

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: 766670

Luminaire Tested: **HPEC-100xxxx**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: 766670  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: HPEC-100xxxx  
Description: FAIL-SAFE CLEAR 9 x 9  
Light Source: #023 - 100W HPS CL HOR MED 9500 LUMENS  
Ballast/Driver: -

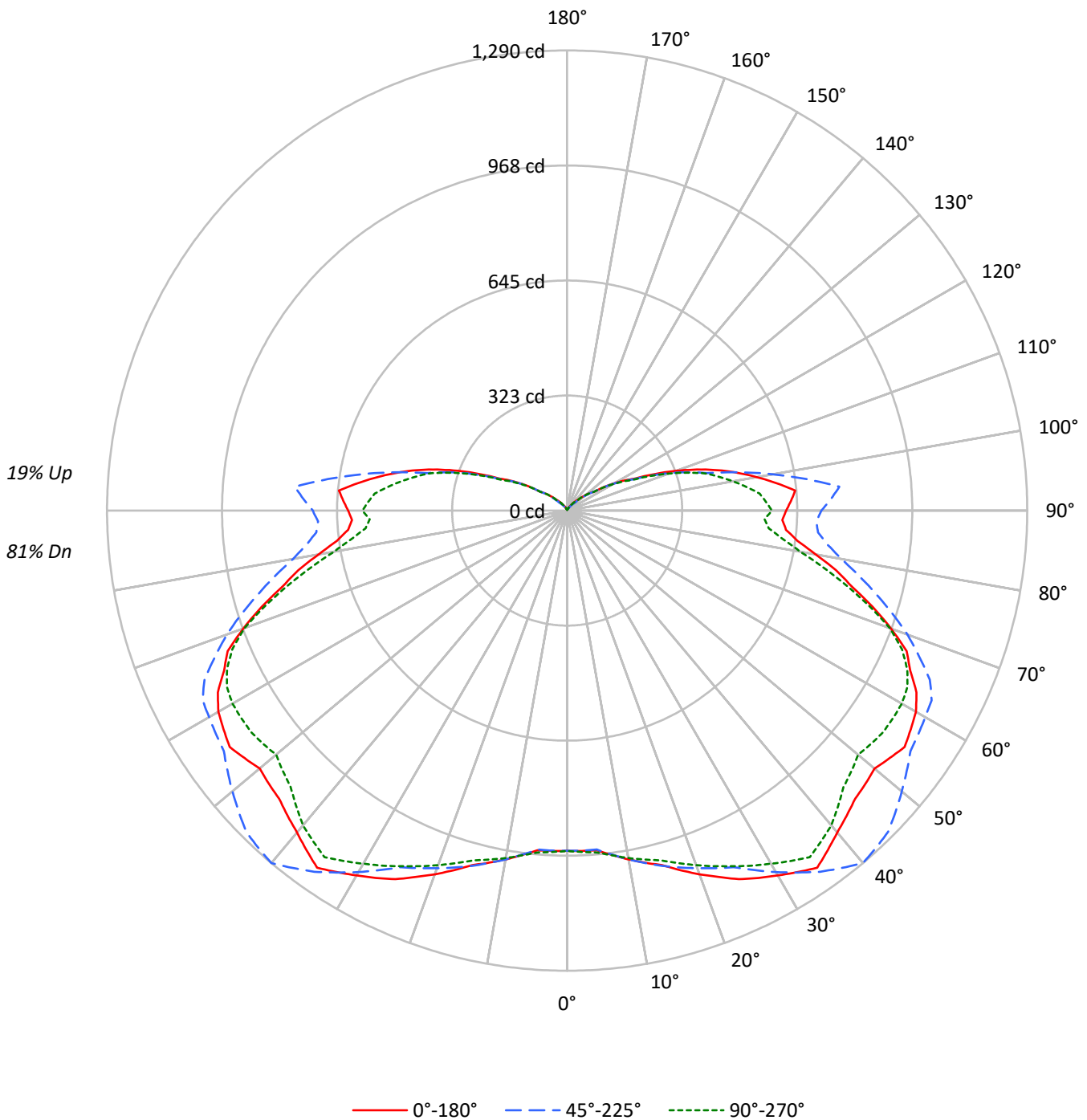
**Summary**

Lumens per Lamp: 9500 (1 lamp)  
Luminaire Lumens: 7919.2 lumens  
Efficiency: 83.4%  
Efficacy: 79.2 lumens/watt  
Spacing Criteria (0/90/45): 1.8 / 1.77 / 1.95  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Semi-Direct

