

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P28175

Luminaire Tested: **G12-HE-BLK-LD4-30W-40-CL-UNV-ED1C-CSTG/BLK**

Test Date: 08/19/16



Test Information

Test Method: LM-79-08
Report Number: P28175
Test Lab: INNOVATION CENTER-P2
Test Date: 08/19/16
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: G12-HE-BLK-LD4-30W-40-CL-UNV-ED1C-CSTG/BLK
Description: G12 SHALLOW CAST EYELID LENS
Light Source: (112) NICHIA 4000K LEDS
NF2L757DRT
Ballast/Driver: (1) OSRAM ELECTRONIC DRIVER (700mA)
OT40W

Summary

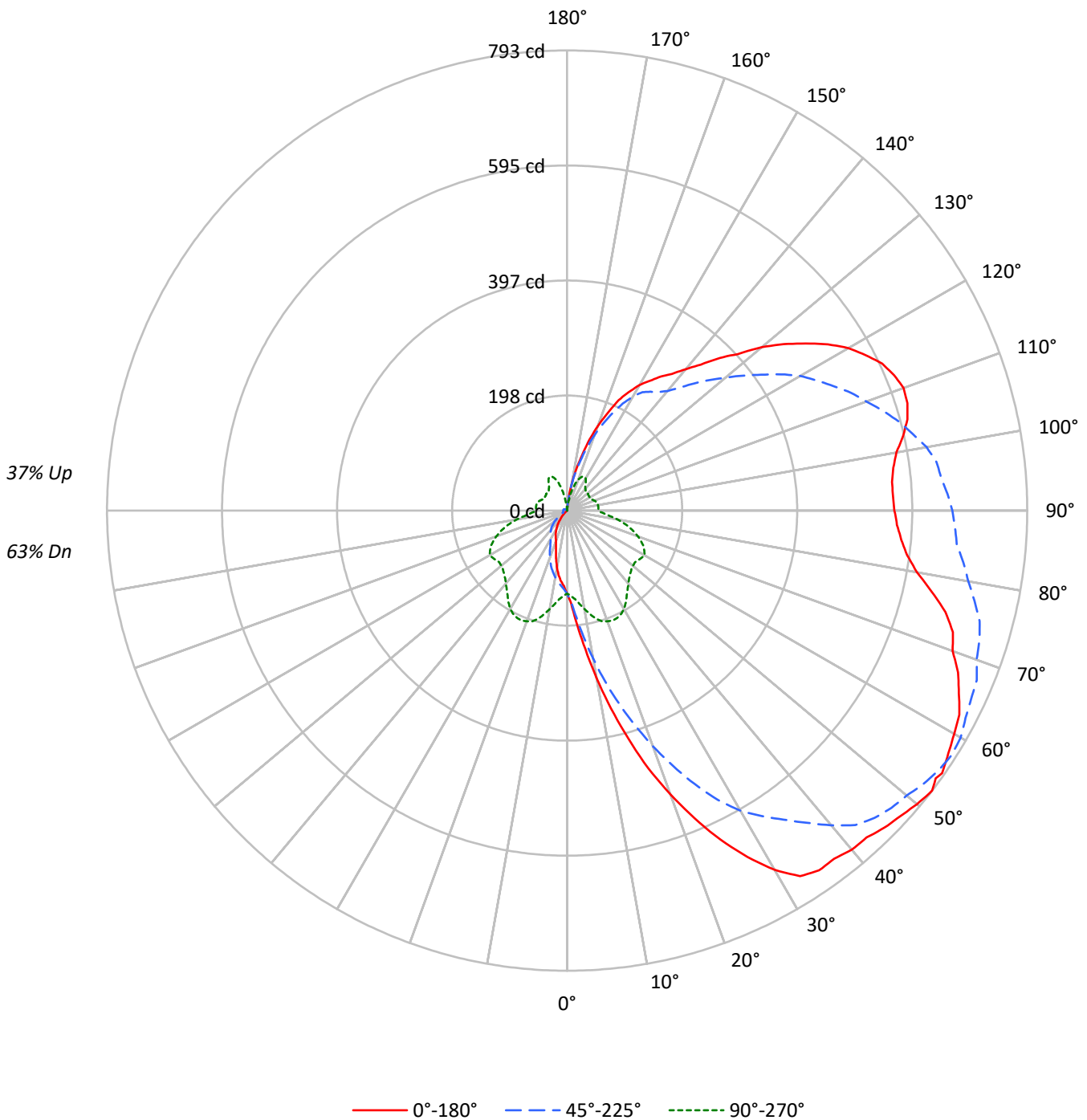
Lumens per Lamp: N/A
Luminaire Lumens: 3122.5 lumens
Efficiency: N/A
Efficacy: 96.1 lumens/watt
Spacing Criteria (0/90/45): 2.91 / 1.71 / 2.81
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 0.83' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 32.5
Input Voltage (V): 120.0
Input Current (A_{in}): 0.272
Voltage Rise (V): NR
Power Factor: 0.9991
Total Harmonic Distortion (THDi): 7.48%
Frequency (hertz): 60
Stabilization Time: 0.5 HR
Operation Time: 24 HR
Ambient Temperature (°C): 25.6
Test Distance: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68	63				
1	96	89	83	78	89	83	78	73	72	68	64	61	58	55	52	50	47	42				
2	85	75	66	59	79	70	62	56	60	54	49	51	46	42	43	39	36	31				
3	76	64	55	47	70	60	51	44	51	44	39	43	38	33	36	32	28	24				
4	69	56	46	38	64	52	43	36	44	37	31	38	32	27	31	27	23	19				
5	63	49	39	32	58	45	36	30	39	32	26	33	27	22	27	23	19	16				
6	57	43	34	27	53	40	32	25	35	27	22	29	23	19	24	20	16	13				
7	53	39	29	23	49	36	28	22	31	24	19	26	21	16	22	17	14	11				
8	49	35	26	20	45	32	24	19	28	21	16	24	18	14	20	15	12	9				
