

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: ITL49089

Luminaire Tested: **EFS-12100MHDTBK**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: ITL49089
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: EFS-12100MHDTBK
Description: CAST METAL HOUSING WITH BLACK PAINTED GENERAL INTERIOR FINISH, FABRICATED WHITE PAINTED METAL REFLECTOR/BALLAST COVER, PROTOTYPE FABRICATED MULTI-FACETED SPECULAR METAL REFLECTOR OVER UPPER PORTION OF LAMP, CLEAR LINEAR PRISMATIC LENS IN CAST BLACK PAINTED METAL FRAME/FIXTURE COVER.
Light Source: ONE 100-WATT CLEAR ED-17 METAL HALIDE, TILTED 11-DEGREES ABOVE HORIZONTAL POSITION.
Ballast/Driver: -

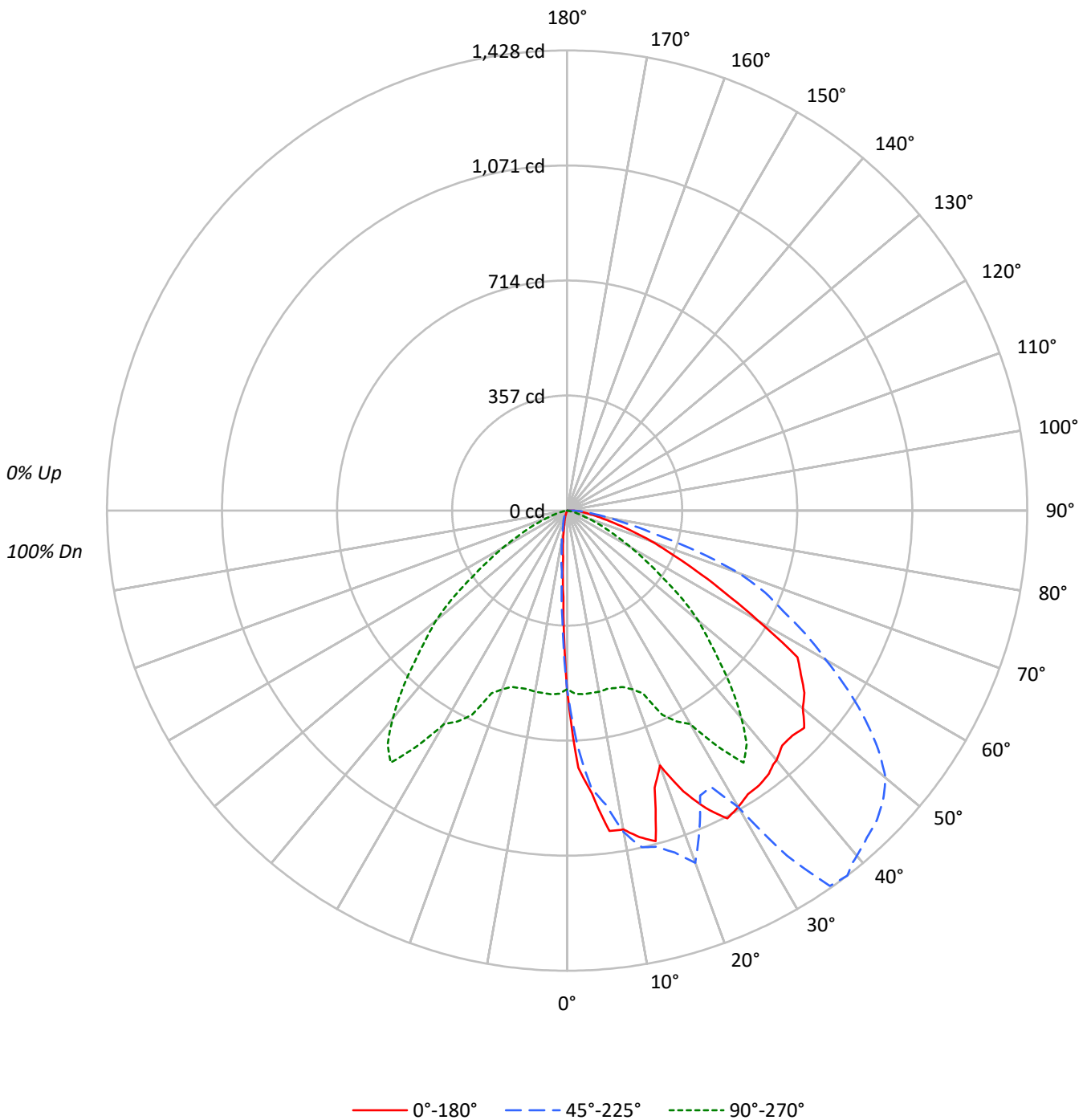
Summary

Lumens per Lamp: 8500 (1 lamp)
Luminaire Lumens: 2554.4 lumens
Efficiency: 30.1%
Efficacy: 25.5 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.9 / 1.84
Luminous Opening: Rectangular (W 0.9' x L: 0.27' x H: 0')
CIE Type: Direct

