

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: P31799

Luminaire Tested: **FUSL-D12-254T5-UNV-82/87-EB51**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P31799
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUSL-D12-254T5-UNV-82/87-EB51
Description: FAIL-SAFE 1X4 FLUORESCENT 16 GAUGE CONFINEMENT-CORRECTIONAL
FIXTURE WITH A 0.187 PRISMATIC LENS FIXTURE SIDE, A 0.375
CLEAR POLYCARBONATE LENS ENVIRONMENTAL SIDE
Light Source: (2) GE BIPIN T5 DOUBLE ENDED LINEAR FLUORESCENT LAMP 3500K
F54W-T5-835-ECO
Ballast/Driver: (1) UNIVERSAL BALLAST
B254PUNV-D

Summary

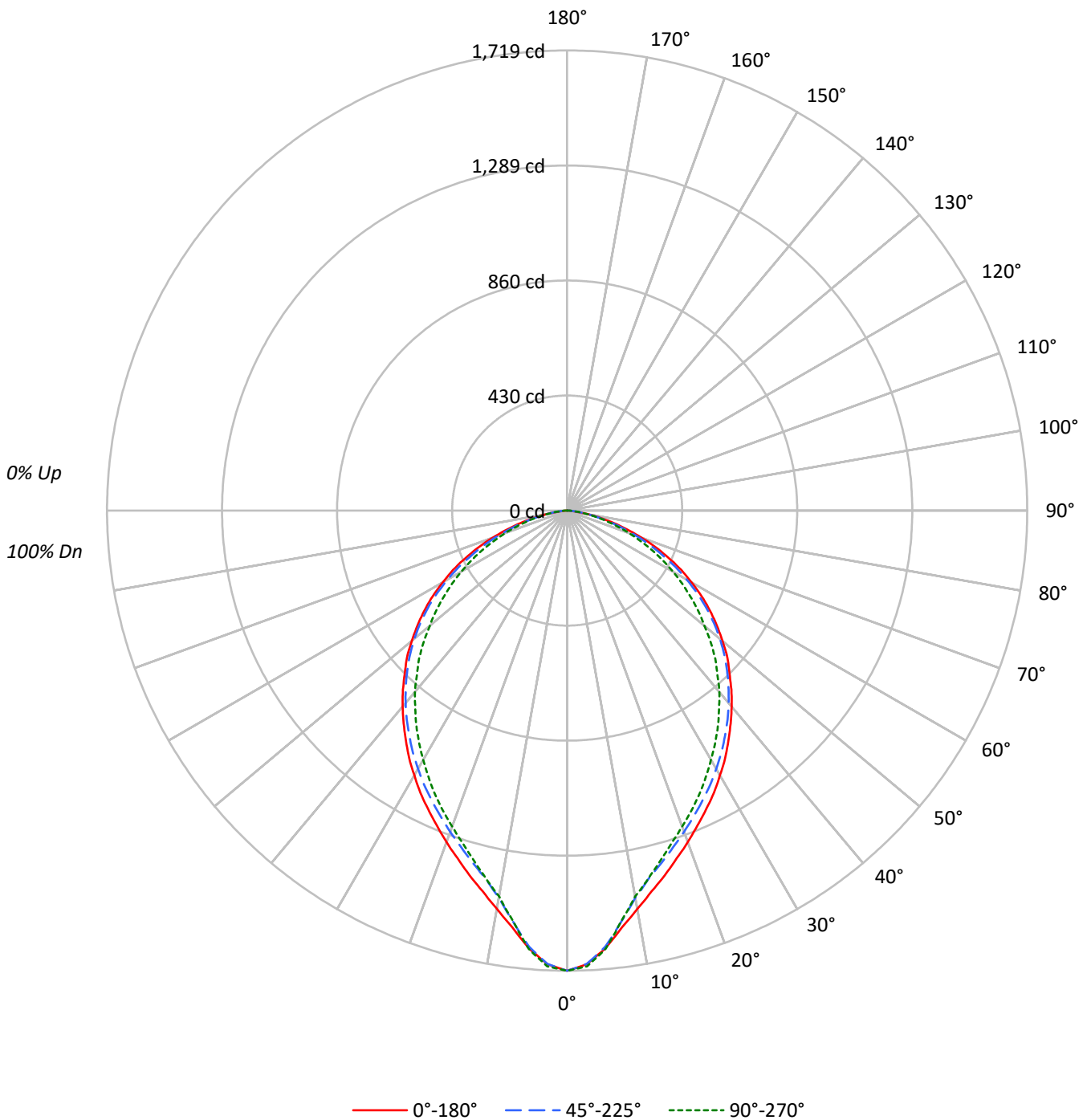
Lumens per Lamp: 4400 (2 lamps)
Luminaire Lumens: 3533.2 lumens
Efficiency: 40.2%
Efficacy: 34.7 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.95 / 1.17
Luminous Opening: Rectangular (W 0.44' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 101.8
Input Voltage (V): 120.03
Input Current (A_{in}): 0.850
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	50	30	10	0	
RCR																						
0	48	48	48	48	47	47	47	47	45	45	45	43	43	43	41	41	41	40				40
1	44	42	41	39	43	41	40	39	40	38	37	38	37	36	37	36	35	34				34
2	40	37	35	32	39	36	34	32	35	33	31	34	32	31	32	31	30	29				29
3	37	33	30	27	36	32	29	27	31	29	27	30	28	26	29	27	26	25				25
4	34	29	26	23	33	29	26	23	28	25	23	27	24	22	26	24	22	21				21
5	31	26	23	20	30	26	23	20	25	22	20	24	22	20	23	21	19	19				19
6	29	24	20	18	28	23	20	18	23	20	18	22	19	17	21	19	17	16				16
7	27	22	18	16	26	21	18	16	21	18	16	20	17	15	20	17	15	15				15
8	25	20	16	14	24	19	16	14	19	16	14	18	16	14	18	16	14	13				13
9	23	18	15	13	23	18	15	13	17	15	13	17	14	13	17	14	13	12				12
10	22	17	14	12	21	17	14	12	16	13	12	16	13	12	15	13	11	11				11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10573	10573	10573
5°	10132	10095	10151
10°	9437	9169	9144
15°	8979	8673	8603
20°	8627	8359	8221
25°	8348	8117	7934
30°	8111	7912	7635
35°	7884	7719	7374
40°	7676	7540	7106
45°	7455	7350	6802
50°	7244	7129	6411
55°	6981	6820	6037
60°	6606	6348	5622
65°	6084	5705	5094
70°	5305	4928	4442
75°	4301	3874	3612
80°	2798	2727	2621
85°	1129	1694	1764



