

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: P590558

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590558  
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-LD4-3LO-40-UNV-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

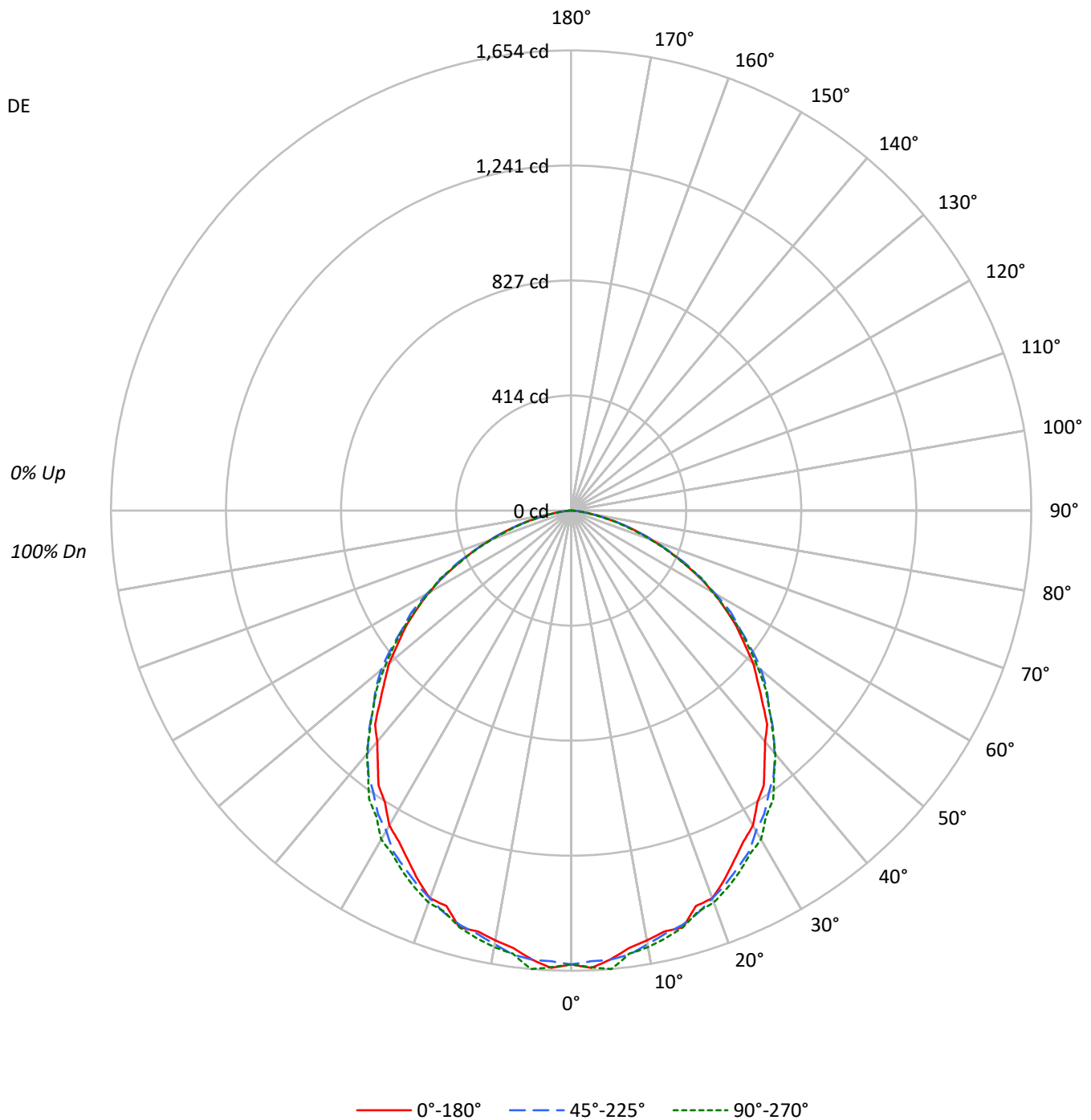
Lumens per Lamp: N/A  
Luminaire Lumens: 4111.0 lumens  
Efficiency: N/A  
Efficacy: 117.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	4389	4389	4389
5°	4375	4377	4469
10°	4286	4324	4354
15°	4320	4297	4321
20°	4247	4247	4292
25°	4116	4206	4253
30°	4060	4131	4241
35°	3964	4068	4160
40°	3810	3993	4011
45°	3695	3826	3832
50°	3574	3735	3664
55°	3405	3471	3446
60°	3184	3216	3158
65°	2839	2911	2819
70°	2436	2444	2376
75°	1929	1925	1851
80°	1292	1257	1207
85°	701	695	651

