

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: P564120

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564120  
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-82-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

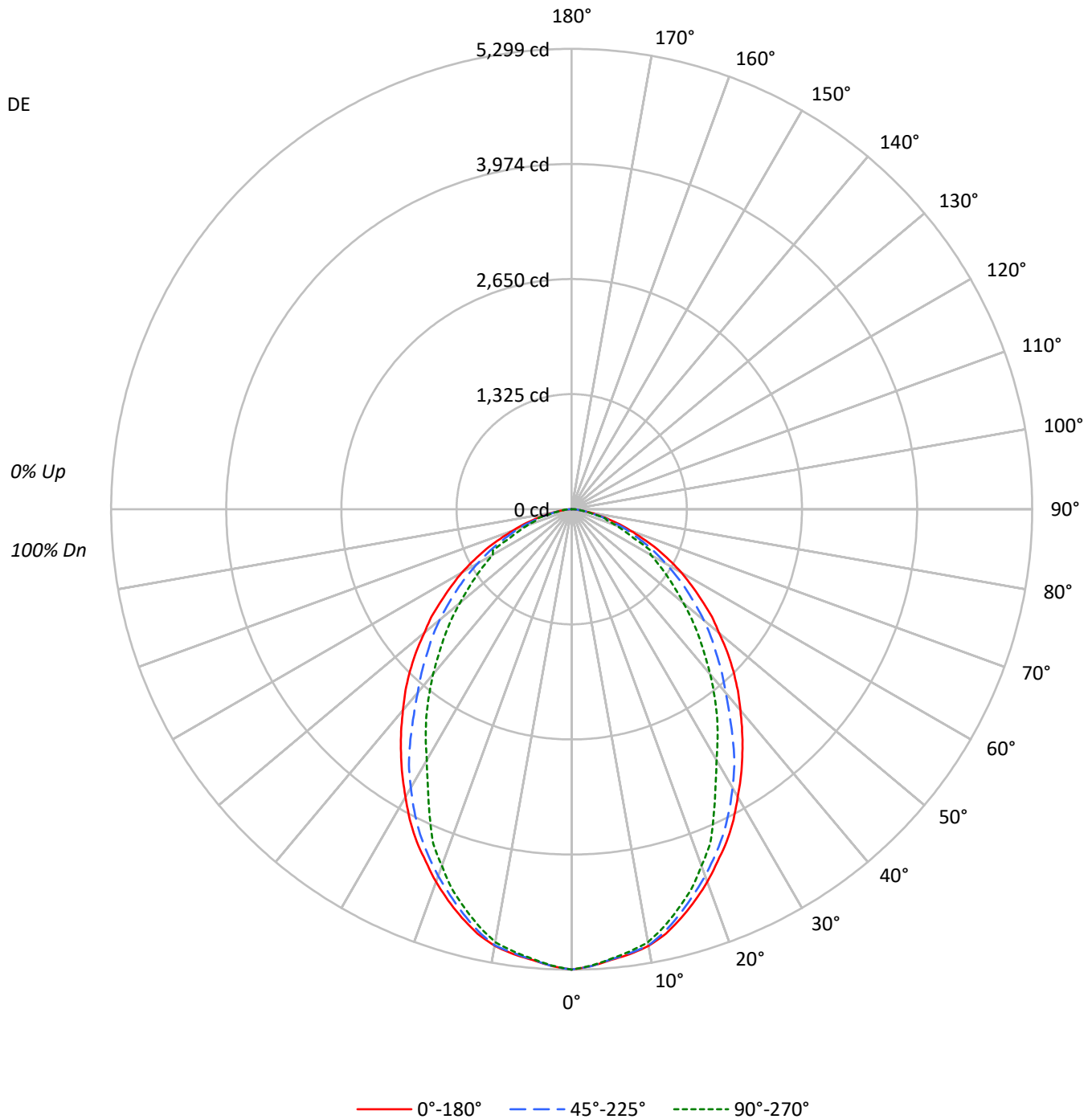
Lumens per Lamp: N/A  
Luminaire Lumens: 10402.0 lumens  
Efficiency: N/A  
Efficacy: 78.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	45°	90°
0°	7129	7129	7129
5°	7032	7024	7016
10°	6971	6963	6913
15°	6783	6715	6621
20°	6534	6429	6254
25°	6266	6129	5747
30°	5939	5748	5177
35°	5624	5312	4789
40°	5304	4842	4357
45°	5000	4476	3940
50°	4629	4154	3513
55°	4282	3765	3147
60°	3923	3363	2819
65°	3452	2945	2496
70°	2843	2578	2121
75°	2261	1974	2070
80°	1519	1424	1329
85°	946	1135	1325

