

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: P590365

Luminaire Tested: FSR-24-2-LD4-2STD-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590365  
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-LD4-2STD-40-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

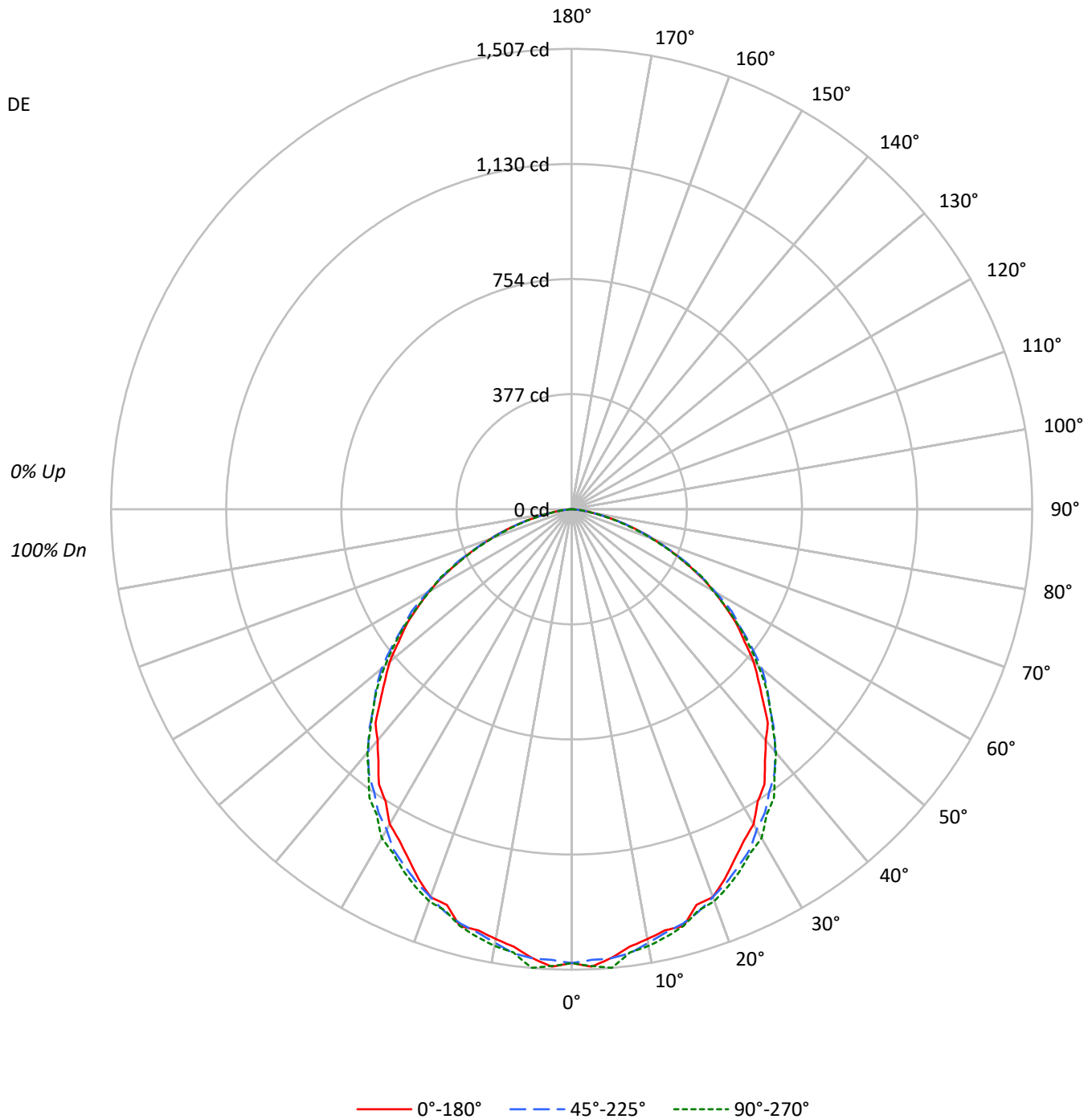
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3744.0 lumens  
Efficiency: N/A  
Efficacy: 112.4 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): 33.3  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	3997	3997	3997
5°	3984	3986	4070
10°	3904	3938	3965
15°	3935	3913	3935
20°	3868	3868	3909
25°	3749	3831	3873
30°	3698	3763	3863
35°	3610	3705	3788
40°	3470	3637	3653
45°	3365	3485	3490
50°	3255	3401	3336
55°	3101	3161	3139
60°	2900	2928	2876
65°	2585	2651	2567
70°	2219	2226	2164
75°	1757	1753	1685
80°	1178	1144	1100
85°	639	633	593

