

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: P590664

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590664  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD  
Description: 2X2 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**

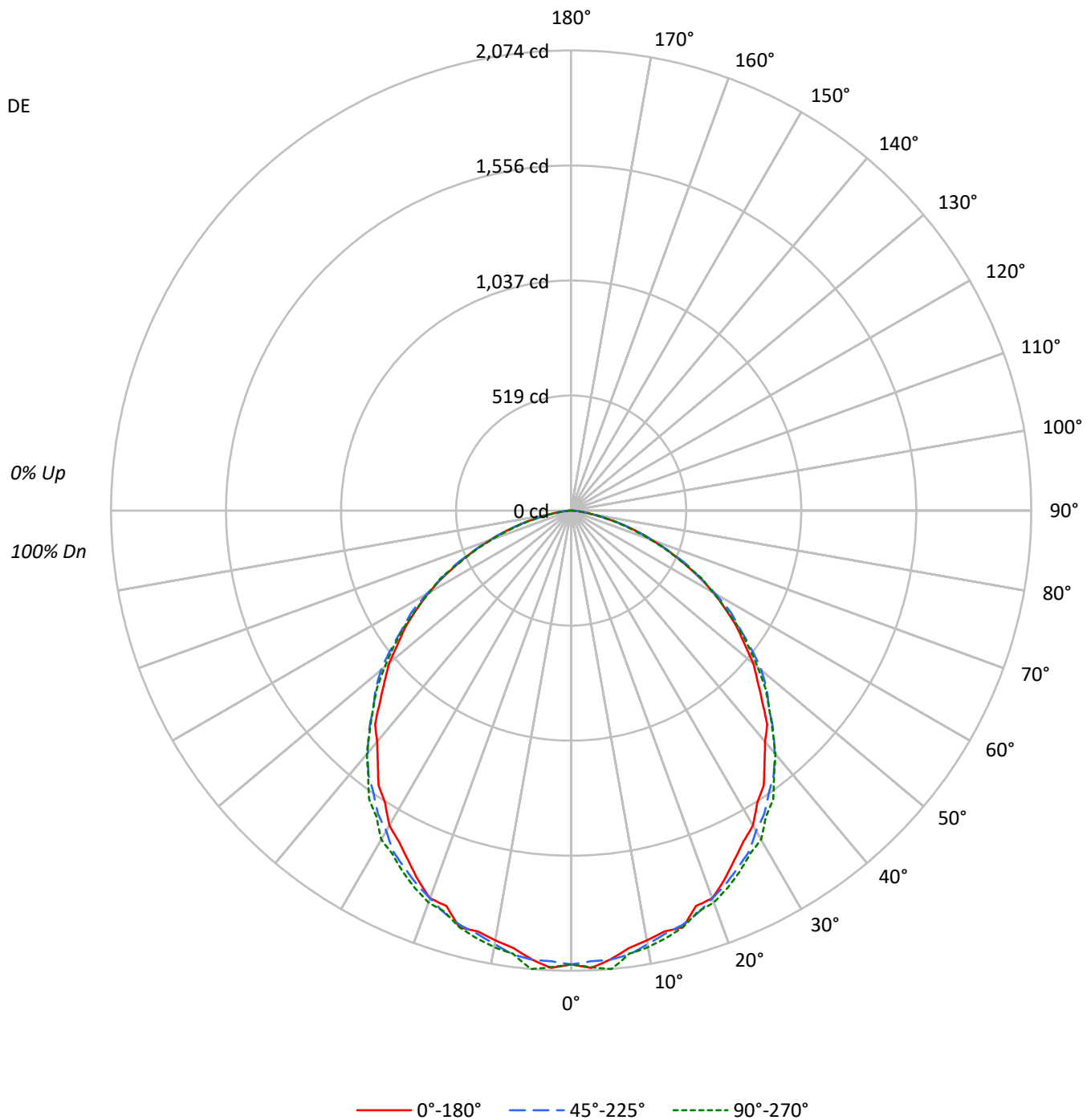
Lumens per Lamp: N/A  
Luminaire Lumens: 5155.0 lumens  
Efficiency: N/A  
Efficacy: 103.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P590664