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5000 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	493.2	4.7
10°-20°	1353.6	13.0
20°-30°	1874.0	18.0
30°-40°	1998.2	19.2
40°-50°	1823.0	17.5
50°-60°	1428.2	13.7
60°-70°	930.8	8.9
70°-80°	412.4	4.0
80°-90°	88.5	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°	3720.9	35.8
0°-40°	5719.1	55.0
0°-60°	8970.3	86.2
0°-90°	10402.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10402.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5299	5299	5299	5299	5299	
5°	5207	5201	5201	5194	5194	494
15°	4870	4870	4821	4772	4754	1369
25°	4220	4196	4129	3982	3871	1938
35°	3424	3400	3234	2989	2916	2141
45°	2628	2573	2352	2156	2070	2024
55°	1825	1770	1605	1415	1342	1637
65°	1084	1023	925	943	784	1069
75°	435	404	380	361	398	466
85°	61	67	74	80	86	85
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5298.6	5298.6	5298.6	5298.6	5298.6
2.5°	5261.9	5261.9	5261.9	5255.8	5255.8
5°	5206.8	5200.6	5200.6	5194.5	5194.5
7.5°	5163.9	5157.8	5151.6	5145.5	5133.2
10°	5102.6	5102.6	5096.5	5065.9	5059.7
12.5°	5004.6	4998.5	4974.0	4931.1	4918.9
15°	4869.8	4869.8	4820.8	4771.8	4753.5
17.5°	4722.8	4716.7	4655.5	4606.4	4581.9
20°	4563.6	4551.3	4490.1	4410.4	4367.5
22.5°	4385.9	4385.9	4312.4	4208.3	4165.4
25°	4220.5	4196.0	4128.7	3981.6	3871.4
27.5°	4030.6	3993.9	3920.4	3712.1	3583.5
30°	3822.4	3804.0	3699.9	3430.3	3332.3
32.5°	3626.4	3595.7	3485.5	3203.7	3124.1
35°	3424.2	3399.7	3234.3	2989.3	2915.8
37.5°	3222.1	3191.4	2983.2	2787.1	2695.3
40°	3019.9	2983.2	2756.5	2578.9	2480.9
42.5°	2830.0	2781.0	2560.5	2370.6	2260.3
45°	2627.9	2572.7	2352.2	2156.2	2070.5
47.5°	2425.7	2376.7	2174.6	1972.4	1874.4
50°	2211.3	2168.5	1984.7	1782.5	1678.4
52.5°	2033.7	1966.3	1788.7	1586.5	1500.8
55°	1825.4	1770.3	1604.9	1415.0	1341.5
57.5°	1635.5	1580.4	1427.3	1249.6	1188.4
60°	1457.9	1378.3	1249.6	1096.5	1047.5
62.5°	1261.9	1200.6	1090.4	961.7	1023.0
65°	1084.2	1023.0	925.0	943.3	784.1
67.5°	888.2	857.6	771.8	686.1	661.6
70°	722.8	686.1	655.4	563.6	539.1
72.5°	575.8	539.1	496.2	447.2	428.8
75°	434.9	404.3	379.8	361.4	398.2
77.5°	300.2	287.9	269.5	251.1	245.0
80°	196.0	189.9	183.8	177.6	171.5
82.5°	116.4	116.4	116.4	116.4	116.4
85°	61.3	67.4	73.5	79.6	85.8
87.5°	36.8	36.8	42.9	49.0	55.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)