

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: P562066

Luminaire Tested: FSR-24-4-LD4-1HI-40-UNV-82-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562066  
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-LD4-1HI-40-UNV-82-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

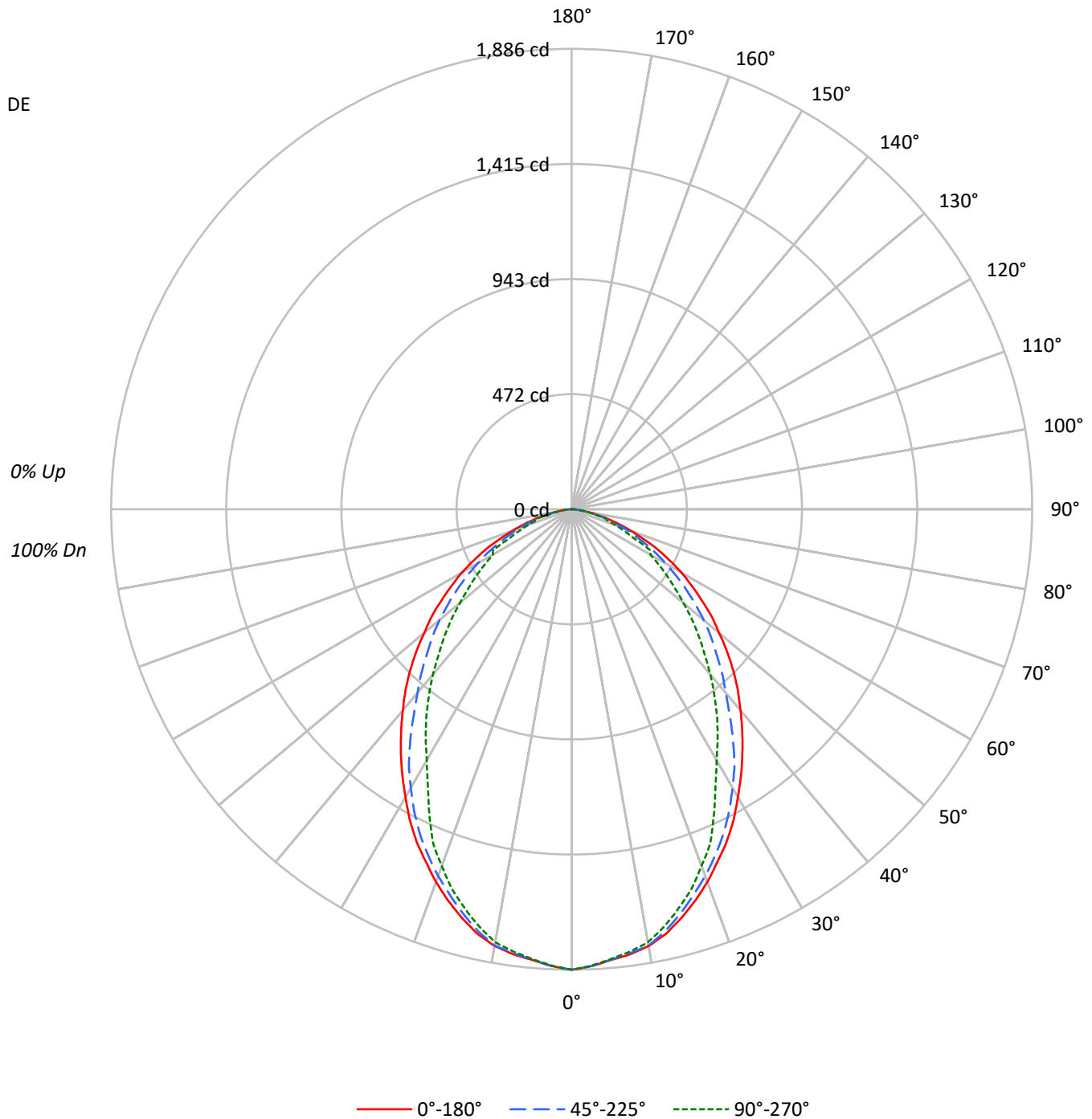
Lumens per Lamp: N/A  
Luminaire Lumens: 3703.0 lumens  
Efficiency: N/A  
Efficacy: 85.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P562066

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-85-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P562066