9	45	32	23	17	42	29	22	16	26	19	14	22	16	12	18	14	10	8				
10	42	29	21	15	39	27	19	14	23	17	13	20	15	11	17	12	9	7				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	2217	2217	2217
5°	2937	2281	1819
10°	4238	2488	1446
15°	5745	2731	1061
20°	7257	2833	781
25°	8682	2829	652
30°	9930	2722	514
35°	10610	2509	378
40°	10876	2338	228
45°	11296	2250	102
50°	11892	2236	15
55°	12439	2349	0
60°	12792	2558	0
65°	13186	2566	0
70°	13498	2482	0
75°	14105	2319	0
80°	14242	2048	0
85°	15308	1721	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.9	0.5
10°-20°	63.6	2.0
20°-30°	132.2	4.2
30°-40°	202.9	6.5
40°-50°	261.7	8.4
50°-60°	311.0	10.0
60°-70°	335.1	10.7
70°-80°	328.9	10.5
80°-90°	304.4	9.7
90°-100°	285.2	9.1
100°-110°	260.6	8.3
110°-120°	217.9	7.0
120°-130°	164.5	5.3
130°-140°	110.3	3.5
140°-150°	72.2	2.3
150°-160°	41.6	1.3
160°-170°	13.6	0.4
170°-180°	1.0	0.0
0°-30°	211.7	6.8
0°-40°	414.5	13.3
0°-60°	987.2	31.6
0°-90°	1955.6	62.6
90°-120°	763.7	24.5
90°-150°	1110.7	35.6
90°-180°	1167.0	37.4
0°-180°	3122.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	143	143	143	143	143	
5°	197	185	153	129	122	22
15°	406	344	193	103	75	119
25°	626	520	204	69	47	291
35°	757	650	179	51	27	471
45°	773	749	154	35	7	599
55°	789	781	149	18	0	703
65°	745	768	145	7	0	738
75°	675	736	111	7	0	707
85°	578	674	65	7	0	479
90°	564	664	55	7	0	310
95°	562	647	54	7	0	462
105°	607	592	53	6	0	638
115°	599	507	46	5	0	590
125°	502	408	45	3	0	451
135°	372	310	46	2	0	290
145°	282	250	55	0	0	178
155°	210	185	65	0	0	97
165°	98	90	42	0	0	30
175°	9	9	3	0	0	2
180°	0	0	0	0	0	



