



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-FV27-80XX

Order Number  
10460077  
Test Number  
758901

Test Date

2014-09-22

Prepared By

*Javier Caban*

Javier Caban, Technician

Approved By

*Eric M. Gaudreau*

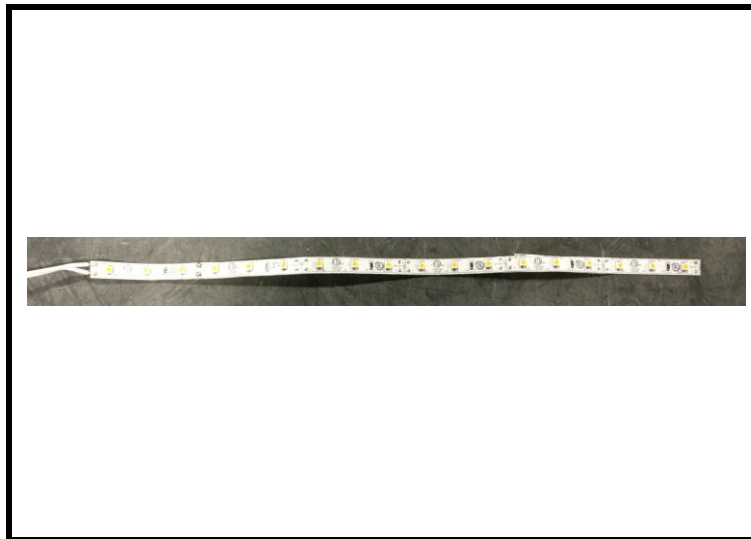
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.  
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Luminaire Description: LED strip  
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV27-80XX  
Lamp: 18 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



#### Summary of Results

Radiant Flux:	393.9 mW
Luminous Flux:	118.4 Lumens
Luminaire Efficacy:	50.2 Lumens/Watt
CCT:	2672 K
CRI (Ra):	83.5
Chromaticity (x):	0.4600
Chromaticity (y):	0.4075
Chromaticity (u):	0.2640
Chromaticity (v):	0.3508
Duv:	-0.0016

#### Test Conditions

Test Temperature:	24.5 °C
Voltage:	120.0 VAC
Current:	0.05410 A
Power:	2.360 W
Power Factor:	0.363
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.

