



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  
FLUID VIEW™ 12v LED Tape Light DI-12V-FV42-80XX

Order Number  
10460077  
Test Number  
758909

Test Date  
2014-09-23

Prepared By

*Javier Caban*

Javier Caban, Technician

Approved By

*Eric M. Gaudreau*

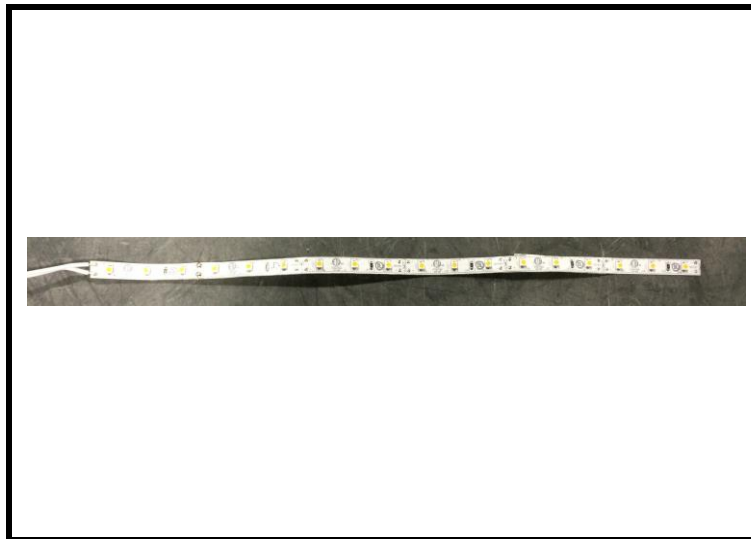
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



Luminaire Description: LED strip  
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV42-80XX  
Lamp: 18 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



#### Summary of Results

Radiant Flux: 475.7 mW  
Luminous Flux: 150.4 Lumens  
Luminaire Efficacy: 63.5 Lumens/Watt  
CCT: 4282 K  
CRI (Ra): 81.0  
Chromaticity (x): 0.3698  
Chromaticity (y): 0.3743  
Chromaticity (u): 0.2191  
Chromaticity (v): 0.3326  
Duv: 0.0019

#### Test Conditions

Test Temperature: 25.0 °C  
Voltage: 120.0 VAC  
Current: 0.05446 A  
Power: 2.370 W  
Power Factor: 0.364  
Frequency: 60 Hz  
Current THD: 170 %

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

Absorption correction was employed for this measurement.

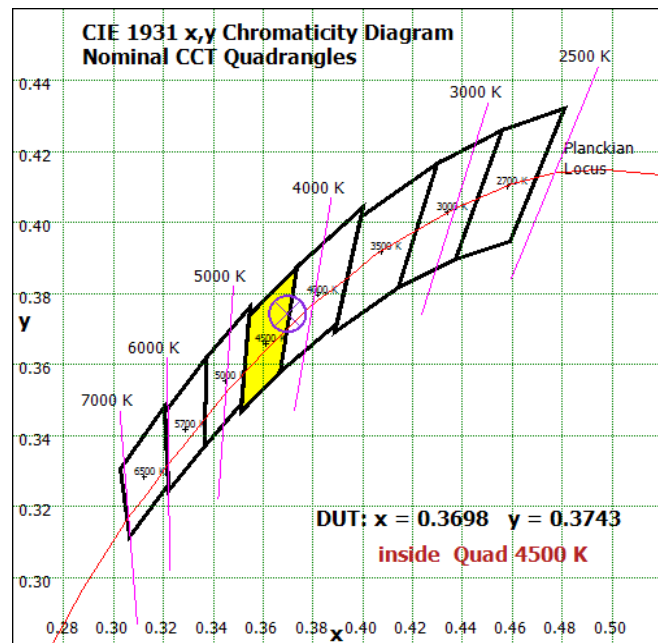
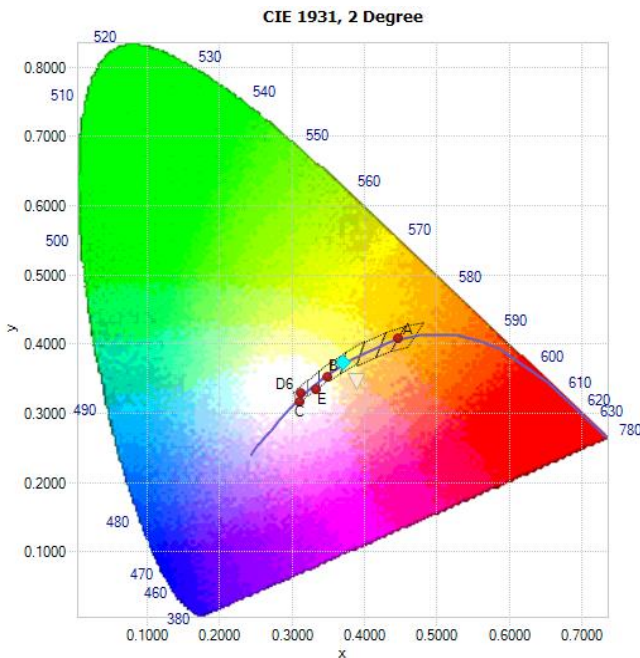


