

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: P562840

Luminaire Tested: FSR-24-4-LD4-2LO-50-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562840  
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-LD4-2LO-50-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 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

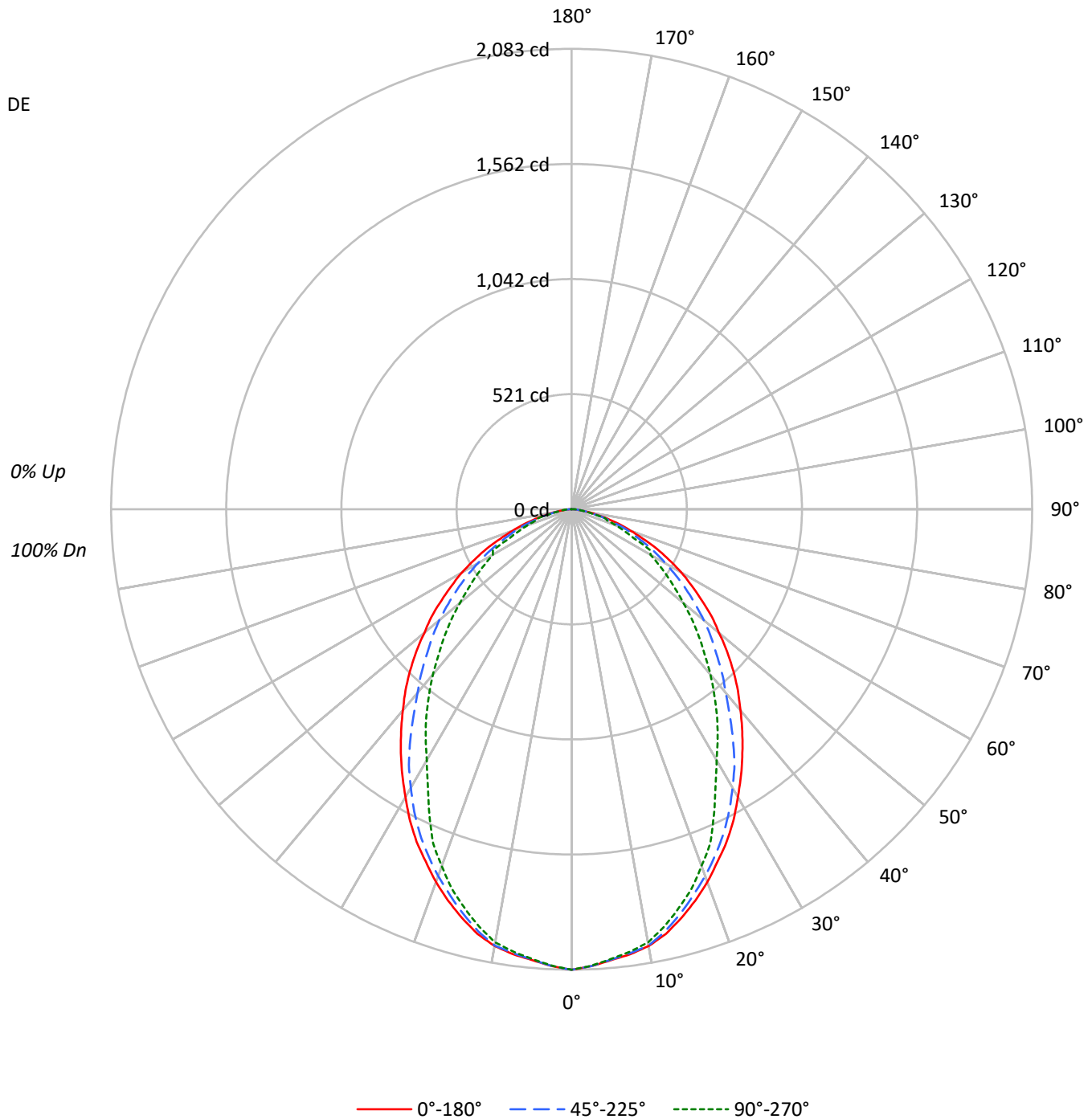
Lumens per Lamp: N/A  
Luminaire Lumens: 4090.0 lumens  
Efficiency: N/A  
Efficacy: 87.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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			
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°	2803	2803	2803
5°	2765	2762	2759
10°	2741	2738	2718
15°	2667	2640	2603
20°	2569	2528	2459
25°	2464	2410	2260
30°	2335	2260	2036
35°	2212	2089	1883
40°	2086	1904	1713
45°	1966	1760	1549
50°	1820	1634	1381
55°	1684	1480	1237
60°	1542	1322	1108
65°	1357	1158	982
70°	1118	1014	834
75°	889	776	814
80°	597	560	522
85°	372	446	520

