



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-BL33-80XX

Order Number
10460077
Test Number
758921

Test Date
2014-09-23

Prepared By

Javier Caban

Javier Caban, Technician

Approved By

Eric M. Gaudreau

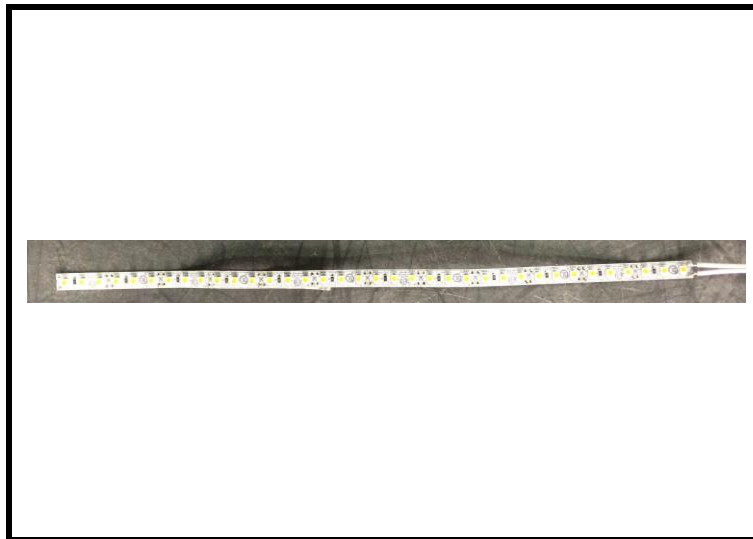
Eric Gaudreau, Engineering Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED strip
Catalog Number: BLAZE™ 12v LED Tape Light DI-12V-BL33-80XX
Lamp: 36 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire



Summary of Results

Radiant Flux:	919.0 mW
Luminous Flux:	302.0 Lumens
Luminaire Efficacy:	73.1 Lumens/Watt
CCT:	3329 K
CRI (Ra):	81.3
Chromaticity (x):	0.4141
Chromaticity (y):	0.3929
Chromaticity (u):	0.2405
Chromaticity (v):	0.3423
Duv:	-0.0009

Test Conditions

Test Temperature:	24.9 °C
Voltage:	120.0 VAC
Current:	0.08479 A
Power:	4.130 W
Power Factor:	0.406
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.

