

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: 5159

Luminaire Tested: **HDR-70S-26**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 5159  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HDR-70S-26  
Description: FAIL-SAFE SQUARE FIXTURE WITH DROPPED LENS  
Light Source: S62MS-70 6300 LUMENS  
Ballast/Driver: -

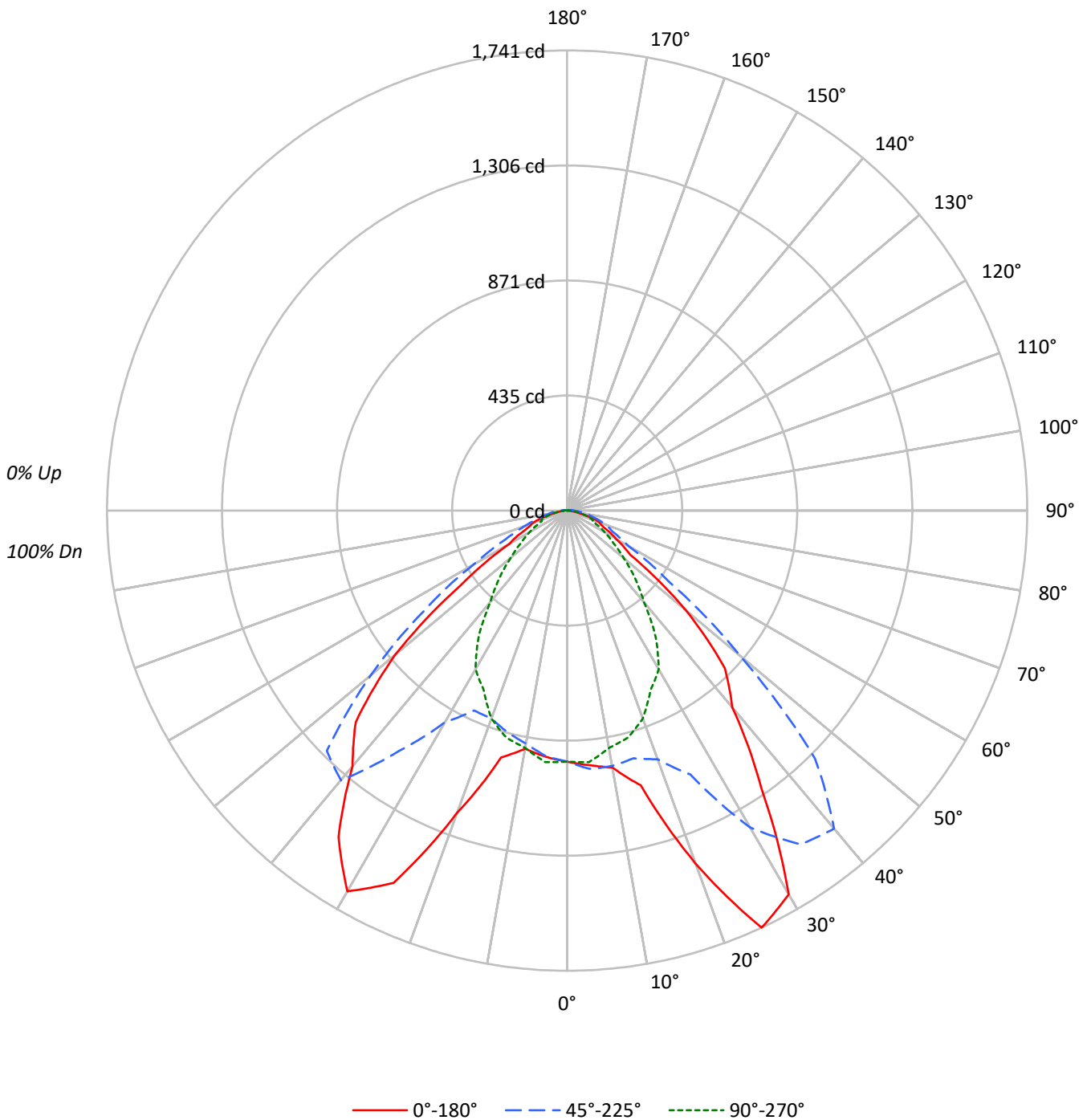
**Summary**

Lumens per Lamp: 6300 (1 lamp)  
Luminaire Lumens: 3073.1 lumens  
Efficiency: 48.8%  
Efficacy: 43.9 lumens/watt  
Spacing Criteria (0/90/45): 1.73 / 1.1 / 1.67  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct

Input Watts (W): 70  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	58	58	58	58	57	57	57	57	54	54	54	52	52	52	50	50	50	49
1	54	52	50	48	52	50	49	47	48	47	46	46	45	44	45	44	43	42
2	49	46	43	40	48	45	42	40	43	41	39	41	39	38	40	38	37	36
3	45	40	37	34	44	40	36	34	38	35	33	37	34	32	36	34	32	31
4	42	36	32	29	40	35	32	29	34	31	28	33	30	28	32	30	28	27
5	38	32	28	25	37	32	28	25	31	27	25	30	27	24	29	26	24	23
6	35	29	25	22	34	29	25	22	28	24	22	27	24	21	26	23	21	20
7	33	26	22	19	32	26	22	19	25	22	19	25	21	19	24	21	19	18
8	30	24	20	17	30	24	20	17	23	20	17	22	19	17	22	19	17	16
9	28	22	18	15	28	22	18	15	21	18	15	21	17	15	20	17	15	14
10	27	20	16	14	26	20	16	14	19	16	14	19	16	14	19	16	14	13

