

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: P31485

Luminaire Tested: **FMSC-D12-232-UNV-82/87-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31485
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMSC-D12-232-UNV-82/87-EB81
Description: FAIL-SAFE FMSC CONFINEMENT SURFACE CLAMSHELL FLUORESCENT
FIXTURE WITH 82/87 LENS
Light Source: (2) BIPIN T8 DOUBLE ENDED LINEAR FLUORESCENT LAMP 3500K
GE F32T8/SPX35/ECO 32 W
Ballast/Driver: (1) SYLVANIA ELECTRONIC BALLAST
SYL QTP2X32T8/UNV ISN-SC

Summary

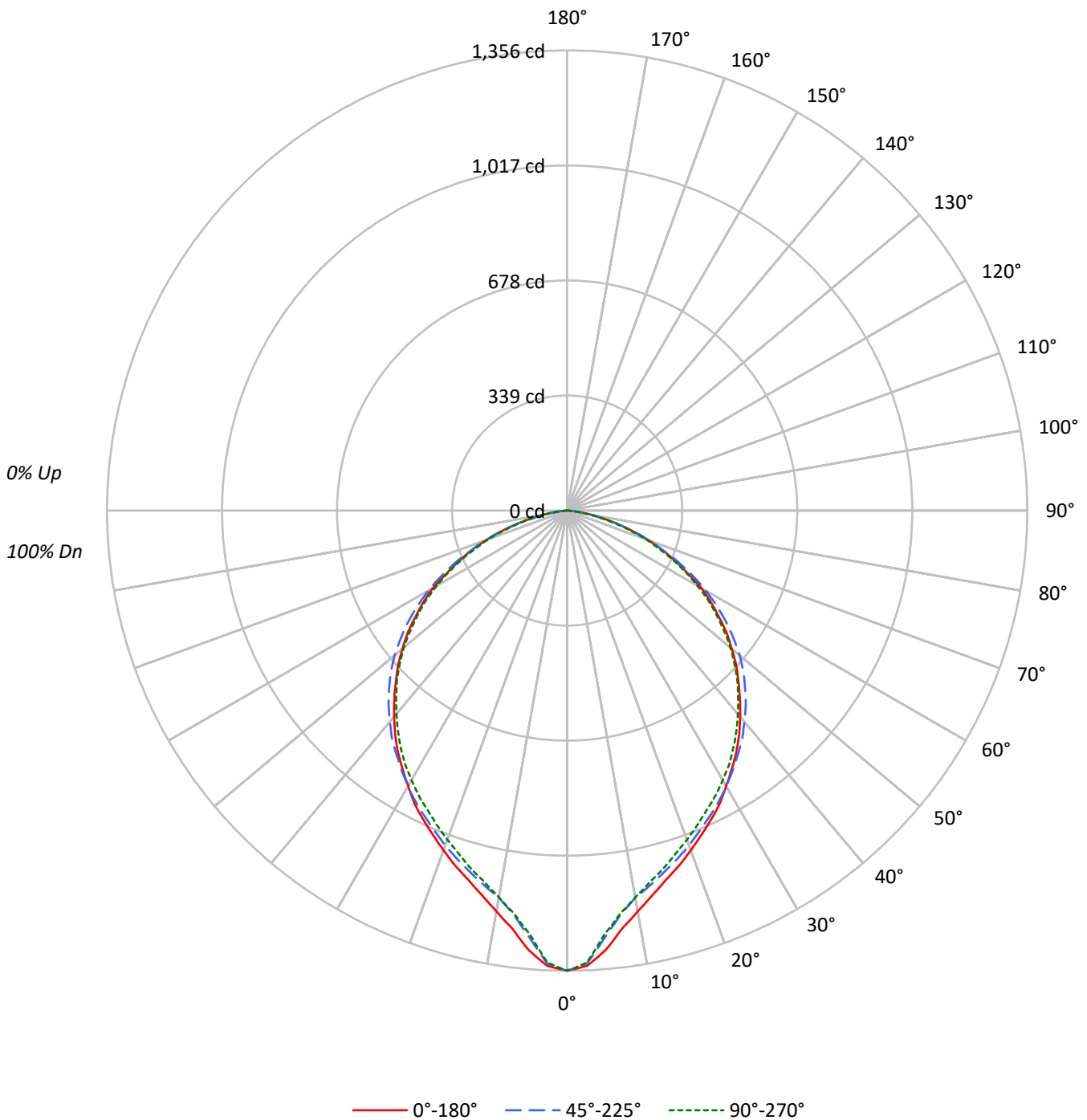
Lumens per Lamp: 3100 (2 lamps)
Luminaire Lumens: 3035.7 lumens
Efficiency: 49.0%
Efficacy: 55.5 lumens/watt
Spacing Criteria (0/90/45): 1.04 / 1.01 / 1.24
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 54.7
Input Voltage (V): 120.06
Input Current (Ain): 0.45586
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	51	49	48	52	50	49	47	48	47	45	46	45	44	45	44	43	42
2	49	45	42	39	48	44	41	39	42	40	38	41	39	37	39	38	36	35
3	45	40	36	33	43	39	35	32	37	34	32	36	34	31	35	33	31	30
4	41	35	31	28	40	35	31	28	33	30	27	32	29	27	31	29	27	26
5	38	32	27	24	37	31	27	24	30	26	24	29	26	23	28	25	23	22
6	35	28	24	21	34	28	24	21	27	23	21	26	23	21	26	23	20	19
7	32	26	22	19	32	25	21	19	25	21	18	24	21	18	23	20	18	17
8	30	24	19	17	29	23	19	17	23	19	17	22	19	16	21	19	16	15
9	28	22	18	15	27	21	18	15	21	17	15	20	17	15	20	17	15	14
10	26	20	16	14	26	20	16	14	19	16	14	19	16	14	18	16	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7298	7298	7298
5°	7023	6829	6775
10°	6553	6328	6323
15°	6274	6146	6090
20°	6100	6014	5911
25°	5962	5903	5778
30°	5823	5829	5699
35°	5709	5762	5611
40°	5571	5705	5501
45°	5434	5648	5396
50°	5300	5560	5258
55°	5123	5367	5048
60°	4919	5081	4779
65°	4483	4648	4368
70°	3997	4044	3887
75°	3244	3202	3098
80°	2232	2170	2015
85°	1112	1112	1050



