



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-FV63-80XX

Order Number
10460077
Test Number
758913

Test Date

2014-09-23

Prepared By

Javier Caban

Javier Caban, Technician

Approved By

Eric M. Gaudreau

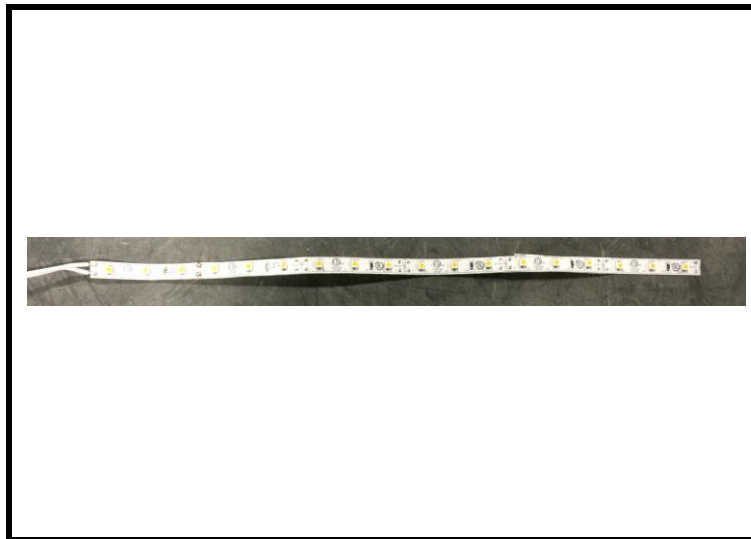
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED strip
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV63-80XX
Lamp: 18 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



Summary of Results

Radiant Flux: 452.5 mW
Luminous Flux: 141.8 Lumens
Luminaire Efficacy: 65.6 Lumens/Watt
CCT: 6074 K
CRI (Ra): 81.8
Chromaticity (x): 0.3200
Chromaticity (y): 0.3381
Chromaticity (u): 0.1995
Chromaticity (v): 0.3161
Duv: 0.0038

Test Conditions

Test Temperature: 25.0 °C
Voltage: 120.0 VAC
Current: 0.05070 A
Power: 2.160 W
Power Factor: 0.356
Frequency: 60 Hz
Current THD: 166 %

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

Absorption correction was employed for this measurement.