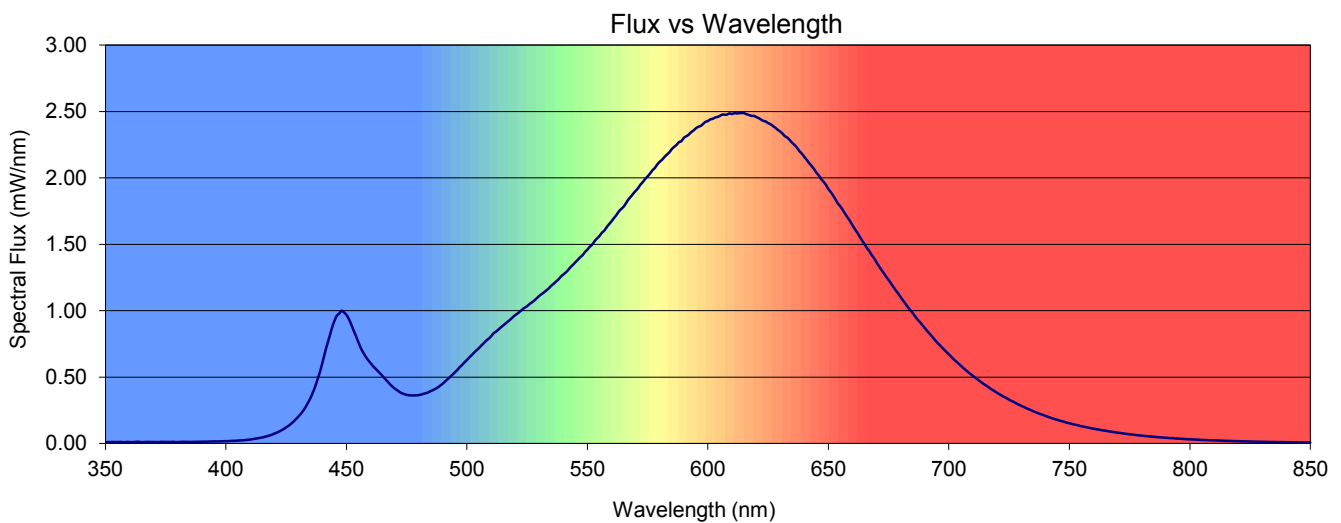
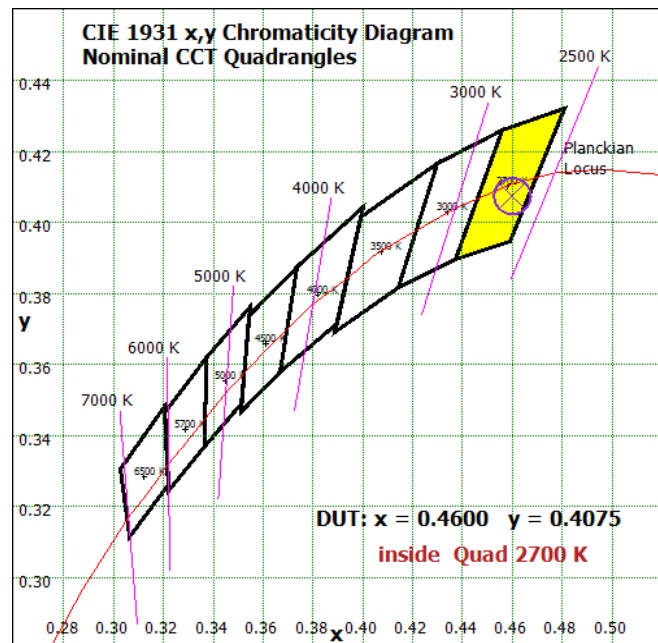
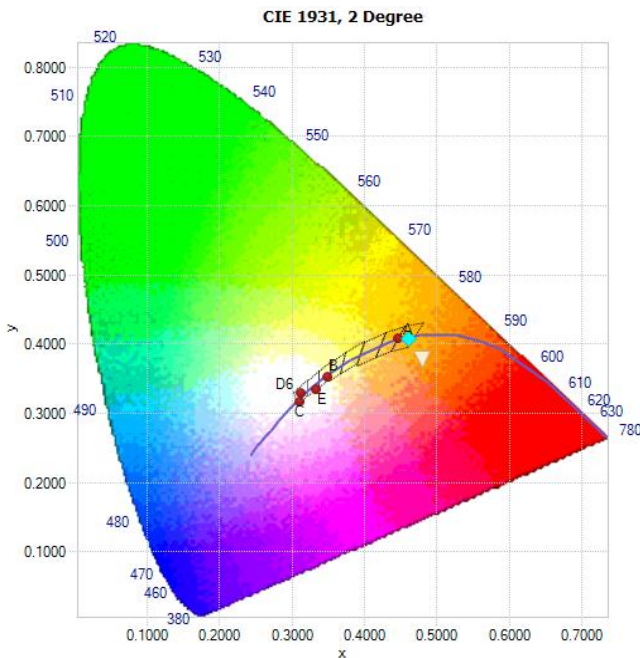


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4600	0.4075	0.2640	0.3508	0.2640	0.5262	-0.0016

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.5	81.8	90.6	96.9	80.6	81.2	87.7	84.8	64.6	23.6	78.2	78.5	73.1	83.4	98.3





