

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: P561345

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561345  
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-12-4-LD4-2HI-35-UNV-81-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

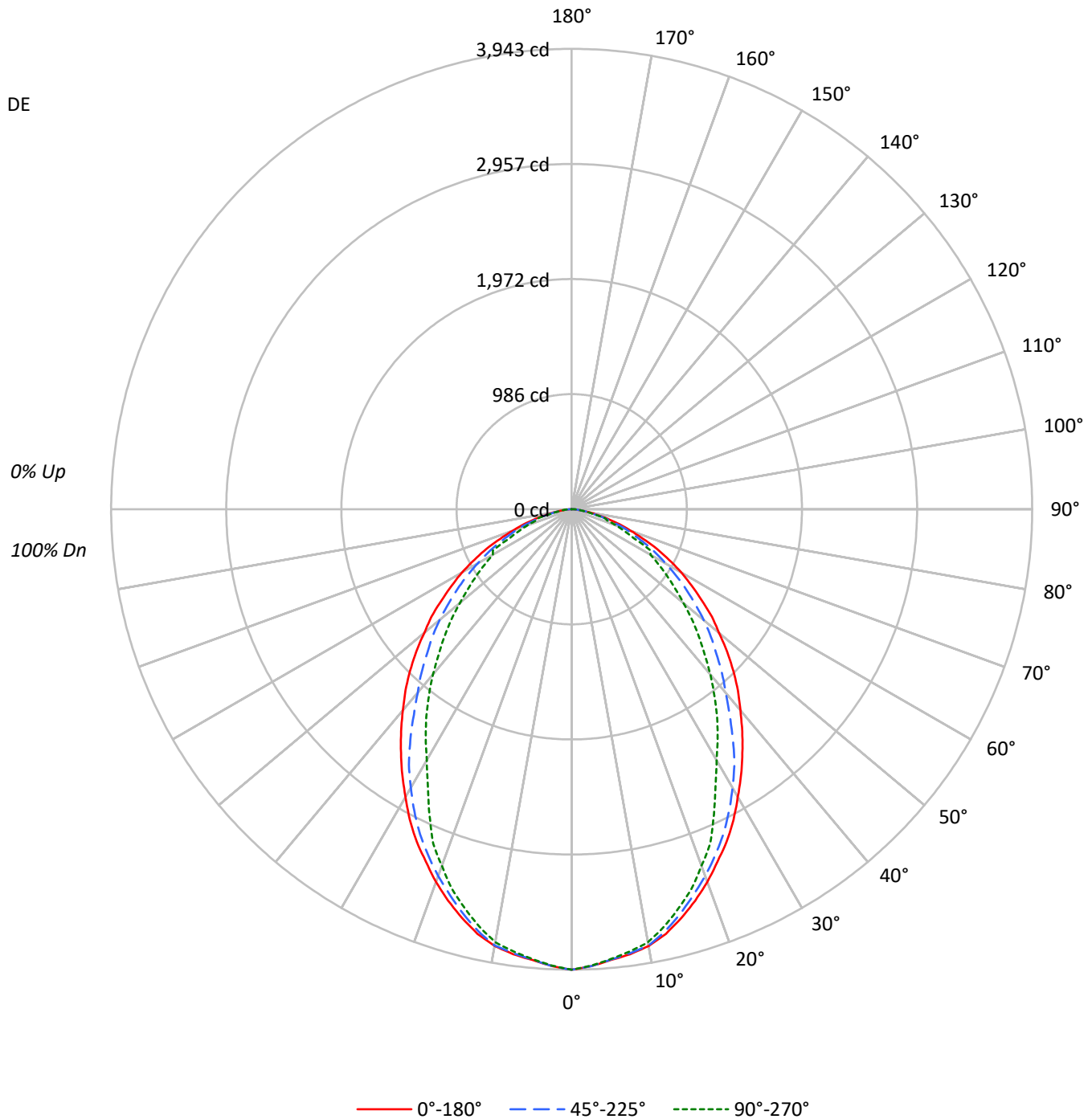
Lumens per Lamp: N/A  
Luminaire Lumens: 7741.0 lumens  
Efficiency: N/A  
Efficacy: 89.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10611	10611	10611
5°	10467	10454	10442
10°	10376	10364	10289
15°	10096	9995	9855
20°	9725	9569	9308
25°	9326	9123	8554
30°	8839	8556	7706
35°	8371	7907	7128
40°	7895	7206	6485
45°	7442	6662	5864
50°	6889	6183	5229
55°	6374	5603	4684
60°	5839	5005	4195
65°	5138	4383	3715
70°	4232	3838	3157
75°	3366	2938	3081
80°	2261	2120	1977
85°	1408	1689	1970