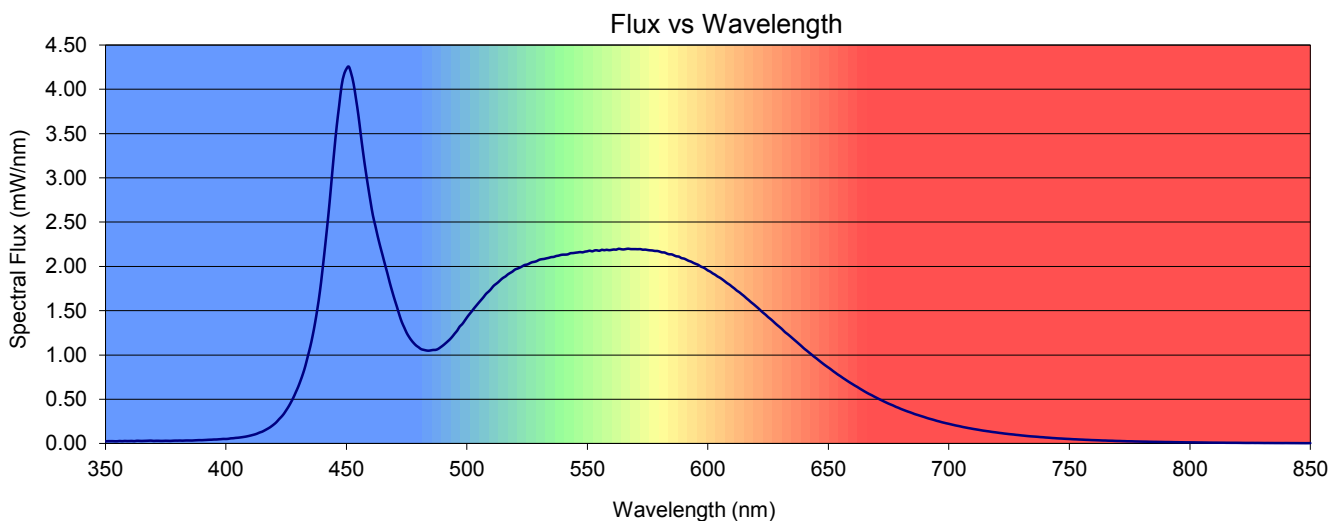
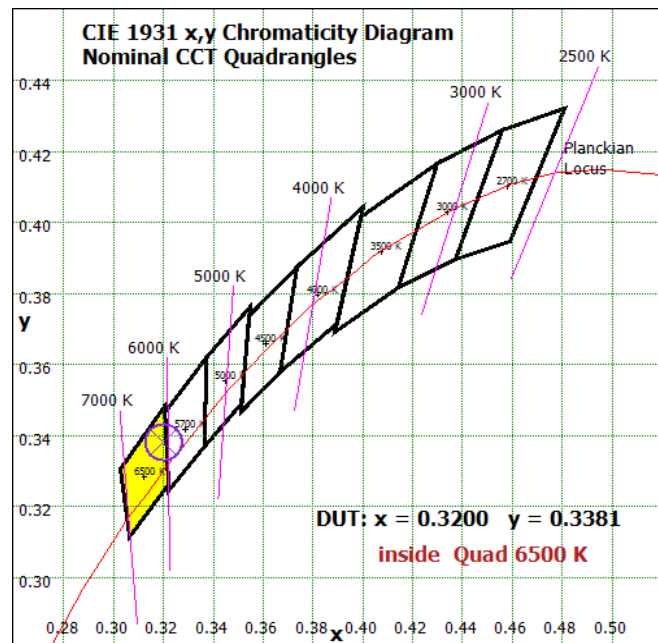
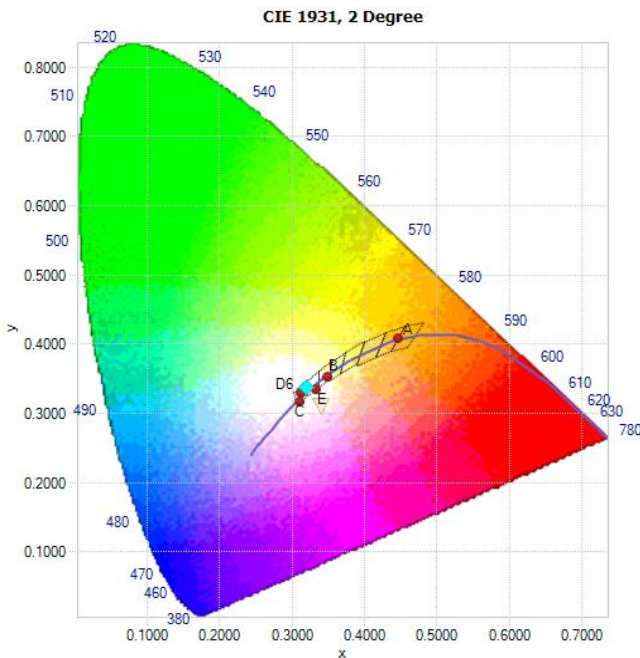


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.3200	0.3381	0.1995	0.3161	0.1995	0.4742	0.0038

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.8	79.5	86.6	90.7	81.2	80.3	80.9	87.4	67.5	0.8	67.5	79.8	57.2	81.5	95.1





