

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: P31481

Luminaire Tested: **FMSC-D12-232-UNV-80/85-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31481
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-80/85-EB81
Description: FAIL-SAFE FMSC CONFINEMENT SURFACE CLAMSHELL FLUORESCENT
FIXTURE WITH 80/85 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

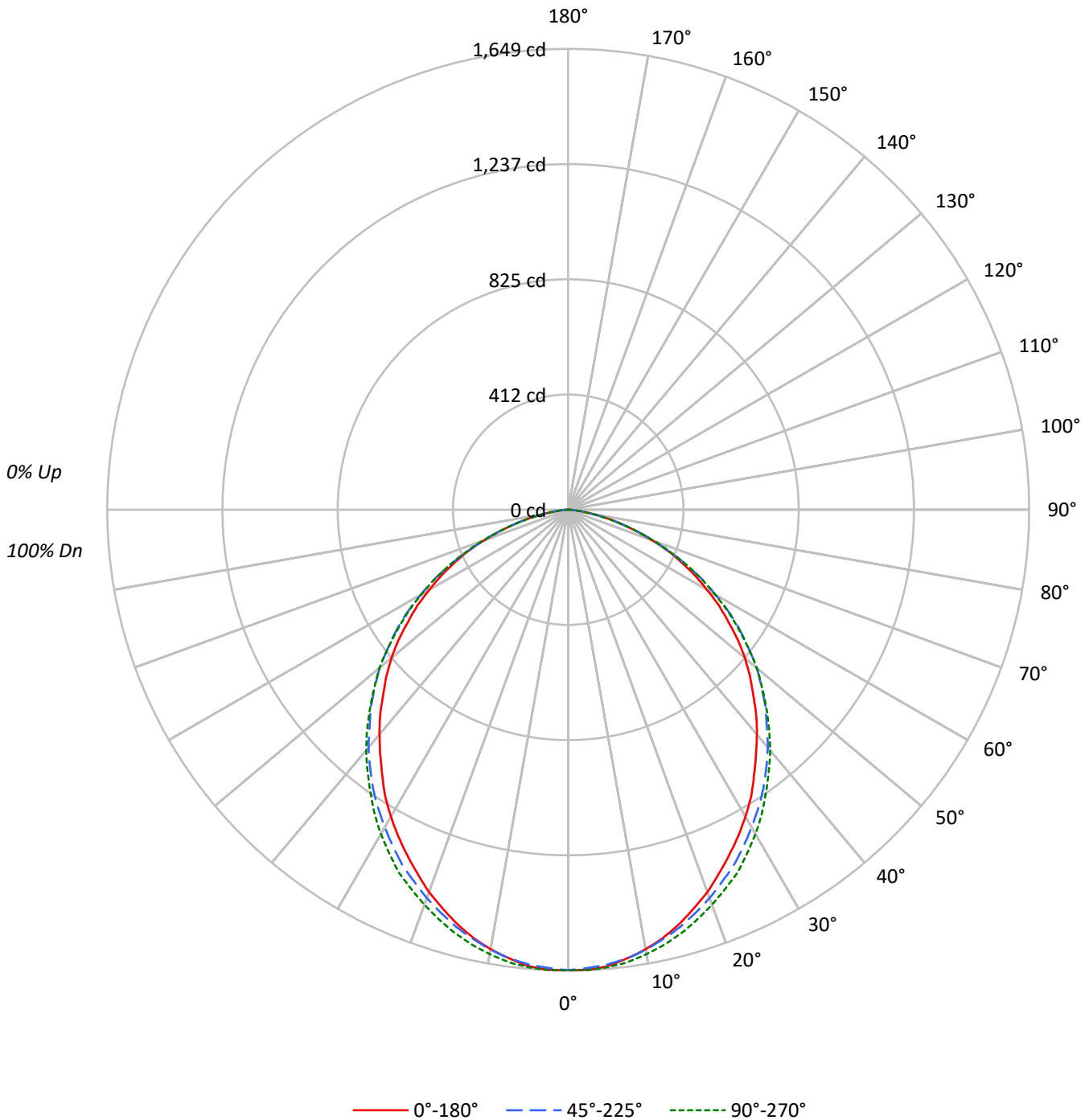
Lumens per Lamp: 3100 (2 lamps)
Luminaire Lumens: 4120.1 lumens
Efficiency: 66.5%
Efficacy: 77.2 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.21 / 1.31
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 53.4
Input Voltage (V): 120.07
Input Current (Ain): 0.44548
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

