

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: P560857

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560857  
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-LD4-1HI-40-UNV-82-88-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

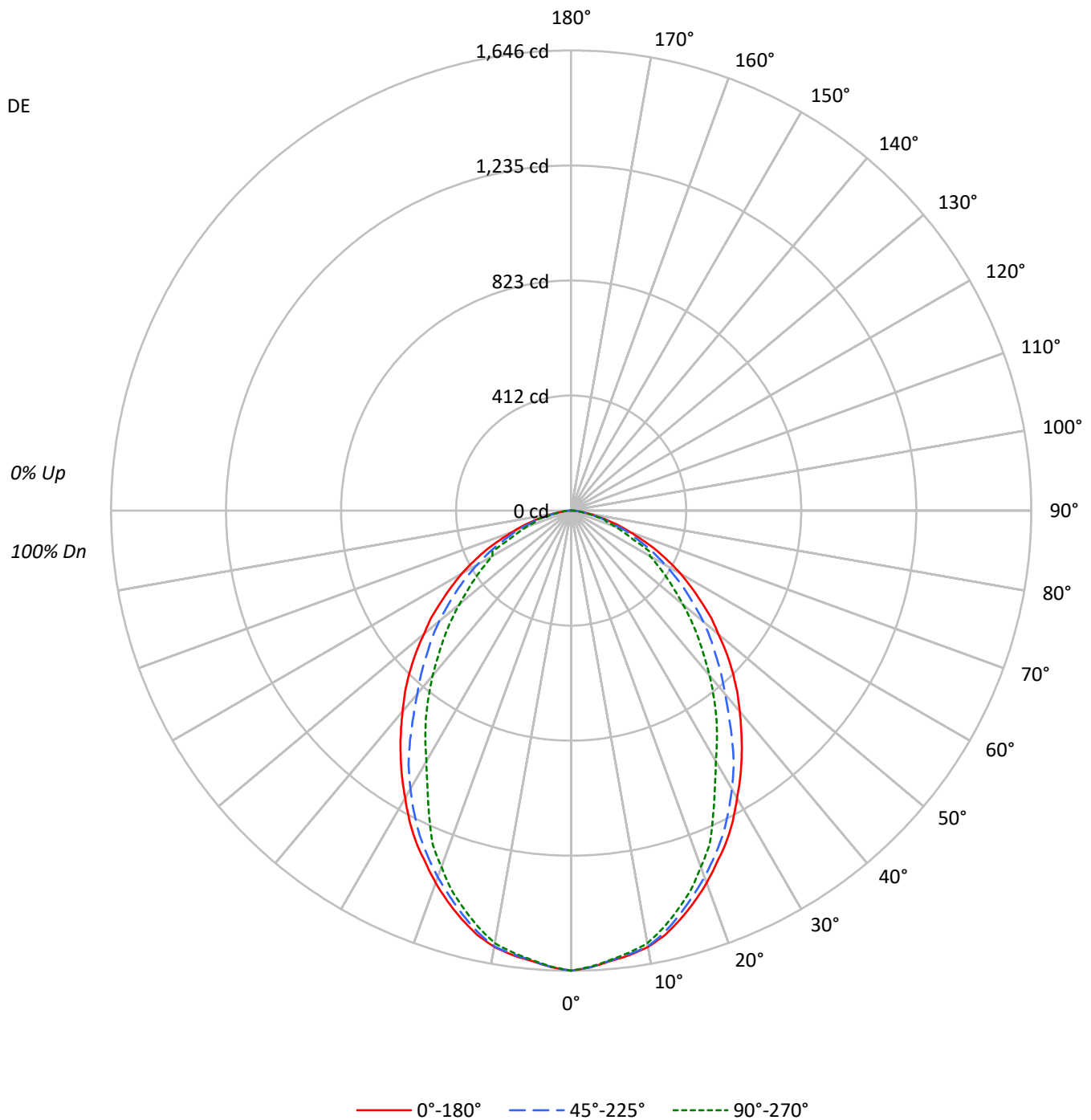
Lumens per Lamp: N/A  
Luminaire Lumens: 3231.0 lumens  
Efficiency: N/A  
Efficacy: 74.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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			
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°	4429	4429	4429
5°	4369	4364	4358
10°	4331	4326	4294
15°	4214	4172	4113
20°	4059	3994	3885
25°	3893	3808	3570
30°	3689	3571	3216
35°	3494	3300	2975
40°	3295	3008	2707
45°	3107	2780	2447
50°	2876	2581	2182
55°	2660	2339	1955
60°	2437	2089	1751
65°	2145	1829	1550
70°	1766	1602	1317
75°	1405	1227	1286
80°	944	885	826
85°	587	704	821

