

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: ITL50003

Luminaire Tested: **ENS-12-70MH-DT-BK**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: ITL50003
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ENS-12-70MH-DT-BK
Description: CAST METAL HOUSING, FABRICATED WHITE PAINTED METAL MOUNTING, PLATE, FABRICATED MULTI-FACETED METAL REFLECTOR ABOVE LAMP WITH PREMIUM SPECULAR FINISH, CLEAR FLAT GLASS LINEAR PRISMATIC LENS IN CAST BLACK PAINTED METAL HOUSING COVER.
Light Source: ONE 70-WATT CLEAR ED-17 METAL HALIDE, TILTED 10-DEGREES ABOVE HORIZONTAL POSITION.
Ballast/Driver: -

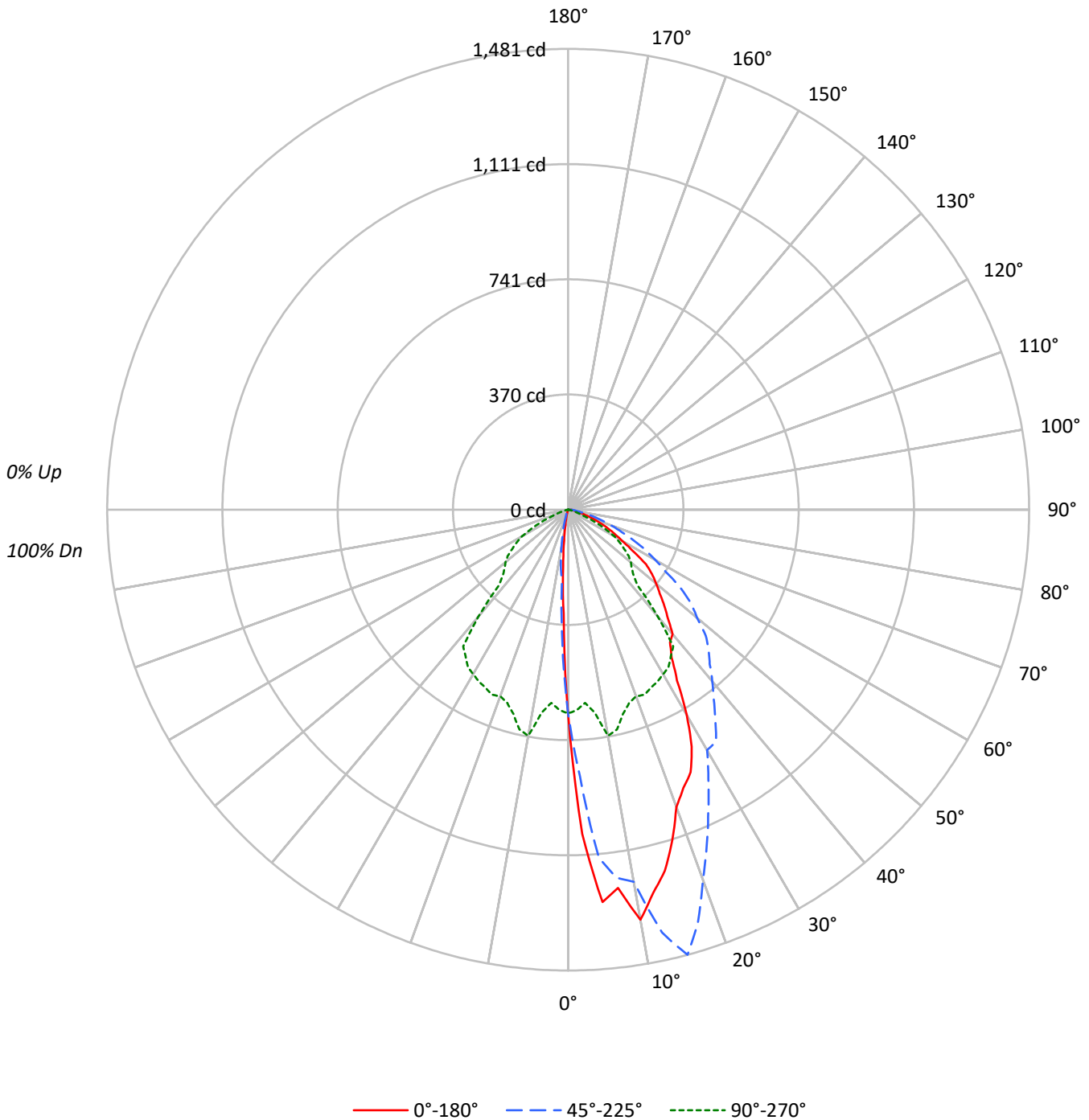
Summary

Lumens per Lamp: 5600 (1 lamp)
Luminaire Lumens: 1374.3 lumens
Efficiency: 24.5%
Efficacy: 19.6 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 1.37 / 1.18
Luminous Opening: Rectangular w/ Sides (W: 0.92' x L: 0.23' x H: 0.03')
CIE Type: Direct

Input Watts (W): 70
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	0
RCR																		
0	29	29	29	29	29	29	29	29	27	27	27	26	26	26	25	25	25	25
1	27	26	25	24	26	26	25	24	25	24	23	24	23	23	23	22	22	21
2	25	23	22	21	24	23	22	20	22	21	20	21	20	19	20	20	19	19
3	23	21	19	18	23	20	19	17	20	18	17	19	18	17	18	17	17	16
4	21	19	17	15	21	18	17	15	18	16	15	17	16	15	17	16	15	14
5	20	17	15	13	19	17	15	13	16	15	13	16	14	13	15	14	13	13
6	18	15	13	12	18	15	13	12	15	13	12	14	13	12	14	13	12	11
7	17	14	12	11	17	14	12	11	14	12	11	13	12	11	13	12	10	10