Chromaticity Coordinates

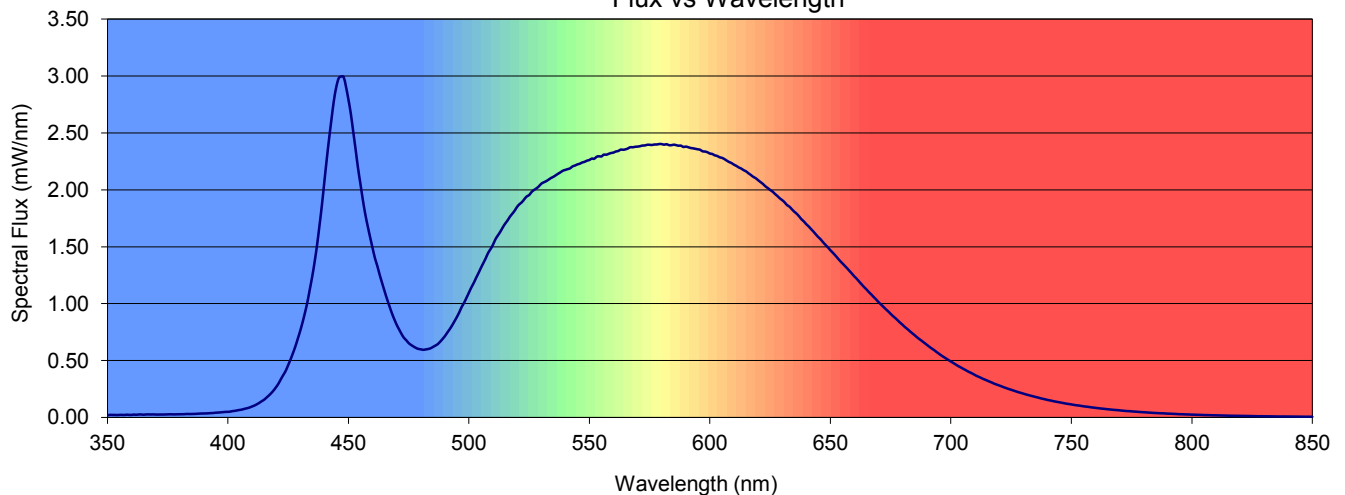
x	y	u	v	u'	v'	Duv
0.3698	0.3743	0.2191	0.3326	0.2191	0.4989	0.0019

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.0	79.9	84.1	86.9	81.9	79.3	77.6	87.6	71.1	18.8	61.9	79.8	55.5	80.2	92.4