Input Watts (W): 100
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
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	36	36	36	36	35	35	35	35	33	33	33	32	32	32	31	31	31	30				30
1	33	31	30	29	32	31	30	29	29	28	28	28	27	27	27	27	27	26				25
2	30	27	25	23	29	27	25	23	26	24	23	25	23	22	24	23	22	21				21
3	27	24	21	19	26	23	21	19	22	20	19	21	20	18	21	19	18	17				17
4	24	21	18	16	24	20	18	16	20	17	16	19	17	15	18	17	15	14				14
5	22	18	15	13	22	18	15	13	17	15	13	17	15	13	16	14	13	12				12
6	20	16	13	11	20	16	13	11	15	13	11	15	13	11	14	13	11	10				10
7	19	15	12	10	18	14	12	10	14	11	10	13	11	10	13	11	10	9				9
8	17	13	10	9	17	13	10	9	13	10	9	12	10	8	12	10	8	8				8
9	16	12	9	8	16	12	9	8	11	9	8	11	9	7	11	9	7	7				7
10	15	11	8	7	15	11	8	7	10	8	7	10	8	7	10	8	7	6				6

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	24440	24440	24440
5°	39015	25331	6377
10°	45021	25579	2688
15°	48504	26033	1324
20°	39530	27699	469
25°	49602	34025	0
30°	54099	38970	0
35°	56010	51432	0
40°	58223	48490	0
45°	61641	42113	0
50°	65544	36444	0
55°	68069	27766	0
60°	60439	20293	0
65°	46035	13675	0
70°	35858	8126	0
75°	25909	4943	0
80°	21341	1524	0
85°	22778	1012	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	51.5	2.0	0.6	0°	554	554	554	554	554	
10°-20°	155.8	6.1	1.8	5°	881	865	572	190	144	89
20°-30°	275.3	10.8	3.2	15°	1062	1080	570	49	29	275
30°-40°	486.9	19.1	5.7	25°	1019	976	699	20	0	465
40°-50°	603.5	23.6	7.1	35°	1040	1422	955	2	0	651
50°-60°	512.7	20.1	6.0	45°	988	1359	675	0	0	766
60°-70°	330.7	12.9	3.9	55°	885	1129	361	0	0	779
70°-80°	115.9	4.5	1.4	65°	441	740	131	0	0	449
80°-90°	20.8	0.8	0.2	75°	152	284	29	0	0	172
90°-100°	1.2	0.0	0.0	85°	45	57	2	0	0	45
100°-110°	0.0	0.0	0.0	90°	16	14	0	0	0	10
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	3
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	482.6	18.9	5.7	165°	0	0	0	0	0	0
0°-40°	969.5	38.0	11.4	175°	0	0	0	0	0	0
0°-60°	2085.8	81.7	24.5	180°	0	0	0	0	0	0
0°-90°	2553.2	100.0	30.0							
90°-120°	1.2	0.0	0.0							
90°-150°	1.2	0.0	0.0							
90°-180°	1.0	0.0	0.0							
0°-180°	2554.4	100.0	30.1							



