

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: ITL50335

Luminaire Tested: **FMS24CR-454-120-80/86**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: ITL50335
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMS24CR-454-120-80/86
Description: FABRICATED METAL HOUSING WITH WHITE PAINTED INTERIOR FINISH,
FABRICATED WHITE PAINTED METAL BALLAST COVER, 1/4" CLEAR
POLYCARBONATE LENS WITH 1/8" CLEAR ACRYLIC PRISMATIC OVERLAY
IN FABRICATED WHITE PAINTED METAL DOOR FRAME.
Light Source: FOUR 54-WATT T-5 SYLVANIA FP54/835/HO LINEAR FLUORESCENTS.
Ballast/Driver: TWO ENERGY SAVINGS ES-2-T5-54-UNV-K

Summary

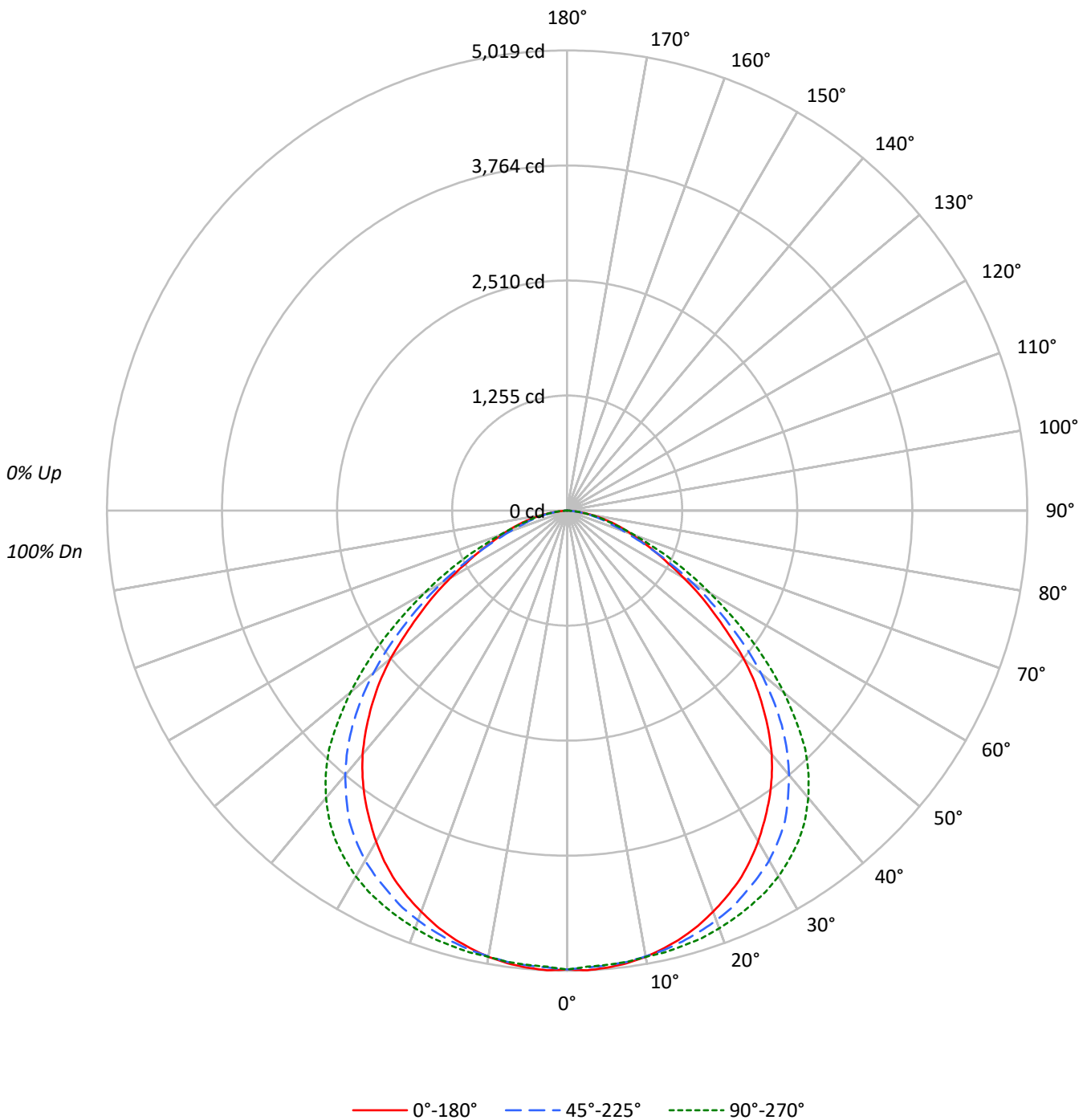
Lumens per Lamp: 5000 (4 lamps)
Luminaire Lumens: 12806.9 lumens
Efficiency: 64.0%
Efficacy: 54.7 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.36 / 1.38
Luminous Opening: Rectangular (W 1.54' x L: 3.69' x H: 0')
CIE Type: Direct