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	0.0195	422	0.337	494	0.845	566	2.36	638	1.74	710	0.373	782	0.0434
351	0.0231	423	0.374	495	0.882	567	2.37	639	1.72	711	0.362	783	0.0423
352	0.0227	424	0.411	496	0.924	568	2.37	640	1.70	712	0.354	784	0.0406
353	0.0227	425	0.460	497	0.970	569	2.38	641	1.68	713	0.343	785	0.0395
354	0.0218	426	0.511	498	1.01	570	2.38	642	1.65	714	0.334	786	0.0383
355	0.0228	427	0.566	499	1.05	571	2.38	643	1.63	715	0.325	787	0.0375
356	0.0234	428	0.624	500	1.10	572	2.39	644	1.61	716	0.316	788	0.0368
357	0.0222	429	0.692	501	1.14	573	2.39	645	1.58	717	0.307	789	0.0356
358	0.0248	430	0.760	502	1.18	574	2.40	646	1.56	718	0.297	790	0.0342
359	0.0233	431	0.837	503	1.23	575	2.40	647	1.54	719	0.289	791	0.0336
360	0.0230	432	0.922	504	1.27	576	2.39	648	1.52	720	0.282	792	0.0324
361	0.0257	433	1.01	505	1.31	577	2.40	649	1.49	721	0.274	793	0.0316
362	0.0240	434	1.13	506	1.36	578	2.40	650	1.47	722	0.265	794	0.0301
363	0.0266	435	1.24	507	1.40	579	2.40	651	1.45	723	0.258	795	0.0290
364	0.0267	436	1.37	508	1.45	580	2.40	652	1.42	724	0.250	796	0.0286
365	0.0246	437	1.52	509	1.48	581	2.40	653	1.40	725	0.244	797	0.0276
366	0.0268	438	1.68	510	1.52	582	2.40	654	1.38	726	0.237	798	0.0270
367	0.0272	439	1.86	511	1.56	583	2.39	655	1.35	727	0.230	799	0.0264
368	0.0267	440	2.07	512	1.60	584	2.39	656	1.33	728	0.223	800	0.0253
369	0.0272	441	2.26	513	1.63	585	2.40	657	1.31	729	0.217	801	0.0248
370	0.0263	442	2.45	514	1.67	586	2.39	658	1.29	730	0.210	802	0.0240
371	0.0258	443	2.62	515	1.70	587	2.39	659	1.26	731	0.204	803	0.0235
372	0.0263	444	2.79	516	1.73	588	2.39	660	1.24	732	0.198	804	0.0228
373	0.0263	445	2.91	517	1.76	589	2.38	661	1.22	733	0.192	805	0.0216
374	0.0267	446	2.98	518	1.79	590	2.38	662	1.19	734	0.187	806	0.0212
375	0.0275	447	3.00	519	1.82	591	2.37	663	1.17	735	0.181	807	0.0210
376	0.0283	448	2.99	520	1.85	592	2.37	664	1.15	736	0.176	808	0.0198
377	0.0277	449	2.91	521	1.87	593	2.36	665	1.12	737	0.170	809	0.0195
378	0.0274	450	2.79	522	1.89	594	2.36	666	1.10	738	0.165	810	0.0190
379	0.0282	451	2.67	523	1.92	595	2.36	667	1.08	739	0.160	811	0.0186
380	0.0285	452	2.51	524	1.94	596	2.35	668	1.06	740	0.155	812	0.0178
381	0.0291	453	2.35	525	1.95	597	2.34	669	1.04	741	0.151	813	0.0175
382	0.0293	454	2.19	526	1.98	598	2.34	670	1.01	742	0.146	814	0.0168
383	0.0313	455	2.05	527	2.00	599	2.33	671	0.993	743	0.142	815	0.0164
384	0.0306	456	1.91	528	2.01	600	2.32	672	0.972	744	0.137	816	0.0157
385	0.0310	457	1.79	529	2.03	601	2.31	673	0.951	745	0.134	817	0.0156
