

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: P590560

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-81-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590560  
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-81-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

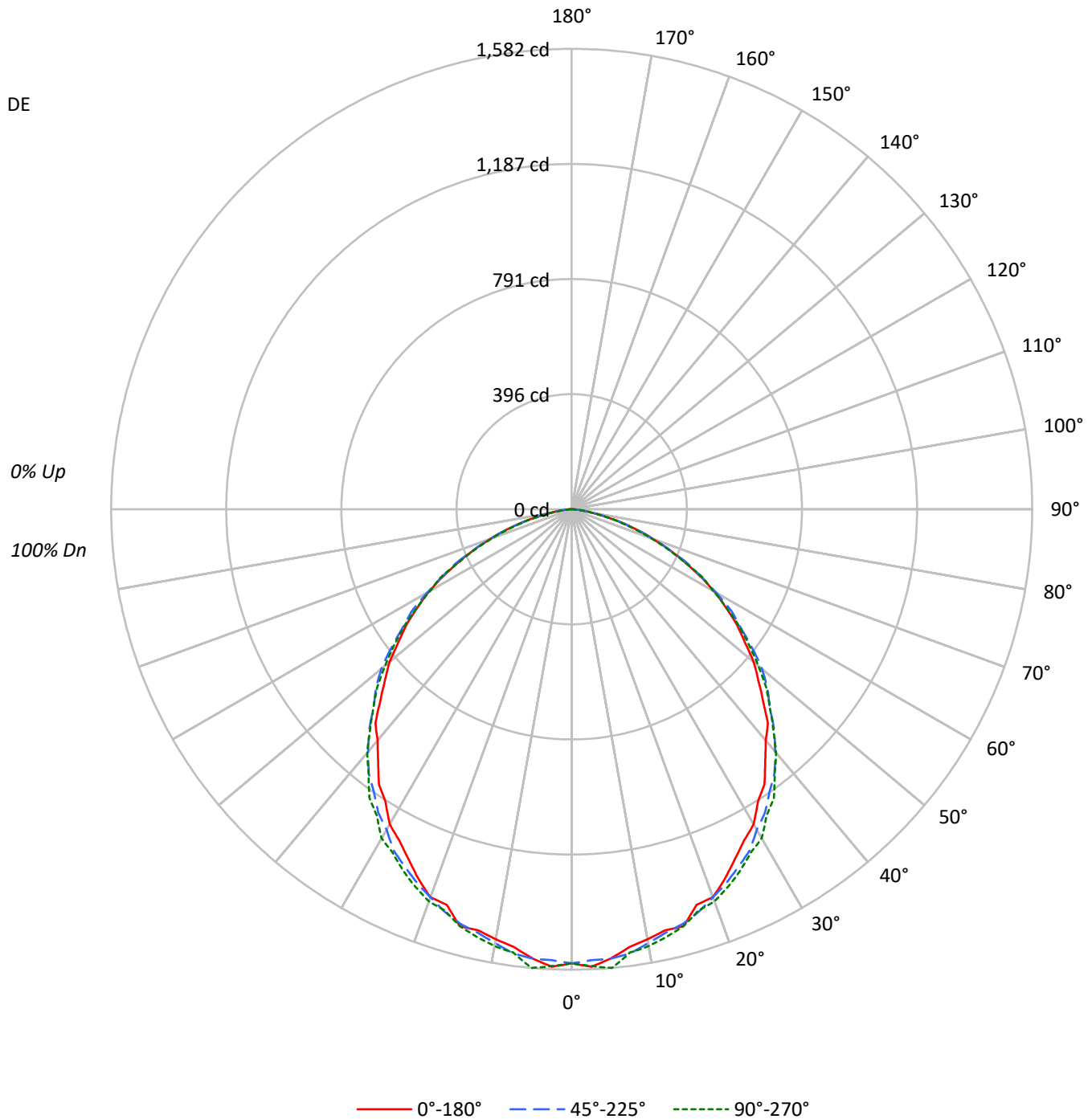
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3932.0 lumens  
Efficiency: N/A  
Efficacy: 112.0 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					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	4198	4198	4198
5°	4184	4186	4274
10°	4100	4135	4165
15°	4132	4109	4133
20°	4062	4062	4105
25°	3937	4024	4068
30°	3883	3952	4057
35°	3792	3891	3978
40°	3644	3819	3837
45°	3534	3660	3665
50°	3418	3572	3504
55°	3256	3320	3296
60°	3045	3076	3020
65°	2715	2784	2696
70°	2330	2338	2273
75°	1845	1841	1770
80°	1237	1203	1155
85°	673	667	621