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	72.5°	75°	85°
0°	554	554	554	554	554	554	554	554	554	554	554
2.5°	799	779	793	780	762	728	704	670	618	651	605
5°	881	874	879	870	873	865	833	794	684	702	640
7.5°	1003	986	994	985	949	920	888	862	772	780	654
10°	1005	1000	1022	1050	1058	1014	945	896	823	825	671
12.5°	1038	1033	1054	1064	1060	1070	1023	938	875	874	688
15°	1062	1051	1084	1117	1100	1080	1076	1003	924	928	717
17.5°	902	916	958	1059	1129	1113	1097	1059	971	973	751
20°	842	838	872	927	1024	1163	1147	1123	1051	1045	797
22.5°	943	927	908	876	930	1073	1207	1239	1154	1150	866
25°	1019	1009	1016	990	894	976	1291	1397	1303	1294	1017
27.5°	1077	1070	1098	1056	1003	966	1328	1553	1520	1471	1168
30°	1062	1065	1105	1111	1065	1062	1322	1677	1638	1621	1330
32.5°	1044	1046	1080	1111	1133	1270	1307	1798	1959	1915	1618
35°	1040	1042	1068	1080	1160	1422	1356	2030	2512	2486	1891
37.5°	1029	1030	1048	1059	1172	1428	1490	2346	2985	2864	1852
39°	1015	1017	1042	1044	1194	1407	1620	2477	3090	2923	1739
40°	1011	1010	1024	1036	1204	1399	1725	2507	3089	2933	1660
42.5°	988	988	1005	1018	1197	1377	1937	2417	2908	2851	1482
45°	988	989	993	994	1163	1359	1968	2322	2755	2663	1305
47.5°	998	999	988	987	1083	1330	1857	2099	2438	2385	1166
50°	955	954	946	964	1028	1290	1707	1896	2122	1990	998
52.5°	928	930	918	915	960	1217	1536	1800	1712	1588	878
55°	885	882	865	878	904	1129	1404	1781	1442	1320	733
57.5°	848	848	852	817	853	1031	1274	1834	1183	1081	604
60°	685	709	773	806	794	928	1165	1748	947	853	514
62.5°	550	573	610	734	746	838	1065	1443	737	709	422
65°	441	453	486	608	708	740	941	1045	641	601	338
67.5°	348	359	388	434	625	665	830	737	519	514	270
70°	278	278	289	280	448	567	695	516	421	405	174
72.5°	208	210	209	201	281	427	542	396	302	284	108
75°	152	153	155	147	182	284	373	284	195	174	59
77.5°	111	112	118	107	127	195	228	165	102	93	28
80°	84	85	87	79	95	134	134	83	44	42	10
82.5°	62	62	60	60	69	90	76	41	13	15	5
85°	45	47	45	41	49	57	37	16	3	6	2
87.5°	31	32	32	30	32	34	16	6	0	3	2
90°	16	17	16	13	14	14	4	1	0	0	0
95°	0	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	72.5°	75°	85°
165°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	554	554	554	554	554	554	554	554	554	554	554
2.5°	569	535	479	442	387	338	297	275	259	261	268
5°	572	502	418	290	240	190	179	163	153	150	144
7.5°	571	479	307	216	170	134	111	97	94	95	97
10°	571	459	253	175	122	93	72	61	57	58	60
12.5°	567	424	212	137	92	66	50	41	39	38	41
15°	570	392	184	112	70	49	40	35	31	29	29
17.5°	574	364	164	89	54	39	32	24	20	17	19
20°	590	357	159	75	43	32	23	16	11	9	10
22.5°	614	354	142	70	39	26	16	9	2	0	0
25°	699	386	145	65	37	20	10	1	0	0	0
27.5°	738	382	147	66	34	14	3	0	0	0	0
30°	765	375	135	66	30	9	0	0	0	0	0
32.5°	866	396	137	65	26	5	0	0	0	0	0
35°	955	413	145	69	23	2	0	0	0	0	0
37.5°	915	389	151	67	17	0	0	0	0	0	0
39°	872	368	148	67	16	0	0	0	0	0	0
40°	842	352	146	66	15	0	0	0	0	0	0
42.5°	761	326	141	66	11	0	0	0	0	0	0
45°	675	309	144	67	7	0	0	0	0	0	0
47.5°	597	302	153	62	5	0	0	0	0	0	0
50°	531	302	164	57	4	0	0	0	0	0	0
52.5°	451	273	176	51	3	0	0	0	0	0	0
55°	361	216	159	50	3	0	0	0	0	0	0
57.5°	287	155	120	47	2	0	0	0	0	0	0
60°	230	128	78	40	2	0	0	0	0	0	0
62.5°	172	100	57	33	2	0	0	0	0	0	0
65°	131	74	41	24	2	0	0	0	0	0	0
67.5°	94	52	31	17	2	0	0	0	0	0	0
70°	63	35	24	12	1	0	0	0	0	0	0
72.5°	43	22	16	8	1	0	0	0	0	0	0
75°	29	13	11	7	0	0	0	0	0	0	0
77.5°	15	8	7	4	0	0	0	0	0	0	0
80°	6	4	2	1	0	0	0	0	0	0	0
82.5°	3	2	1	0	0	0	0	0	0	0	0
85°	2	1	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
165°	0	0	0	0	0	0	0	0	0	0	0
175°	0	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)