Input Watts (W): 100  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): 3.0  
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	95	95	95	95	91	91	91	91	84	84	84		77	77	77		70	70	70	67
1	83	78	73	68	79	74	70	65	67	64	60		61	58	56		56	53	51	48
2	74	65	58	52	70	62	56	50	56	51	47		51	47	43		46	43	40	37
3	66	56	48	41	63	53	46	40	48	42	37		44	39	34		40	35	32	29
4	60	48	40	34	57	46	38	32	42	35	30		38	33	28		34	30	26	23
5	55	43	34	28	52	41	33	27	37	30	25		34	28	24		30	26	22	19
6	50	38	30	24	47	36	29	23	33	26	21		30	24	20		27	22	19	16
7	46	34	26	20	44	32	25	20	30	23	19		27	21	17		25	20	16	14
8	43	31	23	18	40	29	22	17	27	21	16		25	19	15		22	18	14	12
9	40	28	21	16	38	27	20	15	25	18	14		22	17	13		21	16	12	11
10	37	25	19	14	35	24	18	13	23	17	13		21	16	12		19	14	11	9

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

	0°	90°	180°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	92.6	1.2	1.0	0°	954	954	954	954	954	
10°-20°	292.7	3.7	3.1	5°	956	954	962	954	956	93
20°-30°	516.9	6.5	5.4	15°	1029	1031	1015	1031	1029	294
30°-40°	758.4	9.6	8.0	25°	1140	1103	1100	1103	1140	527
40°-50°	922.0	11.6	9.7	35°	1222	1236	1186	1236	1222	754
50°-60°	1038.7	13.1	10.9	45°	1142	1273	1096	1273	1142	888
60°-70°	1077.1	13.6	11.3	55°	1155	1175	1082	1175	1155	1024
70°-80°	937.8	11.8	9.9	65°	1061	1122	1052	1122	1061	1052
80°-90°	757.6	9.6	8.0	75°	827	894	810	894	827	881
90°-100°	712.7	9.0	7.5	85°	616	706	567	706	616	523
100°-110°	460.0	5.8	4.8	90°	614	713	574	713	614	337
110°-120°	216.4	2.7	2.3	95°	642	766	542	766	642	495
120°-130°	87.8	1.1	0.9	105°	438	406	402	406	438	462
130°-140°	32.7	0.4	0.3	115°	214	209	204	209	214	226
140°-150°	10.7	0.1	0.1	125°	92	93	92	93	92	92
150°-160°	3.6	0.0	0.0	135°	43	32	42	32	43	36
160°-170°	1.1	0.0	0.0	145°	17	12	18	12	17	12
170°-180°	0.2	0.0	0.0	155°	7	7	8	7	7	4
0°-30°	902.3	11.4	9.5	165°	3	3	4	3	3	1
0°-40°	1660.7	21.0	17.5	175°	2	2	3	2	2	0
0°-60°	3621.4	45.7	38.1	180°	2	2	2	2	2	
0°-90°	6393.9	80.7	67.3							
90°-120°	1389.0	17.5	14.6							
90°-150°	1520.2	19.2	16.0							
90°-180°	1525.0	19.3	16.1							
0°-180°	7919.2	100.0	83.4							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	954	954	954	954	954	954	954	954	954
2.5°	955	954	954	957	958	957	954	954	955
5°	956	953	954	960	962	960	954	953	956
7.5°	974	973	973	975	975	975	973	973	974
10°	993	993	993	991	989	991	993	993	993
12.5°	1011	1014	1012	1006	1002	1006	1012	1014	1011
15°	1029	1034	1031	1021	1015	1021	1031	1034	1029
17.5°	1057	1056	1049	1040	1036	1040	1049	1056	1057
20°	1085	1078	1067	1060	1058	1060	1067	1078	1085
22.5°	1112	1100	1085	1080	1079	1080	1085	1100	1112
25°	1140	1122	1103	1100	1100	1100	1103	1122	1140
27.5°	1161	1154	1136	1120	1122	1120	1136	1154	1161
30°	1181	1186	1170	1141	1143	1141	1170	1186	1181
32.5°	1202	1218	1203	1161	1165	1161	1203	1218	1202
35°	1222	1250	1236	1182	1186	1182	1236	1250	1222
37.5°	1200	1254	1263	1182	1169	1182	1263	1254	1200
40°	1178	1258	1290	1181	1152	1181	1290	1258	1178
42.5°	1160	1241	1282	1167	1124	1167	1282	1241	1160
45°	1142	1223	1273	1153	1096	1153	1273	1223	1142
47.5°	1134	1203	1249	1140	1081	1140	1249	1203	1134
50°	1125	1184	1225	1128	1065	1128	1225	1184	1125
52.5°	1140	1197	1200	1141	1074	1141	1200	1197	1140
55°	1155	1211	1175	1154	1082	1154	1175	1211	1155
57.5°	1142	1193	1167	1146	1083	1146	1167	1193	1142
60°	1129	1176	1159	1137	1083	1137	1159	1176	1129
62.5°	1104	1143	1152	1104	1075	1104	1152	1143	1104
65°	1061	1113	1122	1075	1052	1075	1122	1113	1061
67.5°	1030	1081	1068	1047	1016	1047	1068	1081	1030
70°	966	1035	1015	1012	962	1012	1015	1035	966
72.5°	898	984	955	967	887	967	955	984	898
75°	827	930	894	907	810	907	894	930	827
77.5°	772	876	836	838	735	838	836	876	772
80°	707	818	780	782	663	782	780	818	707
82.5°	651	768	737	725	609	725	737	768	651
85°	616	737	706	682	567	682	706	737	616
87.5°	604	713	699	663	554	663	699	713	604
90°	614	722	713	669	574	669	713	722	614
92.5°	628	728	740	666	558	666	740	728	628
95°	642	735	766	664	542	664	766	735	642
97.5°	591	666	676	606	507	606	676	666	591
100°	540	597	586	549	472	549	586	597	540
102.5°	489	528	496	492	437	492	496	528	489
105°	438	458	406	435	402	435	406	458	438
107.5°	382	393	357	375	353	375	357	393	382
110°	326	328	308	315	303	315	308	328	326