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	0.00877	422	0.0895	494	0.518	566	1.81	638	2.20	710	0.509	782	0.0559
351	0.0116	423	0.0992	495	0.536	567	1.84	639	2.18	711	0.494	783	0.0538
352	0.0106	424	0.109	496	0.553	568	1.86	640	2.16	712	0.482	784	0.0523
353	0.0118	425	0.122	497	0.574	569	1.88	641	2.14	713	0.468	785	0.0509
354	0.0112	426	0.133	498	0.591	570	1.90	642	2.11	714	0.454	786	0.0489
355	0.0111	427	0.148	499	0.611	571	1.92	643	2.09	715	0.442	787	0.0471
356	0.0121	428	0.164	500	0.629	572	1.95	644	2.07	716	0.430	788	0.0461
357	0.0111	429	0.182	501	0.648	573	1.97	645	2.04	717	0.416	789	0.0446
358	0.0101	430	0.201	502	0.666	574	1.99	646	2.02	718	0.405	790	0.0434
359	0.0119	431	0.222	503	0.685	575	2.01	647	1.99	719	0.394	791	0.0421
360	0.0111	432	0.245	504	0.702	576	2.03	648	1.97	720	0.382	792	0.0409
361	0.0105	433	0.272	505	0.718	577	2.06	649	1.95	721	0.371	793	0.0403
362	0.0115	434	0.305	506	0.738	578	2.07	650	1.92	722	0.360	794	0.0384
363	0.0131	435	0.339	507	0.755	579	2.10	651	1.89	723	0.351	795	0.0370
364	0.0130	436	0.380	508	0.774	580	2.12	652	1.87	724	0.341	796	0.0359
365	0.0104	437	0.427	509	0.788	581	2.14	653	1.84	725	0.331	797	0.0347
366	0.0109	438	0.481	510	0.806	582	2.16	654	1.81	726	0.320	798	0.0337
367	0.0118	439	0.538	511	0.829	583	2.18	655	1.78	727	0.312	799	0.0323
368	0.0123	440	0.604	512	0.841	584	2.19	656	1.76	728	0.302	800	0.0316
369	0.0111	441	0.677	513	0.857	585	2.22	657	1.73	729	0.293	801	0.0308
370	0.0118	442	0.743	514	0.873	586	2.23	658	1.70	730	0.284	802	0.0301
371	0.0108	443	0.805	515	0.888	587	2.25	659	1.67	731	0.276	803	0.0293
372	0.0110	444	0.868	516	0.903	588	2.27	660	1.64	732	0.267	804	0.0282
373	0.0121	445	0.921	517	0.918	589	2.28	661	1.61	733	0.259	805	0.0267
374	0.0121	446	0.961	518	0.933	590	2.30	662	1.59	734	0.251	806	0.0265
375	0.0116	447	0.978	519	0.950	591	2.31	663	1.56	735	0.243	807	0.0255
376	0.0119	448	0.999	520	0.966	592	2.32	664	1.53	736	0.236	808	0.0247
377	0.0112	449	0.988	521	0.979	593	2.34	665	1.50	737	0.228	809	0.0241
378	0.0130	450	0.969	522	0.993	594	2.36	666	1.47	738	0.222	810	0.0235
379	0.0111	451	0.938	523	1.01	595	2.37	667	1.45	739	0.216	811	0.0230
380	0.0106	452	0.897	524	1.02	596	2.38	668	1.42	740	0.208	812	0.0222
381	0.0118	453	0.851	525	1.03	597	2.39	669	1.39	741	0.202	813	0.0214
382	0.0130	454	0.808	526	1.05	598	2.41	670	1.36	742	0.196	814	0.0209
383	0.0122	455	0.762	527	1.06	599	2.42	671	1.33	743	0.189	815	0.0200
384	0.0125	456	0.718	528	1.08	600	2.43	672	1.31	744	0.184	816	0.0195
385	0.0114	457	0.685	529	1.09	601	2.44	673	1.28	745	0.178	817	0.0190