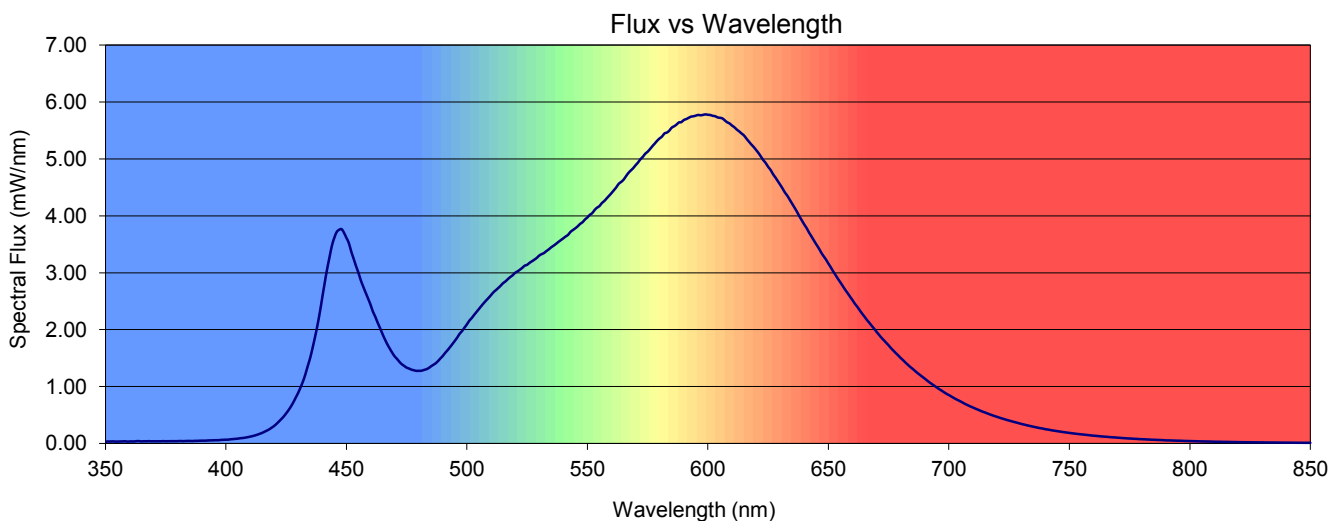
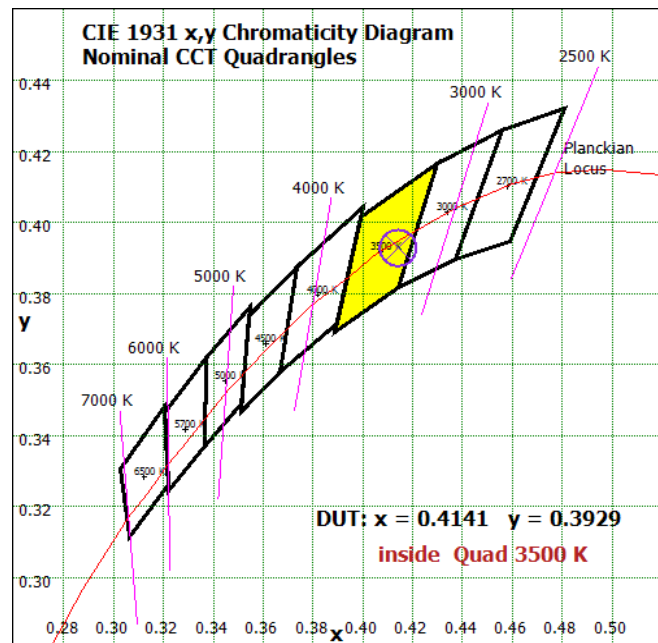
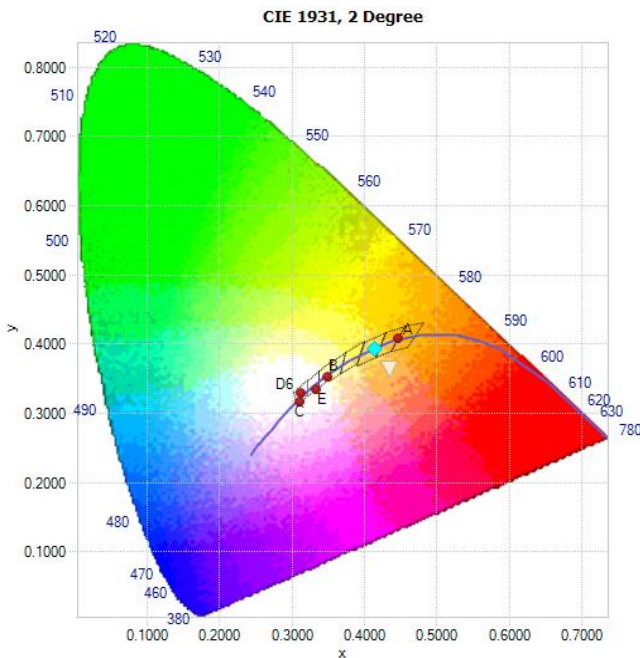


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4141	0.3929	0.2405	0.3423	0.2405	0.5135	-0.0009

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.3	79.2	88.9	95.8	79.4	79.5	85.4	83.2	59.1	2.5	74.2	77.9	68.2	81.3	97.9