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CATALOG NUMBER: G12-HE-BLK-LD4-30W-40-CL-UNV-ED1C-CSTG/BLK

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	29°	35°	45°	55°	65°	75°	85°
0°	143	143	143	143	143	143	143	143	143	143	143
2.5°	160	161	160	160	160	159	157	156	154	151	148
5°	197	198	196	194	194	190	185	179	172	163	156
7.5°	241	240	238	234	232	228	220	210	196	181	167
10°	293	292	287	279	277	272	259	244	223	201	180
12.5°	349	347	341	331	327	318	301	281	254	222	195
15°	406	404	395	385	380	367	344	318	284	247	209
17.5°	466	461	450	436	431	414	387	356	316	270	220
20°	520	512	506	489	483	464	432	396	345	289	228
22.5°	574	563	554	541	530	513	476	435	373	307	234
25°	626	614	604	589	579	561	520	466	403	322	237
27.5°	673	660	653	636	626	604	562	497	428	330	238
30°	715	699	697	678	671	648	597	525	448	338	235
32.5°	747	732	730	712	708	685	624	550	462	343	230
35°	757	741	750	744	741	721	650	571	473	342	222
37.5°	756	746	755	759	761	752	678	590	482	340	214
40°	763	750	763	766	773	769	708	612	495	341	209
42.5°	764	756	768	774	784	776	735	641	511	347	206
45°	773	764	774	786	794	788	749	675	531	355	204
47.5°	779	769	783	796	809	795	758	703	552	364	204
50°	787	774	784	805	819	801	764	715	573	375	205
52.5°	793	778	784	814	828	806	774	725	592	391	209
54°	785	771	783	813	828	808	778	728	600	401	212
55°	789	773	779	815	828	811	781	731	607	410	216
57.5°	779	763	773	805	823	806	785	736	617	433	224
60°	770	754	761	796	812	801	783	735	628	451	230
62.5°	762	748	744	787	803	795	774	735	633	459	228
65°	745	732	727	779	793	784	768	733	636	449	224
67.5°	729	720	711	767	779	777	764	728	633	437	217
70°	707	698	688	762	769	774	751	721	626	420	207
72.5°	697	688	685	745	759	757	745	712	613	400	196
75°	675	669	682	741	746	754	736	697	593	377	181
77.5°	643	645	673	732	738	734	719	681	570	357	164
80°	612	621	665	726	731	725	702	662	548	336	147
82.5°	591	599	653	721	726	720	689	644	522	314	131
85°	578	583	641	713	720	717	674	627	501	293	116
87.5°	569	573	627	702	712	713	669	609	476	275	105
90°	564	568	620	694	708	711	664	597	461	260	97
92.5°	562	566	620	691	703	701	656	583	441	247	92
95°	562	569	625	692	700	696	647	573	432	238	91
97.5°	567	576	630	690	697	690	642	564	419	231	91
100°	576	588	629	684	690	679	629	553	408	224	90
102.5°	593	596	621	669	674	660	610	537	397	221	90
105°	607	602	608	652	655	642	592	521	388	216	89
107.5°	615	605	592	631	633	617	571	504	378	212	87



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CATALOG NUMBER: G12-HE-BLK-LD4-30W-40-CL-UNV-ED1C-CSTG/BLK

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	29°	35°	45°	55°	65°	75°	85°
110°	617	605	579	614	615	596	549	489	369	207	85
112.5°	610	596	562	591	592	572	530	472	355	202	82
115°	599	583	552	569	570	546	507	452	342	197	80
117.5°	580	564	541	547	549	526	485	435	329	192	79
120°	560	543	525	523	524	501	464	414	316	185	78
122.5°	533	518	505	501	499	474	437	391	299	178	77
125°	502	490	478	475	470	447	408	367	283	171	76
127.5°	471	457	451	450	445	421	382	345	268	164	75
130°	438	425	423	420	416	395	356	323	255	155	74
132.5°	399	393	396	394	389	372	333	302	238	147	72
135°	372	366	366	365	358	349	310	280	221	142	71
137.5°	341	337	339	338	333	326	287	258	209	137	71
140°	318	311	312	312	311	305	269	242	202	133	72
142.5°	297	290	291	290	295	289	257	233	200	134	74
145°	282	272	275	276	280	275	250	231	199	138	79
147.5°	265	260	261	264	264	262	242	224	196	139	83
150°	250	243	241	246	243	244	227	212	188	137	86
152.5°	230	225	222	223	220	221	208	196	172	131	85
155°	210	202	201	198	198	195	185	176	155	122	82
157.5°	181	179	179	174	174	168	162	155	138	111	77
160°	155	152	153	149	150	141	139	132	118	98	69
162.5°	128	127	124	123	122	114	114	106	96	81	60
165°	98	98	99	96	94	90	90	85	75	63	50
167.5°	73	72	74	69	69	68	68	62	57	48	37
170°	48	49	49	47	47	47	47	43	40	33	25
172.5°	27	27	28	28	29	28	27	24	22	18	13
175°	9	9	9	9	10	9	9	8	8	6	4
177.5°	0	0	0	0	0	0	0	0	0	1	1
180°	0	0	0	0	0	0	0	0	0	0	0