8	16	13	11	10	16	13	11	10	12	11	10	12	11	10	12	11	10	9
9	15	12	10	9	15	12	10	9	12	10	9	11	10	9	11	10	9	8
10	14	11	9	8	14	11	9	8	11	9	8	11	9	8	10	9	8	8

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	33556	33556	33556
5°	64337	31943	9249
10°	67967	38162	2641
15°	61450	35739	767
20°	52768	34356	104
25°	49476	35054	0
30°	41728	35387	0
35°	33051	35121	0
40°	31321	29191	0
45°	27857	20737	0
50°	25293	20142	0
55°	22796	18736	0
60°	16572	16543	0
65°	13127	11182	0
70°	9476	5478	0
75°	5507	2634	0
80°	3658	1236	0
85°	3443	846	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp	0°	45°	90°	135°	180°	Flux
0°-10°	64.0	4.7	1.1	0°	655	655	655	655	
10°-20°	191.4	13.9	3.4	5°	1266	1121	623	232	116
20°-30°	261.0	19.0	4.7	15°	1201	1481	680	51	332
30°-40°	274.5	20.0	4.9	25°	931	1065	630	10	419
40°-50°	226.9	16.5	4.1	35°	579	824	575	1	375
50°-60°	187.3	13.6	3.3	45°	437	637	296	0	338
60°-70°	117.5	8.5	2.1	55°	305	444	220	0	262
70°-80°	42.4	3.1	0.8	65°	140	230	99	0	138
80°-90°	7.7	0.6	0.1	75°	42	81	15	0	50
90°-100°	1.4	0.1	0.0	85°	15	19	2	0	13
100°-110°	0.2	0.0	0.0	90°	10	7	1	0	5
110°-120°	0.0	0.0	0.0	95°	2	2	0	0	3
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	1
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0
0°-30°	516.4	37.6	9.2	165°	0	0	0	0	0
0°-40°	790.9	57.5	14.1	175°	0	0	0	0	0
0°-60°	1205.1	87.7	21.5	180°	0	0	0	0	0
0°-90°	1372.7	99.9	24.5						
90°-120°	1.7	0.1	0.0						
90°-150°	1.7	0.1	0.0						
90°-180°	2.0	0.1	0.0						
0°-180°	1374.3	100.0	24.5						