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	151.1	4.3	1.7	0°	1719	1719	1719	1719	1719	
10°-20°	387.2	11.0	4.4	5°	1641	1640	1635	1641	1644	152
20°-30°	553.4	15.7	6.3	15°	1410	1394	1362	1354	1351	397
30°-40°	642.4	18.2	7.3	25°	1230	1228	1196	1182	1169	567
40°-50°	644.7	18.2	7.3	35°	1050	1057	1028	1006	982	657
50°-60°	556.9	15.8	6.3	45°	857	869	845	810	782	663
60°-70°	386.5	10.9	4.4	55°	651	657	636	596	563	581
70°-80°	178.9	5.1	2.0	65°	418	413	392	372	350	413
80°-90°	32.0	0.9	0.4	75°	181	174	163	163	152	192
90°-100°	0.0	0.0	0.0	85°	16	20	24	26	25	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°	1091.7	30.9	12.4							
0°-40°	1734.2	49.1	19.7							
0°-60°	2935.8	83.1	33.4							
0°-90°	3533.2	100.0	40.2							
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°	3533.2	100.0	40.2							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1719	1719	1719	1719	1719
2.5°	1696	1698	1695	1704	1704
5°	1641	1640	1635	1641	1644
7.5°	1570	1565	1549	1546	1547
10°	1511	1499	1468	1464	1464
12.5°	1457	1444	1408	1402	1406
15°	1410	1394	1362	1354	1351
17.5°	1362	1350	1318	1309	1301
20°	1318	1310	1277	1265	1256
22.5°	1273	1268	1236	1222	1213
25°	1230	1228	1196	1182	1169
27.5°	1188	1185	1156	1139	1122
30°	1142	1144	1114	1095	1075
32.5°	1098	1102	1072	1051	1029
35°	1050	1057	1028	1006	982
37.5°	1003	1015	984	958	932
40°	956	968	939	910	885
42.5°	908	921	892	860	831
45°	857	869	845	810	782
47.5°	812	820	796	758	727
50°	757	767	745	706	670
52.5°	705	713	691	651	619
55°	651	657	636	596	563
57.5°	596	599	577	541	510
60°	537	536	516	485	457
62.5°	481	474	456	428	403
65°	418	413	392	372	350
67.5°	357	352	332	317	296
70°	295	290	274	261	247
72.5°	234	230	215	212	197
75°	181	174	163	163	152
77.5°	126	124	116	117	111
80°	79	79	77	78	74
82.5°	41	44	45	47	46
85°	16	20	24	26	25
87.5°	3	8	13	15	16
90°	0	0	0	0	0

(END OF REPORT)