386	0.0316	458	1.68	530	2.05	602	2.30	674	0.932	746	0.130	818	0.0152
387	0.0326	459	1.58	531	2.07	603	2.30	675	0.911	747	0.125	819	0.0150
388	0.0339	460	1.49	532	2.08	604	2.29	676	0.890	748	0.122	820	0.0144
389	0.0351	461	1.40	533	2.09	605	2.28	677	0.873	749	0.118	821	0.0141
390	0.0353	462	1.33	534	2.10	606	2.27	678	0.852	750	0.115	822	0.0140
391	0.0361	463	1.25	535	2.11	607	2.26	679	0.832	751	0.111	823	0.0134
392	0.0373	464	1.18	536	2.13	608	2.24	680	0.813	752	0.108	824	0.0131
393	0.0385	465	1.11	537	2.14	609	2.23	681	0.793	753	0.105	825	0.0124
394	0.0397	466	1.04	538	2.15	610	2.22	682	0.777	754	0.102	826	0.0121
395	0.0424	467	0.980	539	2.17	611	2.21	683	0.758	755	0.0987	827	0.0114
396	0.0434	468	0.919	540	2.17	612	2.20	684	0.740	756	0.0959	828	0.0113
397	0.0455	469	0.865	541	2.18	613	2.19	685	0.722	757	0.0935	829	0.0114
398	0.0470	470	0.817	542	2.19	614	2.17	686	0.704	758	0.0903	830	0.0107
399	0.0494	471	0.776	543	2.21	615	2.16	687	0.687	759	0.0875	831	0.0107
400	0.0498	472	0.736	544	2.21	616	2.15	688	0.672	760	0.0848	832	0.0104
401	0.0520	473	0.701	545	2.22	617	2.13	689	0.655	761	0.0824	833	0.0102
402	0.0565	474	0.679	546	2.23	618	2.11	690	0.639	762	0.0796	834	0.00969
403	0.0589	475	0.654	547	2.24	619	2.10	691	0.623	763	0.0776	835	0.00938
404	0.0633	476	0.638	548	2.25	620	2.08	692	0.607	764	0.0752	836	0.00879
405	0.0669	477	0.624	549	2.26	621	2.07	693	0.593	765	0.0728	837	0.00884
406	0.0706	478	0.612	550	2.26	622	2.05	694	0.576	766	0.0708	838	0.00883
407	0.0769	479	0.603	551	2.27	623	2.03	695	0.561	767	0.0684	839	0.00892
408	0.0817	480	0.599	552	2.27	624	2.02	696	0.546	768	0.0667	840	0.00837
409	0.0882	481	0.595	553	2.29	625	2.00	697	0.532	769	0.0650	841	0.00856
410	0.0967	482	0.597	554	2.29	626	1.98	698	0.518	770	0.0630	842	0.00812
411	0.105	483	0.602	555	2.29	627	1.96	699	0.505	771	0.0607	843	0.00785
412	0.116	484	0.607	556	2.31	628	1.95	700	0.492	772	0.0586	844	0.00789
413	0.129	485	0.618	557	2.31	629	1.93	701	0.479	773	0.0568	845	0.00745
414	0.143	486	0.631	558	2.32	630	1.91	702	0.466	774	0.0557	846	0.00730
415	0.156	487	0.643	559	2.32	631	1.89	703	0.452	775	0.0540	847	0.00679
416	0.174	488	0.664	560	2.33	632	1.87	704	0.441	776	0.0522	848	0.00705
417	0.193	489	0.688	561	2.34	633	1.85	705	0.429	777	0.0508	849	0.00685
418	0.215	490	0.713	562	2.34	634	1.83	706	0.418	778	0.0493	850	0.00650
419	0.239	491	0.745	563	2.35	635	1.81	707	0.406	779	0.0476		
420	0.267	492	0.774	564	2.35	636	1.79	708	0.396	780	0.0464		
421	0.298	493	0.808	565	2.36	637	1.77	709	0.385	781	0.0450		