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	0.0237	422	0.273	494	1.21	566	2.20	638	1.12	710	0.165	782	0.0209
351	0.0263	423	0.301	495	1.24	567	2.20	639	1.10	711	0.161	783	0.0200
352	0.0265	424	0.333	496	1.28	568	2.20	640	1.07	712	0.156	784	0.0194
353	0.0265	425	0.374	497	1.32	569	2.20	641	1.05	713	0.151	785	0.0186
354	0.0254	426	0.417	498	1.35	570	2.20	642	1.03	714	0.147	786	0.0186
355	0.0257	427	0.466	499	1.38	571	2.19	643	1.01	715	0.143	787	0.0180
356	0.0283	428	0.518	500	1.42	572	2.20	644	0.982	716	0.139	788	0.0176
357	0.0264	429	0.579	501	1.46	573	2.19	645	0.962	717	0.135	789	0.0171
358	0.0288	430	0.640	502	1.49	574	2.19	646	0.940	718	0.131	790	0.0166
359	0.0278	431	0.712	503	1.53	575	2.19	647	0.918	719	0.127	791	0.0166
360	0.0281	432	0.789	504	1.56	576	2.18	648	0.897	720	0.124	792	0.0161
361	0.0289	433	0.878	505	1.59	577	2.18	649	0.877	721	0.120	793	0.0154
362	0.0269	434	0.986	506	1.62	578	2.17	650	0.858	722	0.117	794	0.0149
363	0.0307	435	1.09	507	1.66	579	2.17	651	0.839	723	0.113	795	0.0146
364	0.0302	436	1.22	508	1.69	580	2.17	652	0.817	724	0.110	796	0.0141
365	0.0290	437	1.36	509	1.72	581	2.16	653	0.798	725	0.106	797	0.0138
366	0.0297	438	1.53	510	1.74	582	2.16	654	0.778	726	0.104	798	0.0131
367	0.0306	439	1.71	511	1.78	583	2.15	655	0.760	727	0.101	799	0.0130
368	0.0319	440	1.94	512	1.80	584	2.14	656	0.741	728	0.0976	800	0.0130
369	0.0326	441	2.18	513	1.82	585	2.14	657	0.723	729	0.0952	801	0.0126
370	0.0295	442	2.44	514	1.85	586	2.12	658	0.705	730	0.0917	802	0.0125
371	0.0306	443	2.71	515	1.87	587	2.11	659	0.688	731	0.0893	803	0.0120
372	0.0307	444	3.02	516	1.89	588	2.11	660	0.671	732	0.0862	804	0.0116
373	0.0296	445	3.32	517	1.91	589	2.09	661	0.654	733	0.0835	805	0.0114
374	0.0298	446	3.59	518	1.93	590	2.09	662	0.639	734	0.0811	806	0.0109
375	0.0309	447	3.81	519	1.94	591	2.08	663	0.621	735	0.0793	807	0.0106
376	0.0303	448	4.04	520	1.97	592	2.06	664	0.605	736	0.0774	808	0.0100
377	0.0298	449	4.16	521	1.98	593	2.05	665	0.589	737	0.0751	809	0.0100
378	0.0316	450	4.23	522	1.99	594	2.04	666	0.573	738	0.0727	810	0.00968
379	0.0328	451	4.26	523	2.00	595	2.03	667	0.558	739	0.0711	811	0.00962
380	0.0327	452	4.18	524	2.02	596	2.02	668	0.545	740	0.0684	812	0.00931
381	0.0335	453	4.06	525	2.02	597	2.00	669	0.530	741	0.0665	813	0.00912
382	0.0321	454	3.89	526	2.03	598	1.99	670	0.517	742	0.0643	814	0.00901
383	0.0337	455	3.70	527	2.05	599	1.97	671	0.502	743	0.0621	815	0.00852
384	0.0344	456	3.48	528	2.05	600	1.95	672	0.489	744	0.0604	816	0.00845
385	0.0341	457	3.27	529	2.06	601	1.94	673	0.476	745	0.0584	817	0.00819
