

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P564135

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564135  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4STD-40-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

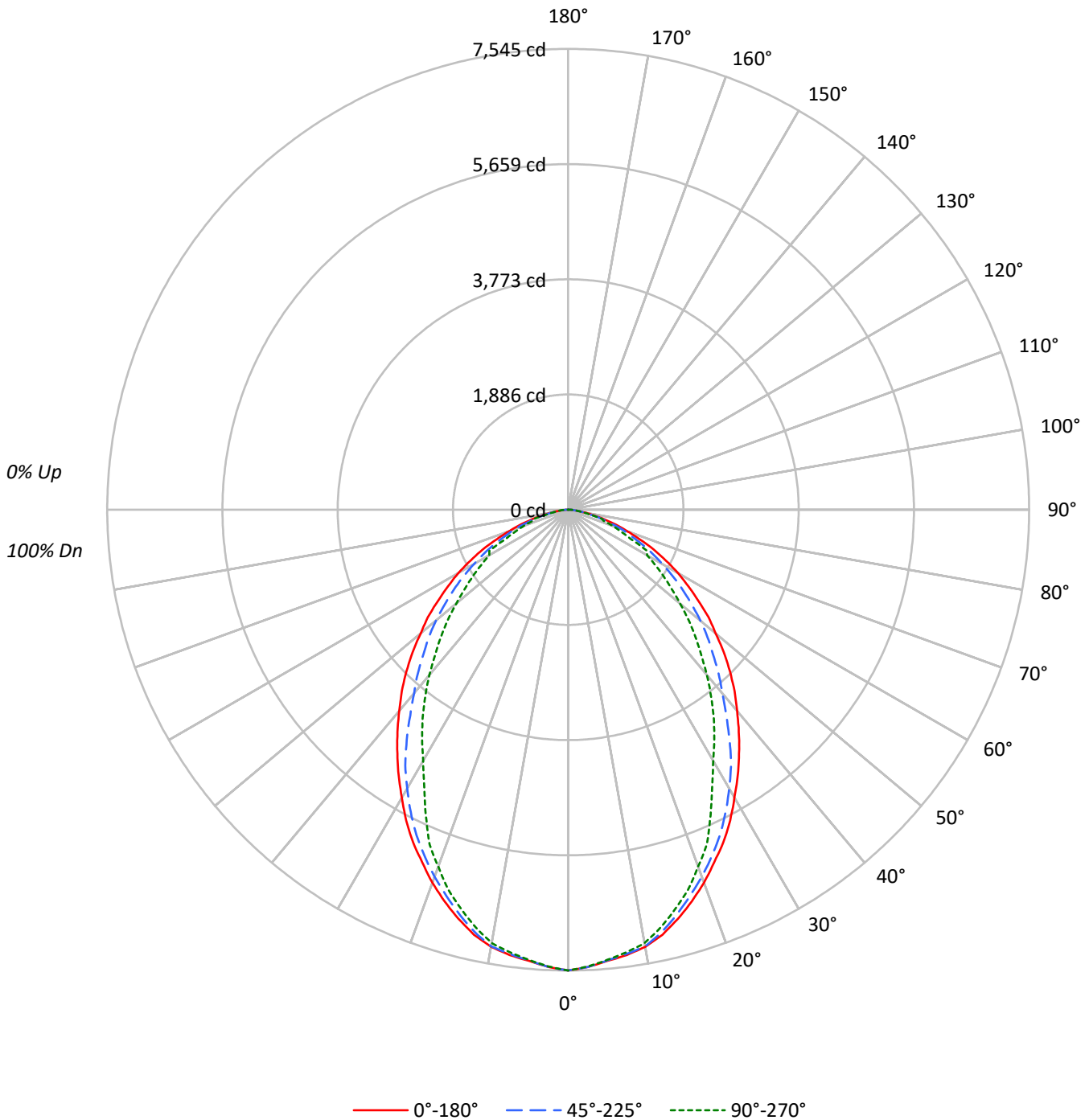
Lumens per Lamp: N/A  
Luminaire Lumens: 14812.0 lumens  
Efficiency: N/A  
Efficacy: 111.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: 24 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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10152	10152	10152
5°	10014	10002	9990
10°	9927	9915	9844
15°	9659	9562	9428
20°	9305	9155	8905
25°	8922	8728	8184
30°	8456	8185	7372
35°	8009	7565	6820
40°	7553	6894	6205
45°	7120	6373	5610
50°	6591	5916	5003
55°	6097	5361	4481
60°	5586	4788	4014
65°	4915	4193	3555
70°	4049	3672	3020
75°	3219	2811	2948
80°	2163	2028	1892
85°	1346	1616	1885