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3925 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.4	3.7
10°-20°	434.9	10.6
20°-30°	651.5	15.8
30°-40°	772.2	18.8
40°-50°	773.6	18.8
50°-60°	656.7	16.0
60°-70°	442.7	10.8
70°-80°	194.5	4.7
80°-90°	31.6	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°	1239.8	30.2
0°-40°	2011.9	48.9
0°-60°	3442.2	83.7
0°-90°	4111.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4111.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1631	1631	1631	1631	1631	
5°	1620	1616	1620	1615	1654	153
15°	1551	1533	1542	1550	1551	432
25°	1386	1394	1417	1435	1432	641
35°	1207	1210	1238	1267	1266	749
45°	971	989	1005	1031	1007	751
55°	726	721	740	735	735	646
65°	446	440	457	440	443	443
75°	186	182	185	172	178	199
85°	23	22	22	22	21	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1631.1	1631.1	1631.1	1631.1	1631.1
2.5°	1645.3	1632.8	1621.2	1634.7	1642.9
5°	1619.6	1615.8	1620.2	1615.3	1654.3
7.5°	1586.3	1600.8	1609.2	1604.0	1606.3
10°	1568.6	1563.5	1582.3	1595.3	1593.4
12.5°	1549.6	1557.2	1558.3	1572.4	1573.6
15°	1550.7	1532.8	1542.3	1550.3	1550.9
17.5°	1490.5	1509.8	1516.4	1534.7	1511.9
20°	1483.1	1469.0	1483.1	1501.8	1498.9
22.5°	1437.8	1422.0	1452.3	1469.0	1467.9
25°	1386.4	1394.0	1416.7	1435.3	1432.3
27.5°	1341.3	1350.2	1382.6	1408.1	1391.7
30°	1306.6	1302.2	1329.6	1352.3	1364.9
32.5°	1244.5	1260.5	1292.5	1315.0	1303.0
35°	1206.8	1210.4	1238.4	1267.0	1266.2
37.5°	1140.9	1157.5	1196.9	1204.9	1197.5
40°	1084.6	1101.3	1136.8	1145.5	1141.9
42.5°	1043.1	1046.1	1076.6	1086.5	1070.7
45°	970.9	989.0	1005.4	1031.3	1006.9
47.5°	909.4	917.8	953.2	960.2	947.3
50°	853.6	856.5	892.1	883.5	875.1
52.5°	783.5	795.9	815.9	814.2	804.3
55°	725.7	720.9	739.9	734.8	734.6
57.5°	656.5	664.9	680.5	672.5	659.6
60°	591.6	591.8	597.5	588.4	586.7
62.5°	519.4	521.9	523.1	512.0	530.1
65°	445.9	440.0	457.2	439.7	442.7
67.5°	378.2	381.2	379.5	368.6	372.8
70°	309.6	313.4	310.6	298.2	302.0
72.5°	246.8	242.2	245.1	229.6	236.7
75°	185.5	181.8	185.1	172.1	178.0
77.5°	126.4	129.3	127.2	120.3	124.3
80°	83.4	81.1	81.1	77.1	77.9
82.5°	48.6	46.3	45.7	44.4	46.3
85°	22.7	22.1	22.5	21.9	21.1
87.5°	8.2	8.4	8.4	8.0	7.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)