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1966 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	193.9	4.7
10°-20°	532.2	13.0
20°-30°	736.9	18.0
30°-40°	785.7	19.2
40°-50°	716.8	17.5
50°-60°	561.5	13.7
60°-70°	366.0	8.9
70°-80°	162.2	4.0
80°-90°	34.8	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°	1463.0	35.8
0°-40°	2248.7	55.0
0°-60°	3527.1	86.2
0°-90°	4090.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4090.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2083	2083	2083	2083	2083	
5°	2047	2045	2045	2042	2042	194
15°	1915	1915	1896	1876	1869	538
25°	1660	1650	1623	1566	1522	762
35°	1346	1337	1272	1175	1146	842
45°	1033	1012	925	848	814	796
55°	718	696	631	556	528	644
65°	426	402	364	371	308	420
75°	171	159	149	142	157	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2083.4	2083.4	2083.4	2083.4	2083.4
2.5°	2068.9	2068.9	2068.9	2066.5	2066.5
5°	2047.3	2044.9	2044.9	2042.4	2042.4
7.5°	2030.4	2028.0	2025.6	2023.2	2018.4
10°	2006.3	2006.3	2003.9	1991.9	1989.5
12.5°	1967.8	1965.4	1955.7	1938.9	1934.1
15°	1914.8	1914.8	1895.5	1876.3	1869.0
17.5°	1857.0	1854.6	1830.5	1811.2	1801.6
20°	1794.4	1789.5	1765.5	1734.2	1717.3
22.5°	1724.5	1724.5	1695.6	1654.7	1637.8
25°	1659.5	1649.9	1623.4	1565.6	1522.2
27.5°	1584.8	1570.4	1541.5	1459.6	1409.0
30°	1502.9	1495.7	1454.8	1348.8	1310.2
32.5°	1425.9	1413.8	1370.5	1259.7	1228.4
35°	1346.4	1336.7	1271.7	1175.4	1146.5
37.5°	1266.9	1254.9	1173.0	1095.9	1059.8
40°	1187.4	1173.0	1083.8	1014.0	975.5
42.5°	1112.7	1093.5	1006.8	932.1	888.8
45°	1033.3	1011.6	924.9	847.8	814.1
47.5°	953.8	934.5	855.0	775.6	737.0
50°	869.5	852.6	780.4	700.9	659.9
52.5°	799.6	773.1	703.3	623.8	590.1
55°	717.7	696.1	631.0	556.4	527.5
57.5°	643.1	621.4	561.2	491.3	467.3
60°	573.2	541.9	491.3	431.1	411.9
62.5°	496.2	472.1	428.7	378.1	402.2
65°	426.3	402.2	363.7	370.9	308.3
67.5°	349.2	337.2	303.5	269.8	260.1
70°	284.2	269.8	257.7	221.6	212.0
72.5°	226.4	212.0	195.1	175.8	168.6
75°	171.0	159.0	149.3	142.1	156.6
77.5°	118.0	113.2	106.0	98.8	96.3
80°	77.1	74.7	72.3	69.8	67.4
82.5°	45.8	45.8	45.8	45.8	45.8
85°	24.1	26.5	28.9	31.3	33.7
87.5°	14.5	14.5	16.9	19.3	21.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)