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7120 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	702.3	4.7
10°-20°	1927.5	13.0
20°-30°	2668.5	18.0
30°-40°	2845.4	19.2
40°-50°	2595.8	17.5
50°-60°	2033.6	13.7
60°-70°	1325.4	8.9
70°-80°	587.2	4.0
80°-90°	126.1	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	5298.4	35.8
0°-40°	8143.8	55.0
0°-60°	12773.3	86.2
0°-90°	14812.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14812.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7545	7545	7545	7545	7545	
5°	7414	7406	7406	7397	7397	704
15°	6934	6934	6865	6795	6769	1949
25°	6010	5975	5879	5670	5513	2759
35°	4876	4841	4606	4257	4152	3048
45°	3742	3664	3350	3070	2948	2882
55°	2599	2521	2285	2015	1910	2331
65°	1544	1457	1317	1343	1116	1522
75°	619	576	541	515	567	664
85°	87	96	105	113	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7545.0	7545.0	7545.0	7545.0	7545.0
2.5°	7492.7	7492.7	7492.7	7484.0	7484.0
5°	7414.2	7405.5	7405.5	7396.8	7396.8
7.5°	7353.1	7344.4	7335.7	7327.0	7309.5
10°	7265.9	7265.9	7257.2	7213.6	7204.9
12.5°	7126.4	7117.6	7082.7	7021.7	7004.2
15°	6934.5	6934.5	6864.7	6794.9	6768.7
17.5°	6725.1	6716.4	6629.2	6559.4	6524.5
20°	6498.3	6480.9	6393.7	6280.3	6219.2
22.5°	6245.4	6245.4	6140.7	5992.4	5931.4
25°	6009.9	5975.0	5879.0	5669.7	5512.7
27.5°	5739.5	5687.1	5582.5	5285.9	5102.7
30°	5442.9	5416.7	5268.4	4884.6	4745.1
32.5°	5163.8	5120.2	4963.2	4561.9	4448.5
35°	4875.9	4841.0	4605.5	4256.6	4151.9
37.5°	4588.1	4544.5	4247.9	3968.8	3837.9
40°	4300.2	4247.9	3925.2	3672.2	3532.6
42.5°	4029.8	3960.1	3646.0	3375.6	3218.6
45°	3742.0	3663.5	3349.5	3070.3	2948.2
47.5°	3454.1	3384.4	3096.5	2808.7	2669.1
50°	3148.9	3087.8	2826.1	2538.3	2390.0
52.5°	2895.9	2799.9	2547.0	2259.1	2137.0
55°	2599.3	2520.8	2285.3	2014.9	1910.2
57.5°	2328.9	2250.4	2032.4	1779.4	1692.2
60°	2076.0	1962.6	1779.4	1561.3	1491.6
62.5°	1796.9	1709.6	1552.6	1369.4	1456.7
65°	1543.9	1456.7	1317.1	1343.3	1116.5
67.5°	1264.8	1221.2	1099.0	976.9	942.0
70°	1029.3	976.9	933.3	802.5	767.6
72.5°	819.9	767.6	706.5	636.7	610.6
75°	619.3	575.7	540.8	514.6	567.0
77.5°	427.4	410.0	383.8	357.6	348.9
80°	279.1	270.4	261.7	253.0	244.2
82.5°	165.7	165.7	165.7	165.7	165.7
85°	87.2	95.9	104.7	113.4	122.1
87.5°	52.3	52.3	61.1	69.8	78.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)