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CATALOG NUMBER: G12-HE-BLK-LD4-30W-40-CL-UNV-ED1C-CSTG/BLK

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	143	143	143	143	143	143	143	143	143	143	143
2.5°	147	145	142	140	137	135	133	131	130	130	130
5°	153	150	143	138	133	129	126	124	122	121	122
7.5°	162	157	147	138	130	124	119	116	113	112	112
10°	172	165	151	139	127	117	110	105	101	100	100
12.5°	183	174	156	139	124	110	100	94	90	88	87
15°	193	180	159	139	120	103	90	83	77	76	75
17.5°	200	185	160	137	114	95	81	72	66	64	64
20°	203	185	158	132	108	86	71	62	57	56	56
22.5°	205	184	154	126	100	78	61	55	53	52	51
25°	204	181	148	119	92	69	55	52	49	48	47
27.5°	201	176	142	112	84	62	52	48	45	43	42
30°	196	168	134	105	78	57	49	43	40	38	37
32.5°	188	160	127	99	73	54	45	38	35	33	32
35°	179	150	121	96	69	51	40	33	29	27	27
37.5°	171	142	117	93	65	47	34	28	24	22	21
40°	164	136	113	91	62	43	30	23	19	17	16
42.5°	158	130	110	88	59	40	25	18	14	12	12
45°	154	124	107	85	56	35	20	13	9	8	7
47.5°	150	119	104	81	52	31	15	10	6	4	4
50°	148	115	100	77	48	26	11	6	2	1	1
52.5°	147	113	96	73	43	22	8	3	0	0	0
54°	148	112	93	70	40	19	5	1	0	0	0
55°	149	112	91	69	38	18	4	1	0	0	0
57.5°	152	113	87	63	34	14	1	0	0	0	0
60°	154	114	83	57	30	11	0	0	0	0	0
62.5°	150	111	79	51	27	9	0	0	0	0	0
65°	145	108	76	45	24	7	0	0	0	0	0
67.5°	138	102	71	41	21	7	0	0	0	0	0
70°	130	95	66	37	20	7	0	0	0	0	0
72.5°	121	88	61	34	20	7	0	0	0	0	0
75°	111	79	57	32	20	7	0	0	0	0	0
77.5°	100	70	52	32	19	7	0	0	0	0	0
80°	88	62	49	31	19	7	0	0	0	0	0
82.5°	75	54	47	31	19	7	0	0	0	0	0
85°	65	48	45	31	19	7	0	0	0	0	0
87.5°	58	47	44	31	19	7	0	0	0	0	0
90°	55	46	43	30	19	7	0	0	0	0	0
92.5°	54	45	42	30	19	7	0	0	0	0	0
95°	54	46	41	30	18	7	0	0	0	0	0
97.5°	54	46	41	29	18	7	0	0	0	0	0
100°	54	46	41	29	18	6	0	0	0	0	0
102.5°	54	46	41	29	18	6	0	0	0	0	0
105°	53	44	40	28	18	6	0	0	0	0	0
107.5°	52	43	39	28	17	6	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	50	41	38	28	17	6	0	0	0	0	0
112.5°	48	39	37	27	17	5	0	0	0	0	0
115°	46	36	35	26	16	5	0	0	0	0	0
117.5°	45	34	33	26	15	5	0	0	0	0	0
120°	45	32	30	25	14	4	0	0	0	0	0
122.5°	45	31	28	24	14	4	0	0	0	0	0
125°	45	31	27	23	13	3	0	0	0	0	0
127.5°	46	30	25	22	13	3	0	0	0	0	0
130°	46	30	23	20	12	2	0	0	0	0	0
132.5°	46	30	21	18	11	2	0	0	0	0	0
135°	46	30	19	15	10	2	0	0	0	0	0
137.5°	47	31	17	13	8	1	0	0	0	0	0
140°	49	32	16	11	6	1	0	0	0	0	0
142.5°	51	34	15	9	5	0	0	0	0	0	0
145°	55	37	16	7	3	0	0	0	0	0	0
147.5°	60	42	18	6	2	0	0	0	0	0	0
150°	64	46	21	7	1	0	0	0	0	0	0
152.5°	65	49	25	10	1	0	0	0	0	0	0
155°	65	50	27	12	3	0	0	0	0	0	0
157.5°	62	49	29	14	4	0	0	0	0	0	0
160°	57	46	28	15	5	0	0	0	0	0	0
162.5°	50	41	26	14	5	0	0	0	0	0	0
165°	42	34	22	12	4	0	0	0	0	0	0
167.5°	32	27	17	9	2	0	0	0	0	0	0
170°	21	18	11	5	1	0	0	0	0	0	0
172.5°	11	9	5	1	0	0	0	0	0	0	0
175°	3	2	1	0	0	0	0	0	0	0	0
177.5°	1	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)