386	0.0120	458	0.654	530	1.11	602	2.44	674	1.26	746	0.172	818	0.0185
387	0.0124	459	0.629	531	1.12	603	2.45	675	1.23	747	0.168	819	0.0182
388	0.0126	460	0.606	532	1.14	604	2.46	676	1.20	748	0.163	820	0.0179
389	0.0131	461	0.584	533	1.15	605	2.47	677	1.18	749	0.157	821	0.0169
390	0.0135	462	0.565	534	1.17	606	2.48	678	1.15	750	0.153	822	0.0163
391	0.0142	463	0.547	535	1.19	607	2.48	679	1.13	751	0.148	823	0.0159
392	0.0138	464	0.528	536	1.20	608	2.48	680	1.10	752	0.143	824	0.0156
393	0.0145	465	0.508	537	1.22	609	2.49	681	1.08	753	0.139	825	0.0148
394	0.0152	466	0.488	538	1.24	610	2.48	682	1.05	754	0.135	826	0.0148
395	0.0160	467	0.469	539	1.26	611	2.49	683	1.03	755	0.130	827	0.0140
396	0.0153	468	0.448	540	1.27	612	2.48	684	1.00	756	0.127	828	0.0138
397	0.0157	469	0.430	541	1.29	613	2.49	685	0.982	757	0.123	829	0.0131
398	0.0168	470	0.415	542	1.31	614	2.49	686	0.957	758	0.119	830	0.0131
399	0.0172	471	0.402	543	1.33	615	2.49	687	0.934	759	0.115	831	0.0126
400	0.0179	472	0.389	544	1.35	616	2.48	688	0.914	760	0.112	832	0.0122
401	0.0177	473	0.379	545	1.36	617	2.47	689	0.891	761	0.108	833	0.0121
402	0.0197	474	0.372	546	1.38	618	2.47	690	0.869	762	0.106	834	0.0114
403	0.0202	475	0.366	547	1.40	619	2.47	691	0.848	763	0.102	835	0.0116
404	0.0207	476	0.363	548	1.42	620	2.46	692	0.827	764	0.0985	836	0.0108
405	0.0220	477	0.362	549	1.44	621	2.45	693	0.807	765	0.0963	837	0.0109
406	0.0234	478	0.362	550	1.46	622	2.44	694	0.784	766	0.0929	838	0.0106
407	0.0238	479	0.363	551	1.48	623	2.43	695	0.763	767	0.0900	839	0.0103
408	0.0259	480	0.365	552	1.50	624	2.42	696	0.745	768	0.0873	840	0.00988
409	0.0279	481	0.368	553	1.52	625	2.41	697	0.726	769	0.0841	841	0.00965
410	0.0299	482	0.374	554	1.54	626	2.40	698	0.708	770	0.0818	842	0.00945
411	0.0325	483	0.379	555	1.56	627	2.39	699	0.689	771	0.0794	843	0.00916
412	0.0358	484	0.386	556	1.59	628	2.38	700	0.671	772	0.0769	844	0.00870
413	0.0385	485	0.395	557	1.60	629	2.36	701	0.653	773	0.0741	845	0.00883
414	0.0421	486	0.403	558	1.63	630	2.35	702	0.634	774	0.0718	846	0.00833
415	0.0452	487	0.413	559	1.65	631	2.33	703	0.618	775	0.0695	847	0.00797
416	0.0498	488	0.423	560	1.67	632	2.31	704	0.602	776	0.0677	848	0.00775
417	0.0542	489	0.437	561	1.70	633	2.30	705	0.586	777	0.0657	849	0.00776
418	0.0603	490	0.451	562	1.72	634	2.28	706	0.569	778	0.0630	850	0.00759
419	0.0659	491	0.468	563	1.75	635	2.26	707	0.552	779	0.0614		
420	0.0734	492	0.484	564	1.76	636	2.25	708	0.538	780	0.0591		
421	0.0812	493	0.501	565	1.78	637	2.23	709	0.523	781	0.0573		