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	270	263	258	255	254	255	258	263	270
115°	214	198	209	195	204	195	209	198	214
117.5°	184	169	180	168	176	168	180	169	184
120°	153	141	151	141	148	141	151	141	153
122.5°	123	113	122	114	120	114	122	113	123
125°	92	85	93	87	92	87	93	85	92
127.5°	80	74	78	75	80	75	78	74	80
130°	68	62	63	63	67	63	63	62	68
132.5°	55	51	47	51	55	51	47	51	55
135°	43	40	32	39	42	39	32	40	43
137.5°	37	33	27	33	36	33	27	33	37
140°	30	27	22	27	30	27	22	27	30
142.5°	24	20	17	21	24	21	17	20	24
145°	17	14	12	15	18	15	12	14	17
147.5°	15	12	11	13	16	13	11	12	15
150°	12	10	10	11	13	11	10	10	12
152.5°	10	9	8	9	11	9	8	9	10
155°	7	7	7	7	8	7	7	7	7
157.5°	6	6	6	6	7	6	6	6	6
160°	5	5	5	6	6	6	5	5	5
162.5°	4	4	4	5	5	5	4	4	4
165°	3	3	3	4	4	4	3	3	3
167.5°	3	3	3	4	4	4	3	3	3
170°	3	3	3	4	4	4	3	3	3
172.5°	2	2	2	3	3	3	2	2	2
175°	2	2	2	3	3	3	2	2	2
177.5°	2	2	2	3	3	3	2	2	2
180°	2	2	2	2	2	2	2	2	2

(END OF REPORT)