

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: P31483

Luminaire Tested: **FMSC-D12-232-UNV-80/87-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31483
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-80/87-EB81
Description: FAIL-SAFE FMSC CONFINEMENT SURFACE CLAMSHELL FLUORESCENT
FIXTURE WITH 80/87 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

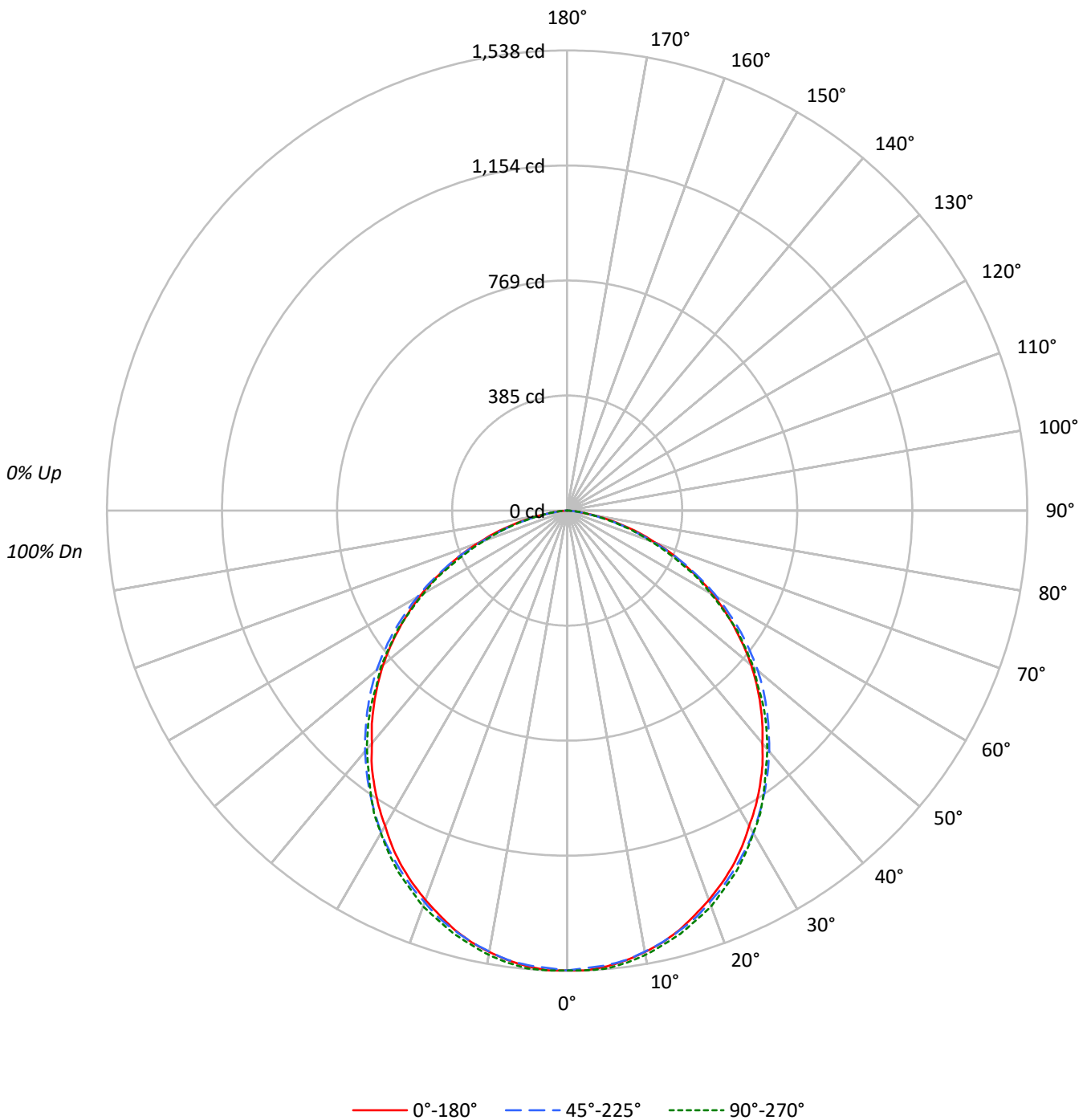
Lumens per Lamp: 3100 (2 lamps)
Luminaire Lumens: 3889.6 lumens
Efficiency: 62.7%
Efficacy: 71.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.21 / 1.32
Luminous Opening: Rectangular (W 0.92' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 54.5
Input Voltage (V): 120.05
Input Current (A_{in}): 0.4548
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	75	75	75	75	73	73	73	73	70	70	70	67	67	67	64	64	64	63
1	69	66	63	61	67	65	62	60	62	60	58	59	58	57	57	56	55	54
2	63	58	54	50	61	57	53	50	55	51	49	52	50	48	51	48	47	45
3	57	51	46	42	56	50	46	42	48	44	41	47	43	40	45	42	40	38
4	53	45	40	36	51	45	40	36	43	39	35	42	38	35	40	37	34	33
5	49	41	35	31	47	40	35	31	39	34	31	37	33	30	36	33	30	29
6	45	37	31	27	44	36	31	27	35	30	27	34	30	27	33	29	26	25
7	42	33	28	24	41	33	28	24	32	27	24	31	27	24	30	26	24	22
8	39	30	25	22	38	30	25	22	29	25	21	28	24	21	28	24	21	20
9	36	28	23	20	35	28	23	19	27	22	19	26	22	19	26	22	19	18
10	34	26	21	18	33	26	21	18	25	21	18	24	20	18	24	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4708	4708	4708
5°	4702	4689	4723
10°	4660	4656	4691
15°	4602	4608	4643
20°	4515	4541	4590
25°	4428	4472	4509
30°	4305	4400	4404
35°	4199	4300	4286
40°	4059	4203	4163
45°	3955	4089	4025
50°	3827	3965	3870
55°	3653	3786	3685
60°	3461	3547	3388
65°	3167	3225	3052
70°	2812	2741	2651
75°	2320	2166	2154
80°	1623	1447	1482
85°	808	738	808