Input Watts (W): 234
Input Voltage (V): NR
Input Current (Ain): NR
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: ITL50335

CATALOG NUMBER: FMS24CR-454-120-80/86

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	76	76	76	76	74	74	74	74	71	71	71	68	68	68	65	65	65	64
1	70	68	65	63	69	66	64	62	64	62	60	61	60	58	59	58	57	55
2	65	60	56	53	63	59	55	52	56	53	51	54	52	50	52	50	49	47
3	59	53	48	44	58	52	48	44	50	46	43	48	45	43	47	44	42	40
4	55	47	42	38	53	47	42	38	45	41	37	43	40	37	42	39	36	35
5	50	43	37	33	49	42	37	33	40	36	33	39	35	32	38	35	32	31
6	47	38	33	29	45	38	33	29	37	32	29	36	32	28	35	31	28	27
7	43	35	30	26	42	34	29	26	33	29	25	33	28	25	32	28	25	24
8	40	32	27	23	39	31	26	23	31	26	23	30	26	23	29	25	23	21
9	38	29	24	21	37	29	24	21	28	24	21	28	23	20	27	23	20	19
10	35	27	22	19	34	27	22	19	26	22	19	25	21	19	25	21	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9463	9463	9463
5°	9497	9452	9438
10°	9488	9480	9488
15°	9446	9521	9613
20°	9368	9569	9756
25°	9277	9592	9905
30°	9100	9624	10062
35°	8872	9558	10156
40°	8569	9295	10097
45°	8064	8851	9821
50°	7392	8121	9077
55°	6451	7100	8056
60°	5555	5982	6784
65°	4706	4671	5570
70°	4102	3654	4317
75°	3674	3024	3390
80°	2864	2526	2613
85°	1519	1432	1670



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	474.8	3.7	2.4	0°	5005	5005	5005	5005	5005	
10°-20°	1375.9	10.7	6.9	5°	5004	5004	4980	4980	4973	476
20°-30°	2122.9	16.6	10.6	15°	4826	4845	4864	4903	4911	1361
30°-40°	2583.0	20.2	12.9	25°	4447	4505	4598	4718	4748	2045
40°-50°	2561.9	20.0	12.8	35°	3844	3960	4141	4335	4400	2400
50°-60°	1957.8	15.3	9.8	45°	3016	3132	3310	3569	3673	2320
60°-70°	1128.0	8.8	5.6	55°	1957	2057	2154	2328	2444	1761
70°-80°	498.2	3.9	2.5	65°	1052	1102	1044	1195	1245	1055
80°-90°	104.5	0.8	0.5	75°	503	479	414	472	464	528
90°-100°	0.0	0.0	0.0	85°	70	93	66	81	77	101
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°	3973.6	31.0	19.9							
0°-40°	6556.6	51.2	32.8							
0°-60°	11076.3	86.5	55.4							
0°-90°	12806.9	100.0	64.0							
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°	12806.9	100.0	64.0							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5005	5005	5005	5005	5005
2.5°	5019	5015	4988	4984	4980
5°	5004	5004	4980	4980	4973
7.5°	4980	4973	4965	4973	4965
10°	4942	4942	4938	4957	4942
12.5°	4888	4892	4907	4930	4934
15°	4826	4845	4864	4903	4911
17.5°	4748	4779	4814	4868	4888
20°	4656	4706	4756	4830	4849
22.5°	4555	4613	4690	4779	4803
25°	4447	4505	4598	4718	4748
27.5°	4315	4381	4509	4648	4687
30°	4168	4254	4408	4567	4609
32.5°	4006	4114	4281	4466	4509
35°	3844	3960	4141	4335	4400
37.5°	3666	3793	3956	4192	4261
40°	3472	3608	3766	4022	4091
42.5°	3248	3383	3550	3817	3898
45°	3016	3132	3310	3569	3673
47.5°	2776	2885	3043	3291	3380
50°	2513	2606	2761	3001	3086
52.5°	2227	2332	2463	2680	2769
55°	1957	2057	2154	2328	2444
57.5°	1717	1794	1860	2003	2104
60°	1469	1543	1582	1709	1794
62.5°	1237	1319	1303	1446	1516
65°	1052	1102	1044	1195	1245
67.5°	874	920	828	955	982
70°	742	758	661	770	781
72.5°	619	615	514	603	611
75°	503	479	414	472	464
77.5°	379	367	309	352	356
80°	263	263	232	247	240
82.5°	155	170	139	155	155
85°	70	93	66	81	77
87.5°	15	27	31	31	23
90°	0	0	0	0	0

(END OF REPORT)