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	10226	10226	10226
5°	10448	10319	10103
10°	10788	9968	10001
15°	11991	9907	10776
20°	16277	9588	13940
25°	20677	8884	18456
30°	20844	8613	20670
35°	16820	7674	19816
40°	13658	6351	17747
45°	12833	5526	17217
50°	9779	4672	14217
55°	5461	3997	9177
60°	4585	3531	5447
65°	3948	3082	4534
70°	4060	3273	4437
75°	3119	3119	3410
80°	2170	2665	2479
85°	1112	2470	2470



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	90.5	2.9	1.4	0°	950	950	950	950	950	
10°-20°	271.7	8.8	4.3	5°	967	981	955	932	935	93
20°-30°	503.0	16.4	8.0	15°	1076	970	889	869	967	328
30°-40°	716.0	23.3	11.4	25°	1741	1102	748	834	1554	764
40°-50°	709.1	23.1	11.3	35°	1280	1542	584	1111	1508	811
50°-60°	399.1	13.0	6.3	45°	843	1326	363	1286	1131	624
60°-70°	207.1	6.7	3.3	55°	291	472	213	662	489	307
70°-80°	123.0	4.0	2.0	65°	155	190	121	256	178	161
80°-90°	38.8	1.3	0.6	75°	75	109	75	104	82	84
90°-100°	11.5	0.4	0.2	85°	9	46	20	49	20	13
100°-110°	3.7	0.1	0.1	90°	0	23	14	29	14	1
110°-120°	0.5	0.0	0.0	95°	0	20	6	14	9	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	3	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°	865.3	28.2	13.7	165°	0	0	0	0	0	0
0°-40°	1581.3	51.5	25.1	175°	0	0	0	0	0	0
0°-60°	2689.5	87.5	42.7	180°	0	0	0	0	0	0
0°-90°	3058.5	99.5	48.5							
90°-120°	15.7	0.5	0.2							
90°-150°	15.7	0.5	0.2							
90°-180°	16.0	0.5	0.3							
0°-180°	3073.1	100.0	48.8							



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	950	950	950	950	950	950	950	950	950	950	950
5°	967	970	981	981	981	981	972	967	961	952	955
10°	987	1001	1004	1001	993	981	967	944	935	918	912
15°	1076	1082	1082	1067	1010	970	961	941	889	898	889
20°	1421	1418	1358	1260	1111	1001	915	895	785	846	837
25°	1741	1720	1657	1545	1344	1102	895	795	667	760	748
30°	1677	1623	1700	1746	1674	1384	975	713	570	682	693
35°	1280	1260	1436	1617	1732	1542	1177	708	495	567	584
40°	972	978	1194	1401	1643	1571	1332	768	437	434	452
45°	843	866	990	1105	1315	1326	1231	785	380	348	363
50°	584	581	607	581	760	852	929	693	325	273	279
55°	291	305	380	331	363	472	596	547	265	213	213
60°	213	219	279	262	250	268	371	386	239	167	164
62.5°	187	184	247	242	227	227	296	319	204	150	144
65°	155	161	216	210	207	190	239	256	173	129	121
67.5°	138	144	193	187	181	173	193	207	152	121	104
70°	129	138	175	167	158	152	164	170	132	112	104
72.5°	112	115	144	141	135	132	138	132	101	104	89
75°	75	86	109	1106	106	109	106	104	81	86	75
77.5°	49	66	86	86	86	89	89	86	63	72	58
80°	35	43	60	63	69	72	69	69	49	55	43
82.5°	20	29	43	49	49	58	55	55	35	46	35
85°	9	20	26	35	37	46	43	43	26	35	20
87.5°	6	14	20	32	32	35	37	35	14	23	14
90°	0	12	6	20	23	23	12	26	6	14	14
95°	0	3	0	3	14	20	3	20	6	12	6
105°	0	0	0	0	0	0	0	6	0	6	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
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°	950	950	950	950	950	950	950	950	950	950
5°	947	944	935	935	932	932	935	944	944	935
10°	903	903	892	903	895	901	915	915	924	915
15°	883	880	872	866	869	883	918	947	967	967
20°	820	817	808	808	837	912	1024	1139	1228	1217
25°	728	725	699	737	834	1041	1260	1433	1536	1554
30°	670	647	619	722	924	1300	1620	1732	1686	1663
35°	567	526	538	731	1111	1602	1792	1766	1585	1508
40°	449	417	486	811	1332	1626	1755	1657	1387	1263
45°	363	337	437	866	1286	1473	1602	1358	1203	1131
50°	279	276	394	774	970	1033	998	892	898	849
55°	210	216	351	593	662	590	469	472	489	489
60°	161	170	282	420	409	319	282	331	293	253
62.5°	144	150	250	357	328	259	247	293	247	219
65°	127	132	210	276	256	210	216	250	213	178
67.5°	115	118	178	224	210	181	190	216	184	152
70°	106	109	147	178	170	155	170	178	164	141
72.5°	101	101	124	138	138	135	138	147	132	115
75°	83	81	101	98	104	106	112	109	106	82
77.5°	72	66	81	78	89	86	89	82	78	61
80°	49	49	63	58	69	66	69	58	58	40
82.5°	40	37	46	40	60	49	52	40	40	29
85°	26	26	35	35	49	37	40	29	26	20
87.5°	17	20	23	26	35	26	35	20	20	17
90°	14	14	17	12	29	17	29	14	14	14
95°	9	6	6	9	14	17	17	14	6	9
105°	6	0	0	0	3	6	6	6	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
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)