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	145.2	3.7	2.3	0°	1537	1537	1537	1537	1537	
10°-20°	410.7	10.6	6.6	5°	1529	1531	1525	1534	1536	145
20°-30°	609.7	15.7	9.8	15°	1451	1454	1453	1462	1464	409
30°-40°	715.2	18.4	11.5	25°	1310	1320	1323	1334	1334	602
40°-50°	719.5	18.5	11.6	35°	1123	1140	1150	1149	1146	702
50°-60°	623.0	16.0	10.0	45°	913	931	944	939	929	704
60°-70°	434.1	11.2	7.0	55°	684	704	709	695	690	612
70°-80°	199.2	5.1	3.2	65°	437	451	445	430	421	435
80°-90°	33.0	0.8	0.5	75°	196	191	183	177	182	211
90°-100°	0.0	0.0	0.0	85°	23	22	21	23	23	34
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°	1165.5	30.0	18.8							
0°-40°	1880.7	48.4	30.3							
0°-60°	3223.3	82.9	52.0							
0°-90°	3889.6	100.0	62.7							
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°	3889.6	100.0	62.7							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1537	1537	1537	1537	1537
2.5°	1538	1537	1530	1540	1538
5°	1529	1531	1525	1534	1536
7.5°	1516	1521	1515	1523	1524
10°	1498	1501	1497	1506	1508
12.5°	1478	1479	1477	1487	1486
15°	1451	1454	1453	1462	1464
17.5°	1418	1426	1427	1438	1435
20°	1385	1391	1393	1404	1408
22.5°	1349	1355	1360	1369	1369
25°	1310	1320	1323	1334	1334
27.5°	1266	1278	1284	1295	1291
30°	1217	1231	1244	1249	1245
32.5°	1172	1186	1197	1203	1201
35°	1123	1140	1150	1149	1146
37.5°	1073	1090	1101	1099	1091
40°	1015	1035	1051	1051	1041
42.5°	966	983	997	994	986
45°	913	931	944	939	929
47.5°	859	874	889	881	864
50°	803	821	832	820	812
52.5°	744	763	770	760	748
55°	684	704	709	695	690
57.5°	625	641	642	631	619
60°	565	578	579	563	553
62.5°	503	517	512	498	494
65°	437	451	445	430	421
67.5°	381	381	378	365	358
70°	314	314	306	298	296
72.5°	259	254	240	234	239
75°	196	191	183	177	182
77.5°	142	137	129	126	130
80°	92	89	82	80	84
82.5°	51	52	45	47	51
85°	23	22	21	23	23
87.5°	6	7	8	9	10
90°	0	0	0	0	0

(END OF REPORT)