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	0.0312	422	0.387	494	1.75	566	4.69	638	3.99	710	0.632	782	0.0718
351	0.0353	423	0.430	495	1.80	567	4.75	639	3.92	711	0.613	783	0.0699
352	0.0348	424	0.475	496	1.86	568	4.80	640	3.85	712	0.596	784	0.0672
353	0.0370	425	0.529	497	1.93	569	4.84	641	3.78	713	0.577	785	0.0658
354	0.0347	426	0.587	498	1.98	570	4.89	642	3.70	714	0.560	786	0.0637
355	0.0338	427	0.651	499	2.04	571	4.94	643	3.64	715	0.545	787	0.0624
356	0.0362	428	0.725	500	2.09	572	4.99	644	3.57	716	0.528	788	0.0609
357	0.0361	429	0.808	501	2.16	573	5.04	645	3.50	717	0.512	789	0.0591
358	0.0393	430	0.891	502	2.20	574	5.09	646	3.43	718	0.497	790	0.0555
359	0.0342	431	0.988	503	2.26	575	5.13	647	3.36	719	0.482	791	0.0546
360	0.0356	432	1.09	504	2.31	576	5.17	648	3.29	720	0.469	792	0.0538
361	0.0370	433	1.22	505	2.36	577	5.22	649	3.23	721	0.454	793	0.0518
362	0.0363	434	1.37	506	2.42	578	5.27	650	3.16	722	0.440	794	0.0510
363	0.0418	435	1.51	507	2.47	579	5.32	651	3.10	723	0.428	795	0.0495
364	0.0419	436	1.68	508	2.51	580	5.36	652	3.02	724	0.415	796	0.0486
365	0.0369	437	1.87	509	2.56	581	5.39	653	2.96	725	0.403	797	0.0469
366	0.0401	438	2.08	510	2.61	582	5.45	654	2.89	726	0.391	798	0.0450
367	0.0387	439	2.31	511	2.66	583	5.46	655	2.83	727	0.380	799	0.0440
368	0.0415	440	2.57	512	2.69	584	5.50	656	2.76	728	0.368	800	0.0428
369	0.0387	441	2.82	513	2.73	585	5.55	657	2.70	729	0.357	801	0.0417
370	0.0399	442	3.06	514	2.77	586	5.57	658	2.64	730	0.345	802	0.0408
371	0.0385	443	3.27	515	2.82	587	5.60	659	2.58	731	0.335	803	0.0392
372	0.0399	444	3.48	516	2.85	588	5.64	660	2.52	732	0.325	804	0.0378
373	0.0390	445	3.62	517	2.89	589	5.65	661	2.46	733	0.314	805	0.0367
374	0.0415	446	3.72	518	2.92	590	5.68	662	2.40	734	0.305	806	0.0364
375	0.0396	447	3.75	519	2.96	591	5.70	663	2.34	735	0.295	807	0.0354
376	0.0401	448	3.77	520	3.00	592	5.72	664	2.28	736	0.287	808	0.0346
377	0.0408	449	3.70	521	3.02	593	5.74	665	2.23	737	0.277	809	0.0338
378	0.0412	450	3.61	522	3.05	594	5.75	666	2.17	738	0.269	810	0.0319
379	0.0408	451	3.52	523	3.09	595	5.76	667	2.12	739	0.262	811	0.0309
380	0.0417	452	3.38	524	3.12	596	5.77	668	2.07	740	0.252	812	0.0309
381	0.0442	453	3.25	525	3.14	597	5.77	669	2.02	741	0.246	813	0.0299
382	0.0416	454	3.12	526	3.17	598	5.77	670	1.96	742	0.238	814	0.0287
383	0.0431	455	3.00	527	3.20	599	5.78	671	1.91	743	0.230	815	0.0285
384	0.0449	456	2.86	528	3.23	600	5.77	672	1.86	744	0.224	816	0.0281
385	0.0450	457	2.76	529	3.26	601	5.77	673	1.82	745	0.217	817	0.0266
386	0.0436	458	2.65	530	3.30	602	5.76	674	1.77	746	0.211	818	0.0263
387	0.0462	459	2.55	531	3.33	603	5.75	675	1.72	747	0.204	819	0.0258
388	0.0470	460	2.44	532	3.35	604	5.73	676	1.67	748	0.198	820	0.0247
389	0.0486	461	2.32	533	3.38	605	5.72	677	1.63	749	0.192	821	0.0235
390	0.0502	462	2.23	534	3.41	606	5.71	678	1.59	750	0.186	822	0.0232
391	0.0498	463	2.12	535	3.45	607	5.68	679	1.55	751	0.180	823	0.0224
392	0.0517	464	2.02	536	3.48	608	5.64	680	1.50	752	0.175	824	0.0225
393	0.0542	465	1.92	537	3.51	609	5.62	681	1.46	753	0.170	825	0.0221
394	0.0556	466	1.83	538	3.54	610	5.59	682	1.42	754	0.165	826	0.0213
395	0.0566	467	1.74	539	3.57	611	5.56	683	1.38	755	0.161	827	0.0207
396	0.0587	468	1.67	540	3.60	612	5.51	684	1.34	756	0.156	828	0.0206
397	0.0585	469	1.60	541	3.64	613	5.48	685	1.31	757	0.152	829	0.0194
398	0.0632	470	1.53	542	3.67	614	5.44	686	1.27	758	0.147	830	0.0196
399	0.0653	471	1.49	543	3.72	615	5.41	687	1.24	759	0.142	831	0.0189
400	0.0675	472	1.44	544	3.75	616	5.36	688	1.20	760	0.138	832	0.0187
401	0.0685	473	1.39	545	3.78	617	5.31	689	1.17	761	0.134	833	0.0176
402	0.0744	474	1.36	546	3.82	618	5.25	690	1.14	762	0.131	834	0.0177
403	0.0781	475	1.33	547	3.86	619	5.21	691	1.11	763	0.126	835	0.0173
404	0.0819	476	1.32	548	3.89	620	5.16	692	1.07	764	0.123	836	0.0167
405	0.0861	477	1.30	549	3.94	621	5.10	693	1.04	765	0.119	837	0.0163
406	0.0933	478	1.29	550	3.97	622	5.04	694	1.01	766	0.116	838	0.0161
407	0.0967	479	1.28	551	4.02	623	4.98	695	0.984	767	0.112	839	0.0160
408	0.103	480	1.28	552	4.05	624	4.93	696	0.955	768	0.109	840	0.0150
409	0.111	481	1.28	553	4.10	625	4.86	697	0.929	769	0.106	841	0.0149
410	0.120	482	1.29	554	4.14	626	4.81	698	0.900	770	0.103	842	0.0146
411	0.130	483	1.30	555	4.17	627	4.73	699	0.874	771	0.0997	843	0.0139
412	0.141	484	1.32	556	4.22	628	4.67	700	0.852	772	0.0961	844	0.0135
413	0.155	485	1.35	557	4.26	629	4.61	701	0.826	773	0.0931	845	0.0130
414	0.170	486	1.38	558	4.31	630	4.55	702	0.802	774	0.0904	846	0.0135
415	0.186	487	1.41	559	4.35	631	4.48	703	0.778	775	0.0880	847	0.0125
416	0.206	488	1.45	560	4.40	632	4.41	704	0.757	776	0.0857	848	0.0126
417	0.227	489	1.49	561	4.45	633	4.35	705	0.736	777	0.0831	849	0.0126
418	0.250	490	1.54	562	4.50	634	4.28	706	0.712	778	0.0811	850	0.0123
419	0.278	491	1.59	563	4.56	635	4.21	707	0.690	779	0.0774		
420	0.308	492	1.64	564	4.59	636	4.14	708	0.670	780	0.0759		
421	0.345	493	1.69	565	4.63	637	4.07	709	0.650	781	0.0739		