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

## 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  
FLUID VIEW™ 12v LED Tape Light DI-12V-FV42-80XX  
Project Number  
10460077  
Test Number  
758908

Test Date

2014-09-22

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

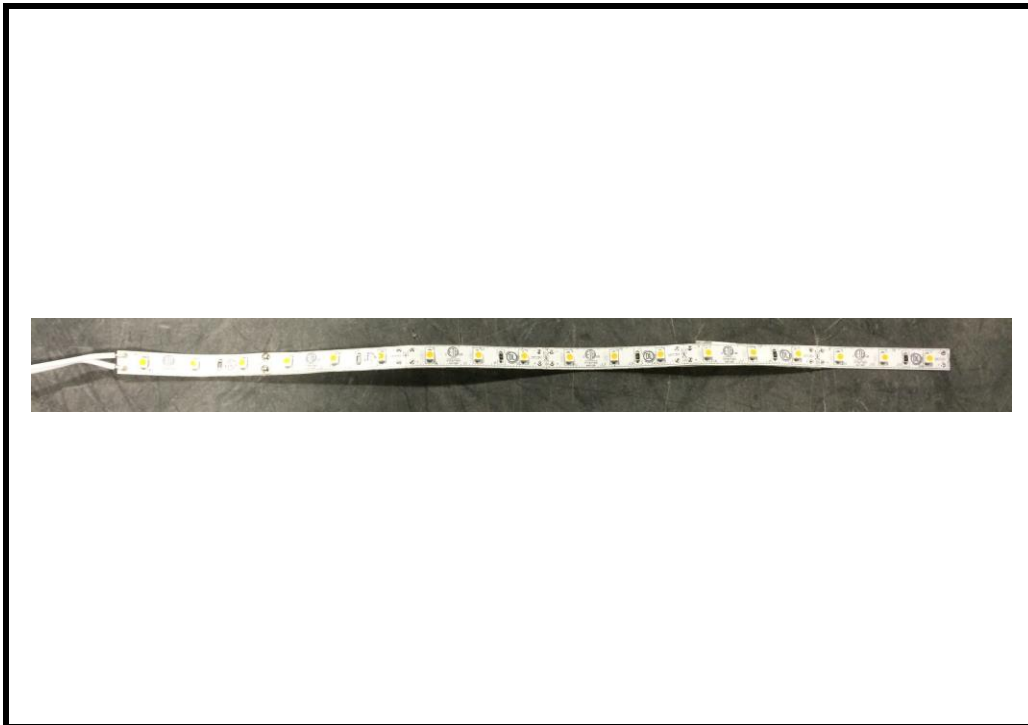
The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



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

Luminaire Description: LED strip  
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV42-80XX  
Lamp: 18 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