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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  
FLUID VIEW™ 12v LED Tape Light DI-12V-FV27-80XX  
Project Number  
10460077  
Test Number  
758900

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

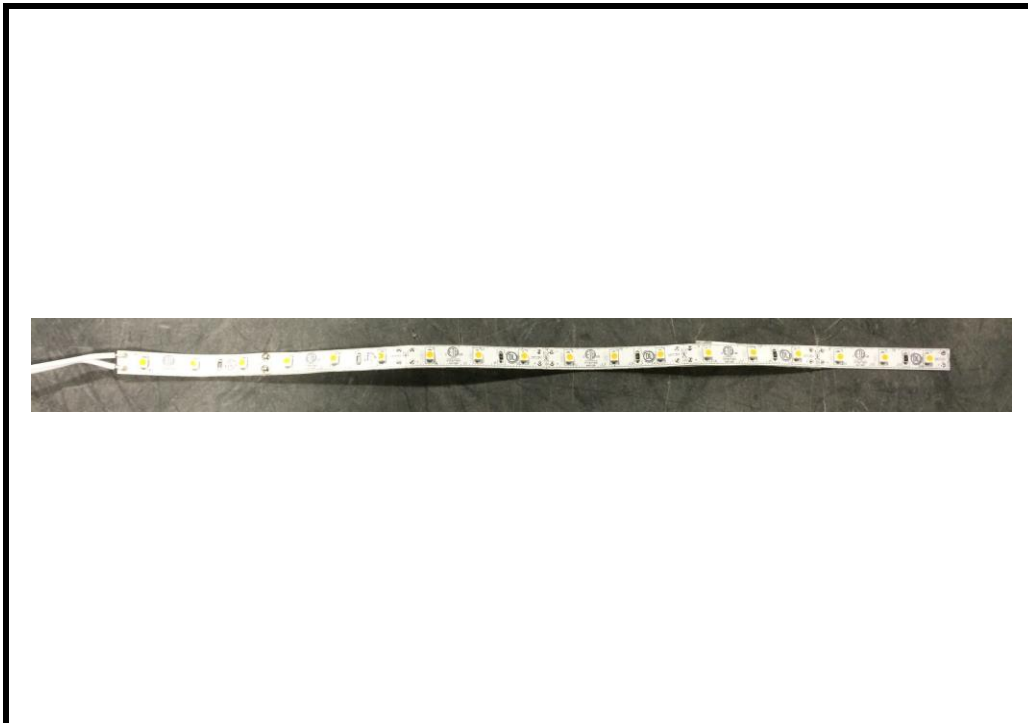
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Luminaire Description: LED strip  
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV27-80XX  
Lamp: 18 white LEDs  
Mounting: Surface  
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