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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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Suite 211, 1195 Park Ave.
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Catalog Number
BLAZE™ 12v LED Tape Light DI-12V-BL33-80XX
Project Number
10460077
Test Number
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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

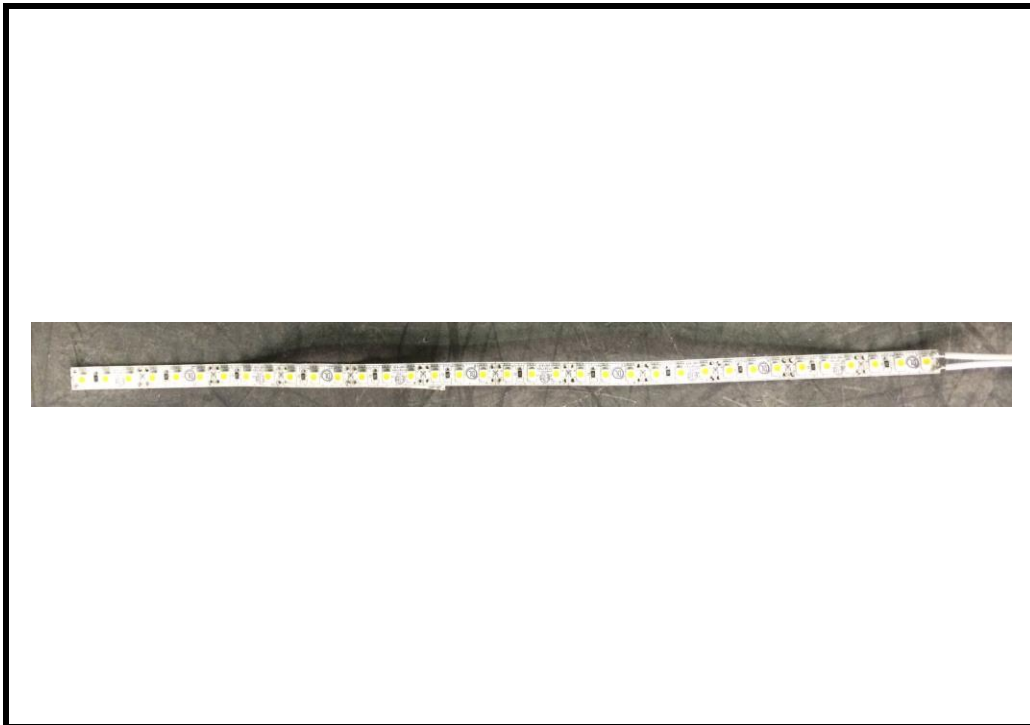
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Luminaire Description: LED strip
Catalog Number: BLAZE™ 12v LED Tape Light DI-12V-BL33-80XX
Lamp: 36 white LEDs
Mounting: Surface
Ballast/Driver: One Meanwell LPV-60-12