386	0.0338	458	3.08	530	2.07	602	1.92	674	0.463	746	0.0570	818	0.00813
387	0.0357	459	2.90	531	2.08	603	1.91	675	0.450	747	0.0557	819	0.00807
388	0.0370	460	2.73	532	2.08	604	1.89	676	0.439	748	0.0539	820	0.00779
389	0.0383	461	2.58	533	2.09	605	1.87	677	0.428	749	0.0525	821	0.00742
390	0.0377	462	2.46	534	2.10	606	1.85	678	0.414	750	0.0513	822	0.00705
391	0.0392	463	2.34	535	2.10	607	1.83	679	0.404	751	0.0493	823	0.00675
392	0.0406	464	2.23	536	2.11	608	1.81	680	0.392	752	0.0480	824	0.00650
393	0.0426	465	2.13	537	2.12	609	1.79	681	0.381	753	0.0471	825	0.00655
394	0.0432	466	2.02	538	2.12	610	1.77	682	0.371	754	0.0454	826	0.00683
395	0.0450	467	1.92	539	2.13	611	1.75	683	0.361	755	0.0444	827	0.00644
396	0.0456	468	1.82	540	2.13	612	1.73	684	0.352	756	0.0430	828	0.00652
397	0.0475	469	1.72	541	2.13	613	1.71	685	0.341	757	0.0416	829	0.00621
398	0.0494	470	1.63	542	2.14	614	1.69	686	0.331	758	0.0407	830	0.00593
399	0.0517	471	1.54	543	2.15	615	1.67	687	0.323	759	0.0390	831	0.00556
400	0.0513	472	1.45	544	2.15	616	1.64	688	0.314	760	0.0383	832	0.00575
401	0.0532	473	1.37	545	2.15	617	1.62	689	0.306	761	0.0372	833	0.00553
402	0.0581	474	1.31	546	2.16	618	1.59	690	0.297	762	0.0364	834	0.00544
403	0.0596	475	1.25	547	2.16	619	1.57	691	0.288	763	0.0351	835	0.00525
404	0.0631	476	1.20	548	2.16	620	1.55	692	0.280	764	0.0341	836	0.00508
405	0.0654	477	1.16	549	2.17	621	1.53	693	0.272	765	0.0336	837	0.00517
406	0.0686	478	1.13	550	2.17	622	1.50	694	0.265	766	0.0323	838	0.00486
407	0.0727	479	1.11	551	2.18	623	1.48	695	0.256	767	0.0316	839	0.00494
408	0.0767	480	1.09	552	2.17	624	1.45	696	0.249	768	0.0309	840	0.00502
409	0.0821	481	1.07	553	2.18	625	1.43	697	0.241	769	0.0295	841	0.00475
410	0.0884	482	1.06	554	2.18	626	1.41	698	0.235	770	0.0286	842	0.00454
411	0.0953	483	1.05	555	2.18	627	1.38	699	0.228	771	0.0282	843	0.00456
412	0.103	484	1.05	556	2.19	628	1.36	700	0.222	772	0.0272	844	0.00433
413	0.112	485	1.05	557	2.18	629	1.33	701	0.215	773	0.0264	845	0.00429
414	0.124	486	1.06	558	2.19	630	1.31	702	0.209	774	0.0254	846	0.00391
415	0.133	487	1.06	559	2.18	631	1.29	703	0.203	775	0.0249	847	0.00397
416	0.147	488	1.07	560	2.19	632	1.26	704	0.198	776	0.0247	848	0.00373
417	0.162	489	1.09	561	2.19	633	1.24	705	0.192	777	0.0235	849	0.00395
418	0.178	490	1.11	562	2.19	634	1.21	706	0.185	778	0.0230	850	0.00433
419	0.197	491	1.13	563	2.20	635	1.19	707	0.181	779	0.0223		
420	0.218	492	1.15	564	2.19	636	1.17	708	0.175	780	0.0217		
421	0.242	493	1.18	565	2.19	637	1.14	709	0.170	781	0.0211		



