

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: P31484

Luminaire Tested: **FMSC-D12-232-UNV-80/88-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31484
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-80/88-EB81
Description: FAIL-SAFE FMSC CONFINEMENT SURFACE CLAMSHELL FLUORESCENT
FIXTURE WITH 80/88 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

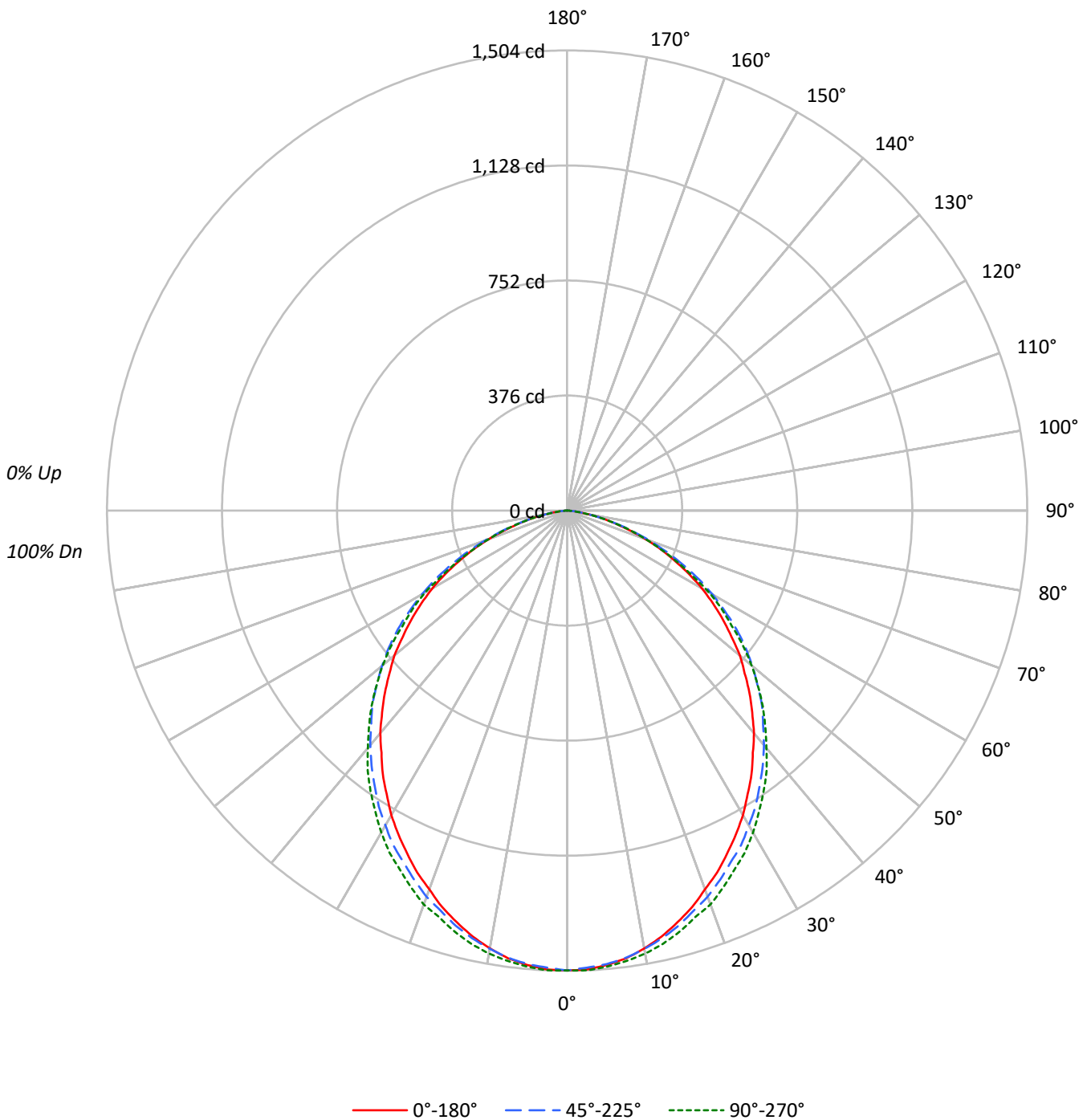
Lumens per Lamp: 3100 (2 lamps)
Luminaire Lumens: 3690.4 lumens
Efficiency: 59.5%
Efficacy: 67.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.2 / 1.3
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 54.4
Input Voltage (V): 120.06
Input Current (Ain): 0.4536
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	71	71	71	71	69	69	69	69	66	66	66		63	63	63		61	61	61	60
1	65	63	60	58	64	61	59	57	59	57	56		57	55	54		54	53	52	51
2	60	55	51	48	58	54	50	48	52	49	46		50	48	45		48	46	44	43
3	55	49	44	40	53	48	43	40	46	42	39		44	41	39		43	40	38	37
4	50	43	38	34	49	43	38	34	41	37	34		40	36	33		38	35	33	32
5	46	39	34	30	45	38	33	30	37	33	29		36	32	29		35	31	29	28
6	43	35	30	26	42	34	30	26	33	29	26		32	29	26		32	28	25	24
7	40	32	27	23	39	31	27	23	30	26	23		30	26	23		29	25	23	21
8	37	29	24	21	36	29	24	21	28	24	21		27	23	20		27	23	20	19
9	35	27	22	19	34	26	22	19	26	22	19		25	21	19		25	21	18	17
10	32	25	20	17	32	24	20	17	24	20	17		23	20	17		23	19	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8089	8089	8089
5°	8055	8039	8082
10°	7941	7952	8034
15°	7762	7828	7934
20°	7543	7692	7846
25°	7346	7524	7684
30°	7141	7383	7551
35°	6905	7207	7359
40°	6674	7033	7117
45°	6416	6858	6881
50°	6171	6615	6589
55°	5836	6334	6165
60°	5479	5899	5780
65°	4954	5298	5056
70°	4280	4485	4312
75°	3327	3493	3431
80°	2170	2263	2232
85°	865	1050	1050



