

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: P560855

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560855  
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-82-87-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

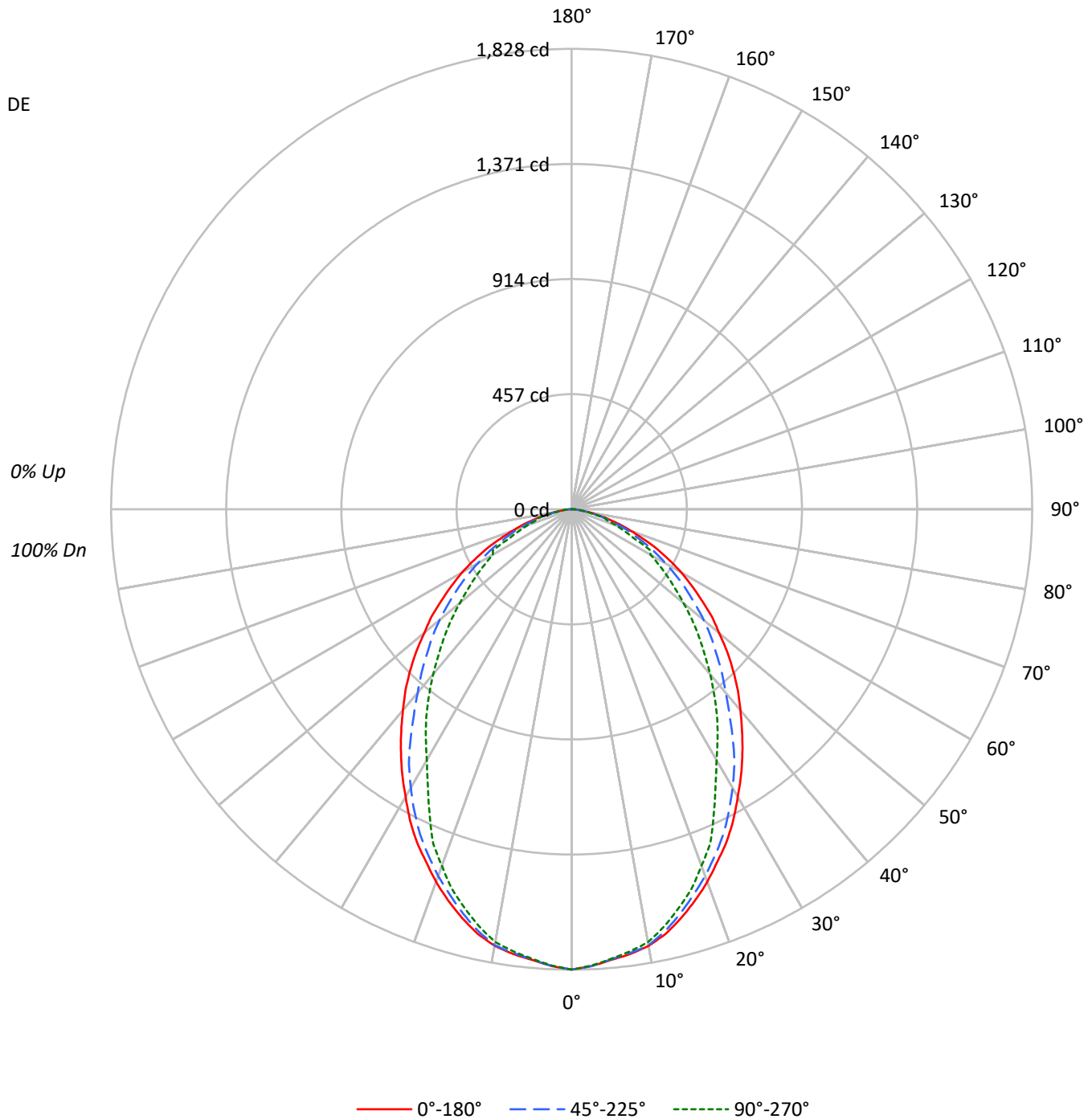
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3588.0 lumens  
Efficiency: N/A  
Efficacy: 83.1 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					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	4918	4918	4918
5°	4851	4846	4840
10°	4809	4804	4769
15°	4680	4633	4568
20°	4508	4435	4314
25°	4323	4228	3965
30°	4097	3966	3572
35°	3880	3665	3304
40°	3659	3340	3006
45°	3449	3088	2718
50°	3193	2866	2424
55°	2954	2597	2171
60°	2707	2320	1945
65°	2381	2032	1722
70°	1961	1779	1463
75°	1560	1362	1428
80°	1048	982	917
85°	651	784	914