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7442 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	367.1	4.7
10°-20°	1007.4	13.0
20°-30°	1394.6	18.0
30°-40°	1487.1	19.2
40°-50°	1356.6	17.5
50°-60°	1062.8	13.7
60°-70°	692.7	8.9
70°-80°	306.9	4.0
80°-90°	65.9	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°	2769.0	35.8
0°-40°	4256.1	55.0
0°-60°	6675.5	86.2
0°-90°	7741.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7741.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3943	3943	3943	3943	3943	
5°	3875	3870	3870	3866	3866	368
15°	3624	3624	3588	3551	3537	1019
25°	3141	3123	3072	2963	2881	1442
35°	2548	2530	2407	2225	2170	1593
45°	1956	1915	1750	1605	1541	1506
55°	1358	1317	1194	1053	998	1218
65°	807	761	688	702	584	795
75°	324	301	283	269	296	347
85°	46	50	55	59	64	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3943.2	3943.2	3943.2	3943.2	3943.2
2.5°	3915.8	3915.8	3915.8	3911.3	3911.3
5°	3874.8	3870.2	3870.2	3865.7	3865.7
7.5°	3842.9	3838.3	3833.8	3829.2	3820.1
10°	3797.3	3797.3	3792.7	3769.9	3765.4
12.5°	3724.4	3719.8	3701.6	3669.6	3660.5
15°	3624.1	3624.1	3587.6	3551.1	3537.4
17.5°	3514.7	3510.1	3464.5	3428.0	3409.8
20°	3396.1	3387.0	3341.4	3282.2	3250.3
22.5°	3263.9	3263.9	3209.2	3131.7	3099.8
25°	3140.9	3122.6	3072.5	2963.1	2881.0
27.5°	2999.5	2972.2	2917.5	2762.5	2666.8
30°	2844.5	2830.9	2753.4	2552.8	2479.9
32.5°	2698.7	2675.9	2593.8	2384.1	2324.9
35°	2548.2	2530.0	2406.9	2224.6	2169.9
37.5°	2397.8	2375.0	2220.0	2074.1	2005.8
40°	2247.4	2220.0	2051.4	1919.2	1846.2
42.5°	2106.1	2069.6	1905.5	1764.2	1682.1
45°	1955.6	1914.6	1750.5	1604.6	1540.8
47.5°	1805.2	1768.7	1618.3	1467.9	1394.9
50°	1645.6	1613.7	1477.0	1326.5	1249.0
52.5°	1513.4	1463.3	1331.1	1180.7	1116.8
55°	1358.5	1317.4	1194.3	1053.0	998.3
57.5°	1217.1	1176.1	1062.1	929.9	884.4
60°	1084.9	1025.7	929.9	816.0	779.5
62.5°	939.1	893.5	811.4	715.7	761.3
65°	806.9	761.3	688.3	702.0	583.5
67.5°	661.0	638.2	574.4	510.6	492.3
70°	537.9	510.6	487.8	419.4	401.2
72.5°	428.5	401.2	369.2	332.8	319.1
75°	323.7	300.9	282.6	269.0	296.3
77.5°	223.4	214.3	200.6	186.9	182.3
80°	145.9	141.3	136.8	132.2	127.6
82.5°	86.6	86.6	86.6	86.6	86.6
85°	45.6	50.1	54.7	59.3	63.8
87.5°	27.4	27.4	31.9	36.5	41.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)