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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
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Catalog Number
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Project Number
10460077
Test Number
758912

Test Date

2014-09-23

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

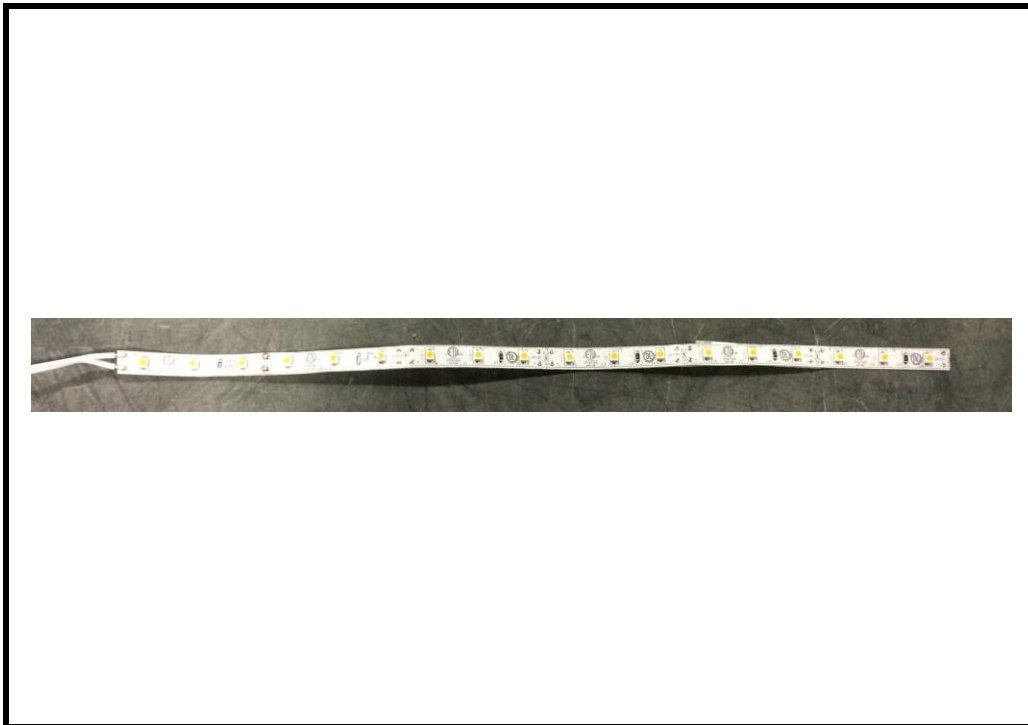
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Luminaire Description: LED strip
Catalog Number: FLUID VIEW™ 12v LED Tape Light DI-12V-FV63-80XX
Lamp: 18 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