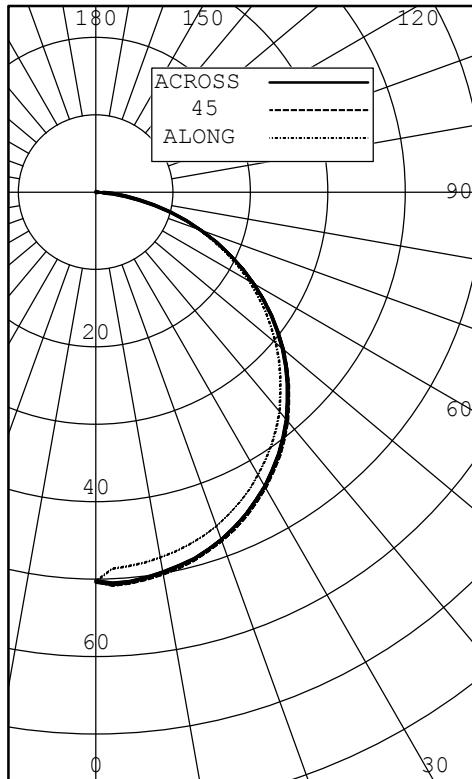


Test Conditions

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.05164 A
Power:	2.411 W
Power Factor:	0.389
Frequency:	60 Hz
Current THD:	165 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	50	50	50	50	50	
5	49	50	51	50	51	5
10	48	50	50	50	50	
15	47	49	49	49	49	14
20	46	47	48	47	48	
25	44	46	46	46	46	21
30	42	44	44	44	44	
35	40	41	42	41	41	26
40	37	38	39	38	38	
45	34	35	35	35	35	27
50	30	32	32	31	32	
55	27	28	28	28	28	25
60	23	24	24	24	24	
65	19	19	19	19	19	19
70	14	15	15	15	15	
75	10	10	10	10	10	11
80	6	6	6	6	6	
85	2	2	2	2	2	3
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	40	26.57
0-40	65	43.77
0-60	117	78.31
0-90	149	100.00
40-90	84	56.23
60-90	32	21.69
90-180	0	0.00
0-180	149	100.00

EFFICACY (LUMENS PER WATT): 64.8

\*\*\* 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	16440	17236	17138
55	16033	16758	16697
65	15118	15744	15667
75	12975	13457	13426
85	9090	9509	9124

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	50	50	50	50	50	50	
2.5	49	50	51	51	51	50	
5.0	49	50	51	50	51	50	5
7.5	48	50	51	50	50	50	
10.0	48	50	50	50	50	50	
12.5	48	49	50	49	50	49	
15.0	47	49	49	49	49	49	14
17.5	47	48	49	48	48	48	
20.0	46	47	48	47	48	47	
22.5	45	47	47	47	47	47	
25.0	44	46	46	46	46	46	21
27.5	43	45	45	45	45	45	
30.0	42	44	44	44	44	44	
32.5	41	42	43	42	43	42	
35.0	40	41	42	41	41	41	26
37.5	38	40	40	40	40	40	
40.0	37	38	39	38	38	38	
42.5	35	37	37	37	37	37	
45.0	34	35	35	35	35	35	27
47.5	32	33	34	33	33	33	
50.0	30	32	32	31	32	31	
52.5	29	30	30	30	30	30	
55.0	27	28	28	28	28	28	25
57.5	25	26	26	26	26	26	
60.0	23	24	24	24	24	23	
62.5	21	21	22	21	21	21	
65.0	19	19	19	19	19	19	19
67.5	16	17	17	17	17	17	
70.0	14	15	15	15	15	15	
72.5	12	12	12	12	12	12	
75.0	10	10	10	10	10	10	11
77.5	8	8	8	8	8	8	
80.0	6	6	6	6	6	6	
82.5	4	4	4	4	4	4	
85.0	2	2	2	2	2	2	3
87.5	1	1	1	1	1	1	
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	1.131	.081	.041	.00	1.101	.061	.020	.98	1.071	.041	.000	.97	0.990	.960	.94	0.950	.930	.91	0.920	.900	.88	0.86			
	2	1.030	.950	.890	.82	1.010	.930	.870	.81	0.980	.910	.850	.81	0.880	.830	.79	0.850	.810	.77	0.820	.780	.75	0.73			
	3	0.940	.830	.750	.69	0.920	.820	.740	.68	0.900	.800	.730	.68	0.780	.720	.67	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	.620	.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	0.590	.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	.420	.37	0.480	.420	.37	0.470	.410	.37	0.35			
	8	0.620	.480	.400	.34	0.610	.470	.390	.33	0.590	.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	.28	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	3.16	5.13
6.00	1.40	7.69
8.00	0.790	10.3
10.0	0.506	12.8
12.0	0.351	15.4
14.0	0.258	17.9
16.0	0.198	20.5

**Cone of Light Plot**