TEST NUMBER: P31481

CATALOG NUMBER: FMSC-D12-232-UNV-80/85-EB81

Luminous Intensity Polar Plot





TEST NUMBER: P31481

CATALOG NUMBER: FMSC-D12-232-UNV-80/85-EB81

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	79	79	79	79	77	77	77	77	74	74	74		71	71	71		68	68	68	66
1	73	70	67	65	71	68	66	64	66	64	62		63	61	60		61	59	58	57
2	67	61	57	53	65	60	56	53	58	54	52		56	53	50		54	51	49	48
3	61	54	49	45	59	53	48	44	51	47	44		49	46	43		48	45	42	41
4	56	48	42	38	54	47	42	38	46	41	37		44	40	37		43	39	36	35
5	51	43	37	33	50	42	37	33	41	36	33		40	35	32		38	35	32	30
6	48	39	33	29	46	38	33	29	37	32	29		36	32	28		35	31	28	27
7	44	35	30	26	43	35	29	26	34	29	25		33	28	25		32	28	25	24
8	41	32	27	23	40	32	27	23	31	26	23		30	26	23		29	25	22	21
9	38	30	24	21	38	29	24	21	29	24	21		28	24	20		27	23	20	19
10	36	27	22	19	35	27	22	19	26	22	19		26	22	19		25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4435	4435	4435
5°	4427	4411	4438
10°	4364	4369	4413
15°	4276	4307	4368
20°	4170	4235	4307
25°	4047	4166	4255
30°	3940	4077	4164
35°	3807	3998	4054
40°	3688	3903	3948
45°	3558	3798	3813
50°	3454	3684	3688
55°	3279	3514	3486
60°	3084	3278	3261
65°	2859	2961	2961
70°	2502	2549	2565
75°	2048	2027	2027
80°	1410	1364	1395
85°	710	741	772



TEST NUMBER: P31481

CATALOG NUMBER: FMSC-D12-232-UNV-80/85-EB81

ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	155.3	3.8	2.5	0°	1648	1648	1648	1648	1648	
10°-20°	436.7	10.6	7.0	5°	1639	1637	1633	1642	1643	155
20°-30°	645.5	15.7	10.4	15°	1535	1541	1546	1562	1568	432
30°-40°	756.1	18.4	12.2	25°	1363	1383	1403	1424	1433	628
40°-50°	760.0	18.4	12.3	35°	1159	1185	1217	1239	1234	726
50°-60°	659.7	16.0	10.6	45°	935	965	998	1011	1002	724
60°-70°	458.7	11.1	7.4	55°	699	730	749	755	743	626
70°-80°	212.1	5.1	3.4	65°	449	460	465	471	465	443
80°-90°	36.0	0.9	0.6	75°	197	197	195	199	195	211
90°-100°	0.0	0.0	0.0	85°	23	26	24	25	25	35
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°	1237.5	30.0	20.0							
0°-40°	1993.6	48.4	32.2							
0°-60°	3413.3	82.8	55.1							
0°-90°	4120.1	100.0	66.5							
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°	4120.1	100.0	66.5							



TEST NUMBER: P31481

CATALOG NUMBER: FMSC-D12-232-UNV-80/85-EB81

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1648	1648	1648	1648	1648
2.5°	1648	1648	1641	1650	1649
5°	1639	1637	1633	1642	1643
7.5°	1619	1624	1619	1629	1633
10°	1597	1600	1599	1612	1615
12.5°	1569	1573	1573	1588	1594
15°	1535	1541	1546	1562	1568
17.5°	1495	1505	1513	1532	1537
20°	1456	1466	1479	1499	1504
22.5°	1409	1427	1440	1464	1468
25°	1363	1383	1403	1424	1433
27.5°	1317	1339	1358	1384	1386
30°	1268	1286	1312	1338	1340
32.5°	1218	1238	1266	1288	1289
35°	1159	1185	1217	1239	1234
37.5°	1104	1132	1164	1183	1179
40°	1050	1077	1111	1125	1124
42.5°	996	1020	1051	1069	1064
45°	935	965	998	1011	1002
47.5°	882	906	937	950	940
50°	825	850	880	888	881
52.5°	764	791	813	826	812
55°	699	730	749	755	743
57.5°	640	661	682	689	678
60°	573	593	609	621	606
62.5°	512	526	540	547	538
65°	449	460	465	471	465
67.5°	387	391	394	398	396
70°	318	323	324	331	326
72.5°	257	262	260	266	256
75°	197	197	195	199	195
77.5°	141	142	138	139	138
80°	91	91	88	94	90
82.5°	54	53	51	54	52
85°	23	26	24	25	25
87.5°	7	8	10	11	10
90°	0	0	0	0	0

(END OF REPORT)