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	1.101	.051	.010	.98	1.071	.030	.990	.96	0.990	.960	.93	0.950	.930	.90	0.910	.890	.88	0.86			
	2	1.030	.950	.880	.82	1.000	.930	.870	.81	0.980	.910	.850	.80	0.870	.830	.78	0.840	.800	.77	0.810	.780	.75	0.73			
	3	0.940	.830	.750	.69	0.920	.820	.740	.68	0.890	.800	.730	.68	0.780	.710	.66	0.750	.700	.65	0.720	.680	.64	0.62			
	4	0.870	.750	.660	.59	0.850	.730	.650	.59	0.830	.720	.650	.58	0.700	.630	.58	0.670	.610	.57	0.650	.600	.56	0.54			
	5	0.800	.670	.580	.51	0.780	.660	.570	.50	0.760	.640	.560	.50	0.620	.550	.50	0.600	.540	.49	0.580	.530	.49	0.47			
	6	0.740	.600	.510	.44	0.720	.590	.500	.44	0.700	.580	.490	.43	0.560	.490	.43	0.540	.480	.43	0.530	.470	.42	0.40			
	7	0.670	.530	.440	.39	0.660	.520	.440	.38	0.640	.520	.430	.38	0.500	.430	.37	0.490	.420	.37	0.470	.410	.37	0.35			
	8	0.620	.480	.400	.34	0.610	.470	.390	.33	0.600	.470	.390	.33	0.450	.380	.33	0.440	.380	.33	0.430	.370	.32	0.31			
	9	0.580	.440	.350	.29	0.560	.430	.350	.29	0.550	.430	.350	.29	0.410	.340	.29	0.400	.340	.29	0.390	.330	.29	0.27			
	10	0.530	.400	.310	.26	0.520	.390	.310	.26	0.510	.390	.310	.26	0.380	.310	.26	0.370	.300	.25	0.360	.300	.25	0.24			

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	5.43	5.09
6.00	2.41	7.64
8.00	1.36	10.2
10.0	0.869	12.7
12.0	0.603	15.3
14.0	0.443	17.8
16.0	0.339	20.4

Cone of Light Plot