Luminaire

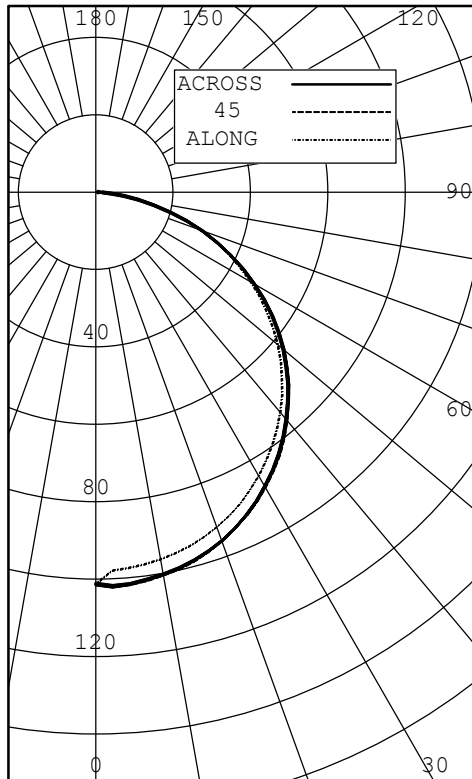


Test Conditions

Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.08245 A
Power:	4.265 W
Power Factor:	0.431
Frequency:	60 Hz
Current THD:	182 %



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	101	101	101	101	101	
5	98	101	102	102	102	10
10	96	100	101	100	100	
15	95	98	99	99	98	28
20	92	95	96	96	96	
25	89	92	92	92	92	42
30	84	88	88	88	88	
35	80	83	83	83	83	51
40	74	77	77	77	77	
45	68	71	71	70	70	54
50	61	64	64	63	63	
55	54	56	56	56	56	49
60	46	48	47	47	47	
65	38	39	39	39	39	38
70	29	30	30	30	29	
75	20	20	20	20	20	21
80	11	12	12	12	11	
85	4	5	4	4	4	5
90	0	1	1	1	1	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	80	26.59
0-40	131	43.76
0-60	234	78.34
0-90	299	100.00
40-90	168	56.24
60-90	65	21.66
90-180	0	0.00
0-180	299	100.00

EFFICACY (LUMENS PER WATT): 69.6

*** 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	33148	34521	34375
55	32428	33546	33546
65	30726	31652	31498
75	26417	27048	26651
85	16796	17236	16861

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	101	101	101	101	101	101	
2.5	98	101	102	102	102	101	
5.0	98	101	102	102	102	101	10
7.5	97	101	101	101	101	101	
10.0	96	100	101	100	100	100	
12.5	96	99	100	100	100	99	
15.0	95	98	99	99	98	98	28
17.5	93	97	97	97	97	97	
20.0	92	95	96	96	96	95	
22.5	90	94	94	94	94	94	
25.0	89	92	92	92	92	92	42
27.5	87	90	90	90	90	90	
30.0	84	88	88	88	88	87	
32.5	82	85	86	85	85	85	
35.0	80	83	83	83	83	82	51
37.5	77	80	80	80	80	79	
40.0	74	77	77	77	77	76	
42.5	71	74	74	74	74	73	
45.0	68	71	71	70	70	70	54
47.5	65	67	67	67	67	67	
50.0	61	64	64	63	63	63	
52.5	58	60	60	60	60	59	
55.0	54	56	56	56	56	55	49
57.5	50	52	52	52	52	51	
60.0	46	48	47	47	47	47	
62.5	42	43	43	43	43	43	
65.0	38	39	39	39	39	39	38
67.5	33	34	34	34	34	34	
70.0	29	30	30	30	29	29	
72.5	24	25	25	25	25	25	
75.0	20	20	20	20	20	20	21
77.5	15	16	16	16	15	16	
80.0	11	12	12	12	11	12	
82.5	7	8	8	8	7	8	
85.0	4	5	4	4	4	4	5
87.5	2	2	2	2	2	2	
90.0	0	1	1	1	1	1	



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	.950	.880	.82	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	0.920	.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	.43	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	0.650	.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	.390	.33	0.610	.470	.390	.33	0.590	.460	.390	.33	0.450	.380	.33	0.440	.370	.32	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	.300	.26	0.370	.300	.25	0.360	.300	.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	6.35	5.11
6.00	2.82	7.67
8.00	1.59	10.2
10.0	1.02	12.8
12.0	0.706	15.3
14.0	0.519	17.9
16.0	0.397	20.4

Cone of Light Plot