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	655	655	655	655	655	655	655	655	655	655	655
2.5°	1043	959	966	914	907	857	809	763	719	669	644
5°	1266	1266	1251	1244	1198	1121	1022	887	778	679	623
7.5°	1226	1212	1201	1206	1203	1193	1136	1045	860	730	658
10°	1338	1295	1257	1204	1167	1214	1312	1397	1118	841	738
12.5°	1261	1263	1238	1194	1212	1392	1506	1486	1231	836	723
15°	1201	1201	1176	1138	1279	1481	1494	1432	1164	788	680
17.5°	1113	1138	1136	1148	1373	1388	1443	1328	1147	769	651
20°	1016	1023	1012	1171	1325	1266	1305	1290	1179	771	638
22.5°	968	968	945	1110	1178	1164	1178	1299	1198	802	643
25°	931	936	917	1087	1023	1065	1110	1267	1234	846	630
27.5°	859	865	851	993	971	975	1105	1238	1303	872	622
30°	761	773	804	911	882	892	1033	1169	1318	871	610
32.5°	651	674	748	820	799	885	909	1042	1329	866	600
35°	579	593	658	725	755	824	845	925	1158	871	575
37.5°	537	545	602	633	709	768	824	907	1008	804	554
40°	522	523	572	578	661	720	771	812	954	585	449
42.5°	474	482	537	548	614	673	696	678	733	498	329
45°	437	444	490	502	570	637	644	599	623	471	296
47.5°	399	411	449	471	527	600	599	557	590	456	276
50°	369	374	406	439	495	540	555	540	570	438	263
52.5°	339	343	374	393	464	499	497	514	554	407	245
55°	305	315	339	357	396	444	447	487	545	372	220
57.5°	245	261	295	316	348	372	399	457	512	328	197
60°	200	208	240	282	300	323	351	407	462	315	171
62.5°	167	172	193	233	256	278	310	353	407	286	135
65°	140	144	159	185	217	230	267	300	358	240	99
67.5°	110	119	131	144	173	185	220	245	293	192	62
70°	87	91	101	109	134	144	176	193	243	136	40
72.5°	60	65	74	80	95	111	136	146	192	74	25
75°	42	45	51	55	64	81	99	105	126	37	15
77.5°	32	34	37	39	41	52	64	69	69	17	9
80°	22	24	27	27	29	35	39	40	32	9	5
82.5°	17	20	21	20	20	25	21	17	11	5	2
85°	15	15	15	15	15	19	12	9	5	2	2
87.5°	12	12	11	11	12	14	6	4	2	2	1
90°	10	11	9	7	9	7	4	2	2	1	1
95°	2	2	2	2	2	2	2	2	2	1	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
165°	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°	75°	85°	90°
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	655	655	655	655	655	655	655	655	655	655
2.5°	633	582	533	473	429	378	346	318	283	334
5°	582	478	344	271	232	210	187	176	170	182
7.5°	582	407	270	215	181	146	119	105	91	100
10°	622	373	232	176	124	89	66	56	50	52
12.5°	590	300	208	131	77	51	36	30	27	30
15°	529	258	167	86	51	31	22	19	15	15
17.5°	480	235	137	59	31	21	12	9	9	7
20°	452	210	106	42	21	11	7	2	2	2
22.5°	429	193	82	30	14	6	2	0	0	0
25°	414	181	66	22	10	2	0	0	0	0
27.5°	401	167	52	16	6	0	0	0	0	0
30°	376	154	44	12	4	0	0	0	0	0
32.5°	358	150	34	10	2	0	0	0	0	0
35°	320	160	31	7	1	0	0	0	0	0
37.5°	292	168	30	6	0	0	0	0	0	0
40°	215	121	30	5	0	0	0	0	0	0
42.5°	146	70	17	4	0	0	0	0	0	0
45°	122	46	11	2	0	0	0	0	0	0
47.5°	111	37	7	1	0	0	0	0	0	0
50°	105	34	6	1	0	0	0	0	0	0
52.5°	95	29	6	0	0	0	0	0	0	0
55°	85	26	5	0	0	0	0	0	0	0
57.5°	75	21	4	0	0	0	0	0	0	0
60°	66	17	4	0	0	0	0	0	0	0
62.5°	55	16	4	0	0	0	0	0	0	0
65°	45	14	5	0	0	0	0	0	0	0
67.5°	34	12	4	0	0	0	0	0	0	0
70°	25	11	4	0	0	0	0	0	0	0
72.5°	16	9	2	0	0	0	0	0	0	0
75°	10	6	2	0	0	0	0	0	0	0
77.5°	5	5	2	0	0	0	0	0	0	0
80°	4	2	1	0	0	0	0	0	0	0
82.5°	2	2	1	0	0	0	0	0	0	0
85°	1	1	0	0	0	0	0	0	0	0
87.5°	1	0	0	0	0	0	0	0	0	0
90°	1	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

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

(END OF REPORT)