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-85-EDD-90

**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	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°	2538	2538	2538
5°	2503	2501	2498
10°	2482	2479	2461
15°	2415	2391	2357
20°	2326	2289	2226
25°	2231	2182	2046
30°	2114	2046	1843
35°	2002	1891	1705
40°	1888	1724	1551
45°	1780	1593	1403
50°	1648	1479	1251
55°	1524	1340	1120
60°	1397	1197	1003
65°	1229	1048	889
70°	1012	918	755
75°	805	703	737
80°	541	507	473
85°	337	404	471

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1780 cd/sqm



TEST NUMBER: P562066

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-85-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	175.6	4.7
10°-20°	481.9	13.0
20°-30°	667.1	18.0
30°-40°	711.4	19.2
40°-50°	649.0	17.5
50°-60°	508.4	13.7
60°-70°	331.4	8.9
70°-80°	146.8	4.0
80°-90°	31.5	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°	1324.6	35.8
0°-40°	2036.0	55.0
0°-60°	3193.3	86.2
0°-90°	3703.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3703.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1886	1886	1886	1886	1886	
5°	1854	1851	1851	1849	1849	176
15°	1734	1734	1716	1699	1692	487
25°	1502	1494	1470	1417	1378	690
35°	1219	1210	1151	1064	1038	762
45°	936	916	837	768	737	721
55°	650	630	571	504	478	583
65°	386	364	329	336	279	380
75°	155	144	135	129	142	166
85°	22	24	26	28	30	30
90°	0	0	0	0	0	



TEST NUMBER: P562066

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-85-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	<i>1886.3</i>	<i>1886.3</i>	<i>1886.3</i>	<i>1886.3</i>	<i>1886.3</i>
2.5°	<i>1873.2</i>	1873.2	1873.2	1871.0	1871.0
5°	<i>1853.5</i>	1851.4	1851.4	1849.2	1849.2
7.5°	<i>1838.3</i>	1836.1	1833.9	1831.7	1827.4
10°	<i>1816.5</i>	1816.5	1814.3	1803.4	1801.2
12.5°	<i>1781.6</i>	1779.4	1770.7	1755.4	1751.1
15°	<i>1733.6</i>	1733.6	1716.2	1698.7	1692.2
17.5°	<i>1681.3</i>	1679.1	1657.3	1639.8	1631.1
20°	<i>1624.6</i>	1620.2	1598.4	1570.1	1554.8
22.5°	<i>1561.3</i>	1561.3	1535.2	1498.1	1482.8
25°	<i>1502.5</i>	1493.7	1469.8	1417.4	1378.2
27.5°	<i>1434.9</i>	1421.8	1395.6	1321.5	1275.7
30°	<i>1360.7</i>	1354.2	1317.1	1221.2	1186.3
32.5°	<i>1290.9</i>	1280.0	1240.8	1140.5	1112.1
35°	<i>1219.0</i>	1210.3	1151.4	1064.2	1038.0
37.5°	<i>1147.0</i>	1136.1	1062.0	992.2	959.5
40°	<i>1075.1</i>	1062.0	981.3	918.1	883.2
42.5°	<i>1007.5</i>	990.0	911.5	843.9	804.7
45°	<i>935.5</i>	915.9	837.4	767.6	737.1
47.5°	<i>863.5</i>	846.1	774.1	702.2	667.3
50°	<i>787.2</i>	771.9	706.5	634.6	597.5
52.5°	<i>724.0</i>	700.0	636.7	564.8	534.3
55°	<i>649.8</i>	630.2	571.3	503.7	477.6
57.5°	<i>582.2</i>	562.6	508.1	444.9	423.0
60°	<i>519.0</i>	490.6	444.9	390.3	372.9
62.5°	<i>449.2</i>	427.4	388.2	342.4	364.2
65°	<i>386.0</i>	364.2	329.3	335.8	279.1
67.5°	<i>316.2</i>	305.3	274.8	244.2	235.5
70°	<i>257.3</i>	244.2	233.3	200.6	191.9
72.5°	<i>205.0</i>	191.9	176.6	159.2	152.6
75°	<i>154.8</i>	143.9	135.2	128.7	141.7
77.5°	<i>106.9</i>	102.5	95.9	89.4	87.2
80°	<i>69.8</i>	67.6	65.4	63.2	61.1
82.5°	<i>41.4</i>	41.4	41.4	41.4	41.4
85°	<i>21.8</i>	24.0	26.2	28.3	30.5
87.5°	<i>13.1</i>	13.1	15.3	17.4	19.6
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)