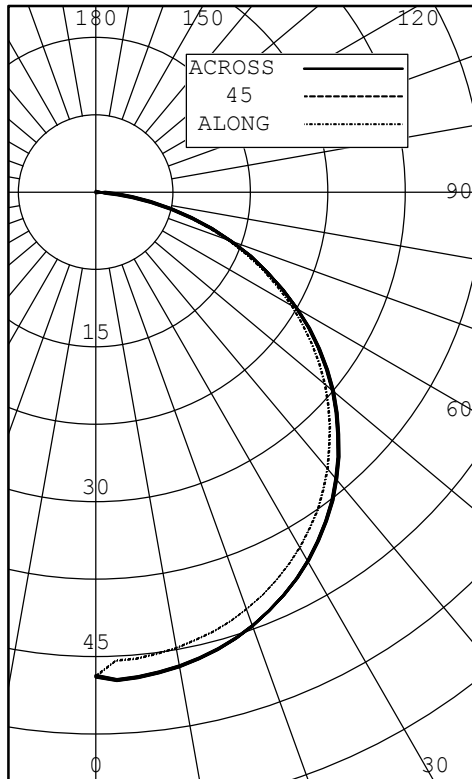


Test Conditions

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.04811 A
Power:	2.201 W
Power Factor:	0.381
Frequency:	60 Hz
Current THD:	160 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	47	47	47	47	47	
5	45	47	47	47	47	5
10	45	46	47	47	47	
15	44	46	46	46	46	13
20	43	44	45	45	45	
25	41	43	43	43	43	20
30	40	41	41	41	41	
35	38	39	39	39	39	24
40	35	36	36	36	36	
45	32	33	33	33	33	25
50	29	30	30	30	30	
55	26	26	26	27	26	23
60	22	23	23	23	23	
65	18	18	18	18	18	18
70	14	14	14	14	14	
75	9	10	10	10	10	10
80	5	6	6	6	5	
85	2	2	2	2	2	3
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	37	26.30
0-40	61	43.45
0-60	110	78.14
0-90	141	100.00
40-90	80	56.55
60-90	31	21.86
90-180	0	0.00
0-180	141	100.00

EFFICACY (LUMENS PER WATT): 64.1

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 12.000 INS
 WIDTH: 0.375 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.3
 SC: 1.3

ANGLE	ALONG	45	ACROSS
45	15612	16234	16234
55	15343	15854	15914
65	14588	15049	15012
75	12509	12858	12891
85	8101	8717	8529

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	47	47	47	47	47	47	
2.5	45	47	47	48	47	47	
5.0	45	47	47	47	47	47	5
7.5	45	47	47	47	47	47	
10.0	45	46	47	47	47	46	
12.5	45	46	46	46	46	46	
15.0	44	46	46	46	46	46	13
17.5	44	45	45	45	45	45	
20.0	43	44	45	45	45	44	
22.5	42	44	44	44	44	44	
25.0	41	43	43	43	43	43	20
27.5	41	42	42	42	42	42	
30.0	40	41	41	41	41	41	
32.5	39	40	40	40	40	40	
35.0	38	39	39	39	39	39	24
37.5	36	38	38	38	38	37	
40.0	35	36	36	36	36	36	
42.5	34	35	35	35	35	35	
45.0	32	33	33	33	33	33	25
47.5	31	32	32	32	32	32	
50.0	29	30	30	30	30	30	
52.5	27	28	28	28	28	28	
55.0	26	26	26	27	26	26	23
57.5	24	25	24	25	25	24	
60.0	22	23	23	23	23	22	
62.5	20	21	20	21	20	20	
65.0	18	18	18	18	18	18	18
67.5	16	16	16	16	16	16	
70.0	14	14	14	14	14	14	
72.5	12	12	12	12	12	12	
75.0	9	10	10	10	10	10	10
77.5	7	7	8	8	8	7	
80.0	5	6	6	6	5	5	
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	1.121	.071	.030	.99	1.091	.051	.010	.97	1.071	.030	.990	.95	0.980	.950	.92	0.940	.920	.90	0.910	.890	.87	0.85			
2	1.020	.940	.880	.81	1.000	.920	.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	.680	.64	0.62			
4	0.870	.740	.650	.59	0.840	.730	.650	.58	0.820	.720	.640	.58	0.690	.620	.57	0.670	.610	.56	0.650	.600	.56	0.53			
5	0.800	.660	.570	.50	0.780	.650	.560	.50	0.750	.640	.560	.50	0.620	.550	.49	0.600	.540	.49	0.580	.530	.48	0.46			
6	0.730	.590	.500	.44	0.710	.580	.500	.44	0.690	.570	.490	.43	0.560	.480	.43	0.540	.470	.42	0.520	.460	.42	0.40			
7	0.670	.530	.440	.38	0.660	.520	.440	.38	0.640	.510	.430	.37	0.500	.420	.37	0.480	.420	.37	0.470	.410	.36	0.34			
8	0.620	.480	.400	.33	0.610	.470	.390	.33	0.590	.470	.390	.33	0.450	.380	.33	0.440	.370	.33	0.430	.370	.32	0.30			
9	0.580	.440	.350	.29	0.560	.430	.350	.29	0.550	.420	.350	.29	0.410	.340	.29	0.400	.330	.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	2.94	5.17
6.00	1.31	7.76
8.00	0.735	10.3
10.0	0.470	12.9
12.0	0.327	15.5
14.0	0.240	18.1
16.0	0.184	20.7

Cone of Light Plot