CATALOG NUMBER: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590664

CATALOG NUMBER: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD

**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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

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

	0°	45°	90°
0°	5504	5504	5504
5°	5486	5488	5603
10°	5375	5422	5460
15°	5417	5388	5418
20°	5326	5326	5382
25°	5162	5275	5333
30°	5091	5180	5318
35°	4971	5101	5216
40°	4778	5008	5030
45°	4633	4798	4805
50°	4481	4683	4594
55°	4270	4352	4321
60°	3992	4032	3960
65°	3560	3650	3535
70°	3054	3065	2980
75°	2419	2413	2321
80°	1621	1576	1514
85°	880	874	815

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 4921 cd/sqm



TEST NUMBER: P590664

CATALOG NUMBER: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.4	3.7
10°-20°	545.3	10.6
20°-30°	816.9	15.8
30°-40°	968.2	18.8
40°-50°	970.0	18.8
50°-60°	823.4	16.0
60°-70°	555.1	10.8
70°-80°	243.9	4.7
80°-90°	39.6	0.8
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°	1554.6	30.2
0°-40°	2522.9	48.9
0°-60°	4316.3	83.7
0°-90°	5155.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5155.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2045	2045	2045	2045	2045	
5°	2031	2026	2032	2026	2074	191
15°	1944	1922	1934	1944	1945	542
25°	1738	1748	1776	1800	1796	804
35°	1513	1518	1553	1589	1588	940
45°	1218	1240	1261	1293	1263	942
55°	910	904	928	921	921	810
65°	559	552	573	551	555	556
75°	233	228	232	216	223	249
85°	28	28	28	28	26	41
90°	0	0	0	0	0	



TEST NUMBER: P590664

CATALOG NUMBER: FSR-24-2-LD4-3STD-40-UNV-82-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2045.4	2045.4	2045.4	2045.4	2045.4
2.5°	2063.1	2047.5	2033.0	2049.9	2060.2
5°	2030.8	2026.1	2031.6	2025.6	2074.4
7.5°	1989.1	2007.3	2017.9	2011.3	2014.2
10°	1966.9	1960.6	1984.1	2000.5	1998.1
12.5°	1943.2	1952.7	1954.0	1971.7	1973.3
15°	1944.5	1922.0	1933.9	1944.0	1944.8
17.5°	1869.0	1893.3	1901.4	1924.4	1895.9
20°	1859.7	1842.0	1859.7	1883.2	1879.5
22.5°	1802.9	1783.1	1821.2	1842.0	1840.7
25°	1738.5	1748.0	1776.5	1799.8	1796.1
27.5°	1682.0	1693.1	1733.7	1765.7	1745.1
30°	1638.4	1632.9	1667.2	1695.7	1711.6
32.5°	1560.5	1580.6	1620.7	1649.0	1633.9
35°	1513.2	1517.7	1552.8	1588.8	1587.7
37.5°	1430.6	1451.4	1500.8	1510.9	1501.6
40°	1360.1	1380.9	1425.6	1436.4	1431.9
42.5°	1308.0	1311.7	1350.0	1362.4	1342.6
45°	1217.5	1240.2	1260.8	1293.2	1262.6
47.5°	1140.3	1150.9	1195.3	1204.0	1187.9
50°	1070.4	1074.1	1118.7	1107.9	1097.3
52.5°	982.4	998.0	1023.1	1021.0	1008.6
55°	910.1	904.0	927.7	921.4	921.1
57.5°	823.2	833.7	853.3	843.2	827.1
60°	741.8	742.1	749.2	737.9	735.8
62.5°	651.2	654.4	656.0	642.0	664.7
65°	559.1	551.7	573.3	551.4	555.1
67.5°	474.3	478.0	475.9	462.2	467.4
70°	388.2	393.0	389.5	374.0	378.7
72.5°	309.5	303.7	307.4	287.9	296.8
75°	232.7	227.9	232.1	215.8	223.2
77.5°	158.5	162.2	159.5	150.8	155.8
80°	104.6	101.7	101.7	96.7	97.7
82.5°	61.0	58.1	57.3	55.7	58.1
85°	28.5	27.7	28.3	27.5	26.4
87.5°	10.3	10.6	10.6	10.0	9.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)