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3107 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.2	4.7
10°-20°	420.5	13.0
20°-30°	582.1	18.0
30°-40°	620.7	19.2
40°-50°	566.2	17.5
50°-60°	443.6	13.7
60°-70°	289.1	8.9
70°-80°	128.1	4.0
80°-90°	27.5	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°	1155.7	35.8
0°-40°	1776.4	55.0
0°-60°	2786.3	86.2
0°-90°	3231.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3231.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1646	1646	1646	1646	1646	
5°	1617	1615	1615	1614	1614	154
15°	1513	1513	1497	1482	1476	425
25°	1311	1303	1282	1237	1202	602
35°	1064	1056	1005	928	906	665
45°	816	799	731	670	643	629
55°	567	550	498	440	417	509
65°	337	318	287	293	244	332
75°	135	126	118	112	124	145
85°	19	21	23	25	27	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1645.8	1645.8	1645.8	1645.8	1645.8
2.5°	1634.4	1634.4	1634.4	1632.5	1632.5
5°	1617.3	1615.4	1615.4	1613.5	1613.5
7.5°	1604.0	1602.1	1600.2	1598.3	1594.5
10°	1584.9	1584.9	1583.0	1573.5	1571.6
12.5°	1554.5	1552.6	1545.0	1531.7	1527.9
15°	1512.6	1512.6	1497.4	1482.2	1476.5
17.5°	1467.0	1465.1	1446.0	1430.8	1423.2
20°	1417.5	1413.7	1394.7	1369.9	1356.6
22.5°	1362.3	1362.3	1339.5	1307.1	1293.8
25°	1311.0	1303.3	1282.4	1236.7	1202.5
27.5°	1252.0	1240.6	1217.7	1153.0	1113.1
30°	1187.3	1181.6	1149.2	1065.5	1035.1
32.5°	1126.4	1116.9	1082.6	995.1	970.4
35°	1063.6	1056.0	1004.6	928.5	905.7
37.5°	1000.8	991.3	926.6	865.7	837.2
40°	938.0	926.6	856.2	801.0	770.6
42.5°	879.0	863.8	795.3	736.3	702.1
45°	816.3	799.1	730.6	669.7	643.1
47.5°	753.5	738.2	675.5	612.7	582.2
50°	686.9	673.6	616.5	553.7	521.3
52.5°	631.7	610.8	555.6	492.8	466.2
55°	567.0	549.9	498.5	439.5	416.7
57.5°	508.0	490.9	443.3	388.1	369.1
60°	452.8	428.1	388.1	340.6	325.4
62.5°	392.0	372.9	338.7	298.7	317.7
65°	336.8	317.7	287.3	293.0	243.5
67.5°	275.9	266.4	239.7	213.1	205.5
70°	224.5	213.1	203.6	175.0	167.4
72.5°	178.9	167.4	154.1	138.9	133.2
75°	135.1	125.6	118.0	112.3	123.7
77.5°	93.2	89.4	83.7	78.0	76.1
80°	60.9	59.0	57.1	55.2	53.3
82.5°	36.2	36.2	36.2	36.2	36.2
85°	19.0	20.9	22.8	24.7	26.6
87.5°	11.4	11.4	13.3	15.2	17.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)