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	141.5	3.8	2.3	0°	1503	1503	1503	1503	1503	
10°-20°	396.9	10.8	6.4	5°	1491	1494	1488	1496	1496	141
20°-30°	585.2	15.9	9.4	15°	1393	1400	1405	1420	1424	392
30°-40°	683.4	18.5	11.0	25°	1237	1254	1267	1291	1294	570
40°-50°	683.9	18.5	11.0	35°	1051	1071	1097	1117	1120	656
50°-60°	589.5	16.0	9.5	45°	843	868	901	909	904	650
60°-70°	403.7	10.9	6.5	55°	622	651	675	677	657	556
70°-80°	179.1	4.9	2.9	65°	389	407	416	415	397	386
80°-90°	27.1	0.7	0.4	75°	160	170	168	165	165	174
90°-100°	0.0	0.0	0.0	85°	14	18	17	17	17	25
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°	1123.5	30.4	18.1							
0°-40°	1807.0	49.0	29.1							
0°-60°	3080.4	83.5	49.7							
0°-90°	3690.4	100.0	59.5							
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°	3690.4	100.0	59.5							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1503	1503	1503	1503	1503
2.5°	1501	1502	1495	1503	1504
5°	1491	1494	1488	1496	1496
7.5°	1476	1479	1474	1485	1485
10°	1453	1455	1455	1468	1470
12.5°	1426	1431	1432	1446	1450
15°	1393	1400	1405	1420	1424
17.5°	1359	1369	1372	1391	1393
20°	1317	1332	1343	1362	1370
22.5°	1281	1294	1306	1328	1333
25°	1237	1254	1267	1291	1294
27.5°	1194	1212	1232	1254	1259
30°	1149	1165	1188	1212	1215
32.5°	1098	1121	1146	1168	1167
35°	1051	1071	1097	1117	1120
37.5°	997	1022	1050	1066	1071
40°	950	971	1001	1015	1013
42.5°	895	920	948	962	959
45°	843	868	901	909	904
47.5°	787	818	844	852	845
50°	737	759	790	796	787
52.5°	677	709	734	739	725
55°	622	651	675	677	657
57.5°	565	593	611	611	599
60°	509	532	548	546	537
62.5°	449	469	485	479	462
65°	389	407	416	415	397
67.5°	331	345	351	348	333
70°	272	285	285	284	274
72.5°	214	224	224	222	219
75°	160	170	168	165	165
77.5°	116	119	114	113	114
80°	70	75	73	71	72
82.5°	39	41	41	40	38
85°	14	18	17	17	17
87.5°	3	6	7	8	8
90°	0	0	0	0	0

(END OF REPORT)