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	118.2	3.9	1.9	0°	1356	1356	1356	1356	1356	
10°-20°	312.7	10.3	5.0	5°	1300	1288	1264	1261	1254	121
20°-30°	458.5	15.1	7.4	15°	1126	1120	1103	1100	1093	318
30°-40°	545.3	18.0	8.8	25°	1004	1006	994	986	973	463
40°-50°	561.1	18.5	9.0	35°	869	880	877	867	854	543
50°-60°	496.9	16.4	8.0	45°	714	730	742	724	709	551
60°-70°	352.0	11.6	5.7	55°	546	557	572	557	538	489
70°-80°	164.3	5.4	2.6	65°	352	358	365	355	343	349
80°-90°	26.7	0.9	0.4	75°	156	154	154	151	149	167
90°-100°	0.0	0.0	0.0	85°	18	19	18	18	17	27
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	
110°-120°	0.0	0.0	0.0							
120°-130°	0.0	0.0	0.0							
130°-140°	0.0	0.0	0.0							
140°-150°	0.0	0.0	0.0							
150°-160°	0.0	0.0	0.0							
160°-170°	0.0	0.0	0.0							
170°-180°	0.0	0.0	0.0							
0°-30°	889.4	29.3	14.3							
0°-40°	1434.7	47.3	23.1							
0°-60°	2492.7	82.1	40.2							
0°-90°	3035.7	100.0	49.0							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	3035.7	100.0	49.0							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1356	1356	1356	1356	1356
2.5°	1343	1344	1336	1337	1333
5°	1300	1288	1264	1261	1254
7.5°	1242	1230	1201	1200	1198
10°	1199	1184	1158	1160	1157
12.5°	1161	1150	1131	1128	1122
15°	1126	1120	1103	1100	1093
17.5°	1097	1091	1077	1072	1061
20°	1065	1064	1050	1044	1032
22.5°	1034	1034	1021	1018	1003
25°	1004	1006	994	986	973
27.5°	974	976	967	959	947
30°	937	947	938	930	917
32.5°	903	915	908	898	888
35°	869	880	877	867	854
37.5°	833	845	848	834	819
40°	793	810	812	798	783
42.5°	754	773	779	764	746
45°	714	730	742	724	709
47.5°	676	691	704	686	669
50°	633	648	664	646	628
52.5°	593	606	618	603	583
55°	546	557	572	557	538
57.5°	502	508	522	506	494
60°	457	459	472	458	444
62.5°	400	410	418	406	394
65°	352	358	365	355	343
67.5°	304	306	305	304	292
70°	254	254	257	251	247
72.5°	206	201	204	198	195
75°	156	154	154	151	149
77.5°	109	110	110	108	104
80°	72	70	70	70	65
82.5°	40	40	41	39	36
85°	18	19	18	18	17
87.5°	4	5	6	7	7
90°	0	0	0	0	0

(END OF REPORT)