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3754 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.8	3.7
10°-20°	415.9	10.6
20°-30°	623.1	15.8
30°-40°	738.5	18.8
40°-50°	739.9	18.8
50°-60°	628.0	16.0
60°-70°	423.4	10.8
70°-80°	186.1	4.7
80°-90°	30.2	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°	1185.8	30.2
0°-40°	1924.3	48.9
0°-60°	3292.3	83.7
0°-90°	3932.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3932.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1560	1560	1560	1560	1560	
5°	1549	1545	1550	1545	1582	146
15°	1483	1466	1475	1483	1483	413
25°	1326	1333	1355	1373	1370	613
35°	1154	1158	1184	1212	1211	717
45°	929	946	962	986	963	718
55°	694	690	708	703	703	617
65°	426	421	437	421	423	424
75°	178	174	177	165	170	190
85°	22	21	22	21	20	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1560.1	1560.1	1560.1	1560.1	1560.1
2.5°	1573.6	1561.7	1550.7	1563.5	1571.4
5°	1549.0	1545.4	1549.6	1545.0	1582.3
7.5°	1517.2	1531.1	1539.2	1534.1	1536.3
10°	1500.3	1495.5	1513.4	1525.9	1524.1
12.5°	1482.2	1489.4	1490.4	1503.9	1505.1
15°	1483.2	1466.0	1475.1	1482.8	1483.4
17.5°	1425.6	1444.1	1450.3	1467.9	1446.1
20°	1418.5	1405.0	1418.5	1436.4	1433.6
22.5°	1375.2	1360.1	1389.1	1405.0	1404.0
25°	1326.1	1333.3	1355.1	1372.8	1370.0
27.5°	1282.9	1291.4	1322.4	1346.8	1331.1
30°	1249.7	1245.5	1271.7	1293.4	1305.5
32.5°	1190.3	1205.6	1236.2	1257.8	1246.3
35°	1154.2	1157.7	1184.4	1211.8	1211.0
37.5°	1091.2	1107.1	1144.8	1152.4	1145.4
40°	1037.4	1053.3	1087.3	1095.6	1092.2
42.5°	997.7	1000.5	1029.7	1039.2	1024.1
45°	928.6	945.9	961.7	986.4	963.1
47.5°	869.8	877.9	911.7	918.3	906.1
50°	816.4	819.2	853.3	845.0	837.0
52.5°	749.3	761.2	780.4	778.7	769.3
55°	694.1	689.5	707.6	702.8	702.6
57.5°	627.9	635.9	650.8	643.2	630.9
60°	565.8	566.0	571.5	562.8	561.2
62.5°	496.7	499.2	500.4	489.7	507.0
65°	426.4	420.8	437.3	420.6	423.4
67.5°	361.8	364.6	363.0	352.5	356.5
70°	296.1	299.7	297.1	285.2	288.9
72.5°	236.1	231.7	234.5	219.6	226.4
75°	177.5	173.8	177.1	164.6	170.2
77.5°	120.9	123.7	121.7	115.0	118.8
80°	79.8	77.6	77.6	73.7	74.5
82.5°	46.5	44.3	43.7	42.5	44.3
85°	21.8	21.2	21.6	20.9	20.1
87.5°	7.9	8.1	8.1	7.7	7.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)