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3575 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.7	3.7
10°-20°	396.0	10.6
20°-30°	593.3	15.8
30°-40°	703.2	18.8
40°-50°	704.5	18.8
50°-60°	598.0	16.0
60°-70°	403.2	10.8
70°-80°	177.2	4.7
80°-90°	28.8	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°	1129.1	30.2
0°-40°	1832.3	48.9
0°-60°	3134.9	83.7
0°-90°	3744.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3744.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1486	1486	1486	1486	1486	
5°	1475	1472	1476	1471	1507	139
15°	1412	1396	1405	1412	1412	393
25°	1263	1270	1290	1307	1304	584
35°	1099	1102	1128	1154	1153	682
45°	884	901	916	939	917	684
55°	661	656	674	669	669	588
65°	406	401	416	400	403	404
75°	169	166	169	157	162	181
85°	21	20	20	20	19	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1485.5	1485.5	1485.5	1485.5	1485.5
2.5°	1498.4	1487.1	1476.5	1488.8	1496.3
5°	1475.0	1471.5	1475.6	1471.1	1506.6
7.5°	1444.7	1457.9	1465.6	1460.8	1462.9
10°	1428.6	1424.0	1441.0	1452.9	1451.2
12.5°	1411.3	1418.2	1419.2	1432.0	1433.2
15°	1412.3	1396.0	1404.6	1411.9	1412.4
17.5°	1357.4	1375.0	1381.0	1397.7	1377.0
20°	1350.7	1337.8	1350.7	1367.8	1365.1
22.5°	1309.4	1295.1	1322.7	1337.8	1336.9
25°	1262.6	1269.6	1290.3	1307.1	1304.5
27.5°	1221.6	1229.7	1259.2	1282.4	1267.4
30°	1190.0	1185.9	1210.9	1231.6	1243.1
32.5°	1133.4	1147.9	1177.1	1197.6	1186.7
35°	1099.0	1102.3	1127.8	1153.9	1153.1
37.5°	1039.0	1054.2	1090.0	1097.3	1090.6
40°	987.8	1002.9	1035.4	1043.2	1040.0
42.5°	950.0	952.7	980.5	989.5	975.1
45°	884.2	900.7	915.7	939.3	917.0
47.5°	828.2	835.9	868.1	874.4	862.7
50°	777.4	780.1	812.5	804.6	796.9
52.5°	713.5	724.8	743.1	741.5	732.5
55°	661.0	656.5	673.8	669.2	669.0
57.5°	597.9	605.5	619.7	612.4	600.7
60°	538.8	539.0	544.1	535.9	534.4
62.5°	473.0	475.3	476.4	466.3	482.8
65°	406.0	400.7	416.4	400.5	403.2
67.5°	344.5	347.2	345.6	335.7	339.5
70°	282.0	285.4	282.9	271.6	275.0
72.5°	224.8	220.6	223.3	209.1	215.6
75°	169.0	165.5	168.6	156.7	162.1
77.5°	115.1	117.8	115.8	109.5	113.2
80°	76.0	73.8	73.8	70.2	71.0
82.5°	44.3	42.2	41.6	40.5	42.2
85°	20.7	20.1	20.5	19.9	19.2
87.5°	7.5	7.7	7.7	7.3	6.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)