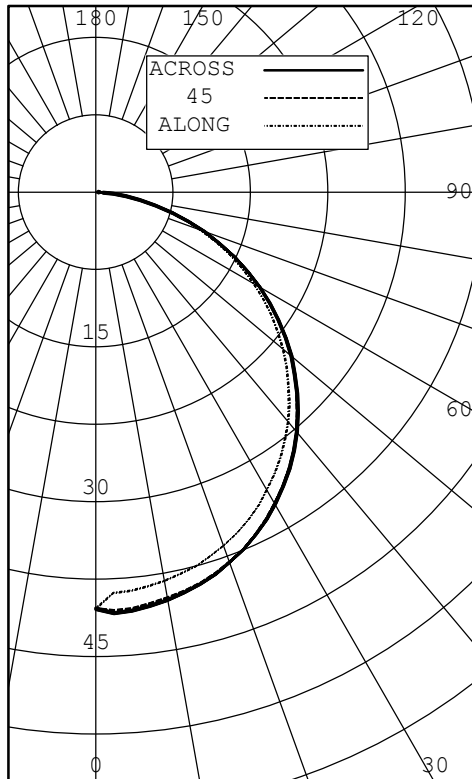


Test Conditions

Test Temperature:	24.7 °C
Voltage:	120.0 VAC
Current:	0.05136 A
Power:	2.394 W
Power Factor:	0.388
Frequency:	60 Hz
Current THD:	165 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	40	40	40	40	40	
5	39	40	41	40	41	4
10	38	40	40	40	40	
15	38	39	39	39	39	11
20	36	38	38	38	38	
25	35	37	37	36	37	17
30	33	35	35	35	35	
35	31	33	33	33	33	20
40	29	30	30	30	30	
45	26	28	28	27	28	21
50	24	25	25	25	25	
55	21	22	22	22	22	19
60	18	18	18	18	18	
65	14	15	15	15	15	15
70	11	11	11	11	11	
75	7	8	8	8	8	8
80	4	5	5	4	4	
85	2	2	2	2	2	2
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	32	26.97
0-40	52	44.27
0-60	92	78.66
0-90	117	100.00
40-90	65	55.73
60-90	25	21.34
90-180	0	0.00
0-180	117	100.00

EFFICACY (LUMENS PER WATT): 48.8

\*\*\* 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	12859	13471	13495
55	12460	13020	13020
65	11654	12186	12149
75	9914	10393	10286
85	6323	7330	6942

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	40	40	40	40	40	40	
2.5	39	41	41	41	41	40	
5.0	39	40	41	40	41	40	4
7.5	39	40	40	40	40	40	
10.0	38	40	40	40	40	40	
12.5	38	40	40	40	40	39	
15.0	38	39	39	39	39	39	11
17.5	37	39	39	39	39	38	
20.0	36	38	38	38	38	38	
22.5	36	37	37	37	37	37	
25.0	35	37	37	36	37	36	17
27.5	34	36	36	36	36	35	
30.0	33	35	35	35	35	35	
32.5	32	34	34	34	34	34	
35.0	31	33	33	33	33	32	20
37.5	30	31	32	31	32	31	
40.0	29	30	30	30	30	30	
42.5	28	29	29	29	29	29	
45.0	26	28	28	27	28	27	21
47.5	25	26	26	26	26	26	
50.0	24	25	25	25	25	25	
52.5	22	23	23	23	23	23	
55.0	21	22	22	22	22	21	19
57.5	19	20	20	20	20	20	
60.0	18	18	18	18	18	18	
62.5	16	17	17	17	17	17	
65.0	14	15	15	15	15	15	15
67.5	13	13	13	13	13	13	
70.0	11	11	11	11	11	11	
72.5	9	10	10	10	10	9	
75.0	7	8	8	8	8	8	8
77.5	6	6	6	6	6	6	
80.0	4	5	5	4	4	4	
82.5	3	3	3	3	3	3	
85.0	2	2	2	2	2	2	2
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	.06	1.021	.021	.02	1.00		
1	1.121	.071	.030	.99	1.101	.051	.010	.97	1.071	.030	.990	.96	0.980	.960	.93	0.950	.920	.90	0.910	.890	.87	0.85			
2	1.030	.950	.880	.82	1.000	.930	.870	.81	0.980	.910	.850	.80	0.870	.820	.78	0.840	.800	.76	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	.44	0.560	.490	.43	0.540	.480	.43	0.530	.470	.42	0.40			
7	0.670	.530	.440	.39	0.660	.530	.440	.38	0.640	.520	.440	.38	0.500	.430	.38	0.490	.420	.37	0.470	.410	.37	0.35			
8	0.630	.480	.400	.34	0.610	.480	.390	.34	0.600	.470	.390	.33	0.460	.380	.33	0.440	.380	.33	0.430	.370	.33	0.31			
9	0.580	.440	.350	.29	0.570	.430	.350	.29	0.550	.430	.350	.29	0.410	.340	.29	0.400	.340	.29	0.390	.330	.29	0.27			
10	0.540	.400	.310	.26	0.530	.400	.310	.26	0.510	.390	.310	.26	0.380	.310	.26	0.370	.300	.26	0.360	.300	.26	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	2.53	5.07
6.00	1.13	7.61
8.00	0.633	10.1
10.0	0.405	12.7
12.0	0.281	15.2
14.0	0.207	17.8
16.0	0.158	20.3

**Cone of Light Plot**