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3449 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.1	4.7
10°-20°	466.9	13.0
20°-30°	646.4	18.0
30°-40°	689.3	19.2
40°-50°	628.8	17.5
50°-60°	492.6	13.7
60°-70°	321.1	8.9
70°-80°	142.2	4.0
80°-90°	30.5	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°	1283.5	35.8
0°-40°	1972.7	55.0
0°-60°	3094.2	86.2
0°-90°	3588.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3588.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1828	1828	1828	1828	1828	
5°	1796	1794	1794	1792	1792	170
15°	1680	1680	1663	1646	1640	472
25°	1456	1447	1424	1373	1335	668
35°	1181	1173	1116	1031	1006	738
45°	906	887	811	744	714	698
55°	630	611	554	488	463	565
65°	374	353	319	325	270	369
75°	150	140	131	125	137	161
85°	21	23	25	28	30	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1827.7	1827.7	1827.7	1827.7	1827.7
2.5°	1815.0	1815.0	1815.0	1812.9	1812.9
5°	1796.0	1793.9	1793.9	1791.8	1791.8
7.5°	1781.2	1779.1	1777.0	1774.9	1770.6
10°	1760.1	1760.1	1758.0	1747.4	1745.3
12.5°	1726.3	1724.1	1715.7	1700.9	1696.7
15°	1679.8	1679.8	1662.9	1646.0	1639.6
17.5°	1629.1	1627.0	1605.8	1588.9	1580.5
20°	1574.1	1569.9	1548.8	1521.3	1506.5
22.5°	1512.9	1512.9	1487.5	1451.6	1436.8
25°	1455.8	1447.4	1424.1	1373.4	1335.4
27.5°	1390.3	1377.6	1352.3	1280.4	1236.1
30°	1318.5	1312.1	1276.2	1183.2	1149.4
32.5°	1250.9	1240.3	1202.3	1105.1	1077.6
35°	1181.1	1172.7	1115.6	1031.1	1005.8
37.5°	1111.4	1100.8	1029.0	961.4	929.7
40°	1041.7	1029.0	950.8	889.5	855.7
42.5°	976.2	959.3	883.2	817.7	779.7
45°	906.4	887.4	811.4	743.7	714.2
47.5°	836.7	819.8	750.1	680.4	646.6
50°	762.8	748.0	684.6	614.9	578.9
52.5°	701.5	678.2	617.0	547.2	517.7
55°	629.7	610.6	553.6	488.1	462.7
57.5°	564.2	545.1	492.3	431.0	409.9
60°	502.9	475.4	431.0	378.2	361.3
62.5°	435.3	414.1	376.1	331.7	352.9
65°	374.0	352.9	319.1	325.4	270.5
67.5°	306.4	295.8	266.2	236.6	228.2
70°	249.3	236.6	226.1	194.4	185.9
72.5°	198.6	185.9	171.1	154.2	147.9
75°	150.0	139.5	131.0	124.7	137.3
77.5°	103.5	99.3	93.0	86.6	84.5
80°	67.6	65.5	63.4	61.3	59.2
82.5°	40.1	40.1	40.1	40.1	40.1
85°	21.1	23.2	25.4	27.5	29.6
87.5°	12.7	12.7	14.8	16.9	19.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)