

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: P590576

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590576  
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-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

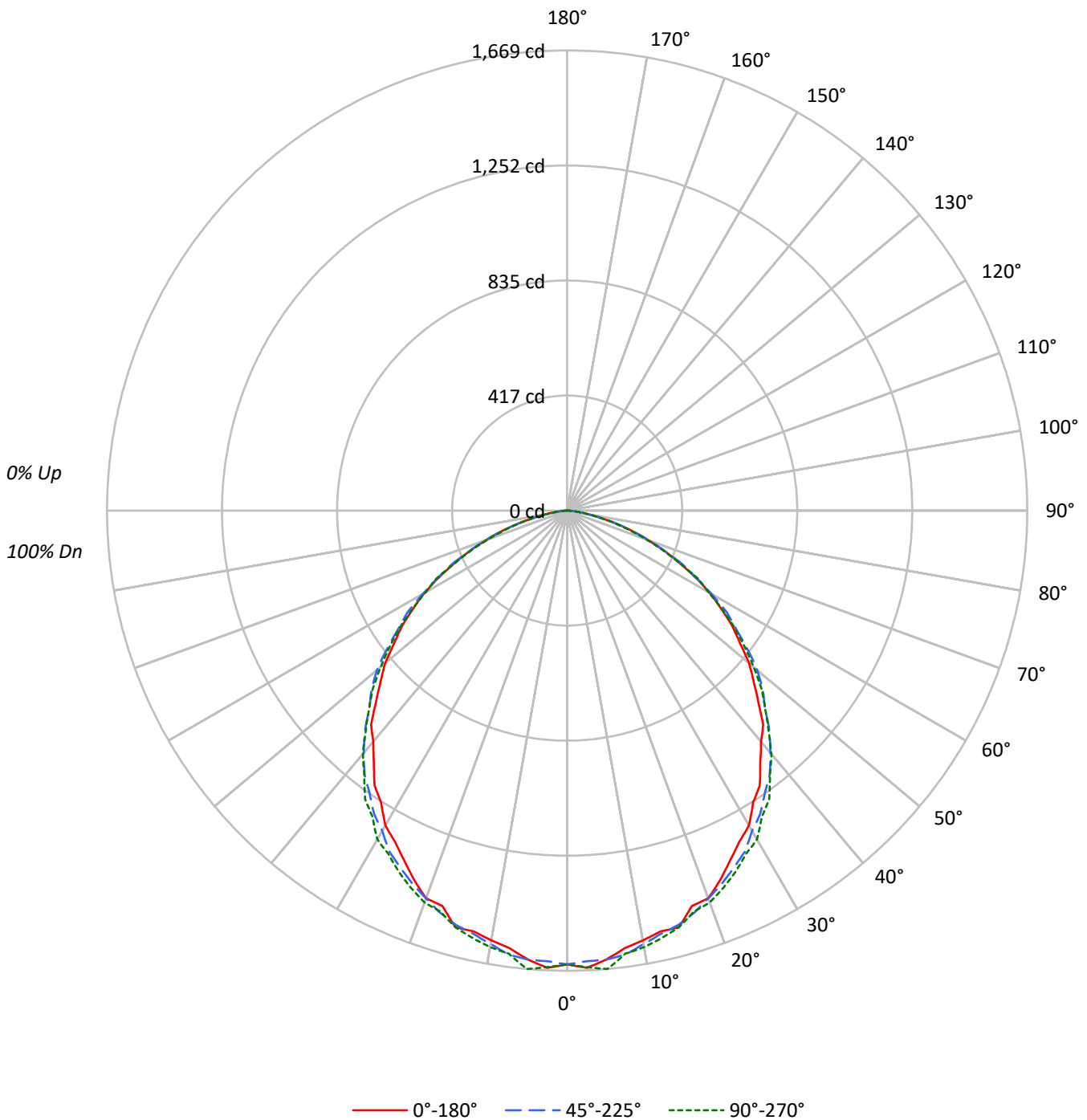
Lumens per Lamp: N/A  
Luminaire Lumens: 4148.0 lumens  
Efficiency: N/A  
Efficacy: 118.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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°	4429	4429	4429
5°	4414	4416	4509
10°	4325	4362	4393
15°	4359	4335	4360
20°	4285	4285	4331
25°	4154	4244	4291
30°	4097	4168	4279
35°	4000	4105	4197
40°	3844	4030	4047
45°	3728	3861	3867
50°	3606	3769	3696
55°	3436	3502	3477
60°	3212	3245	3186
65°	2865	2937	2844
70°	2458	2466	2397
75°	1946	1942	1867
80°	1305	1268	1218
85°	710	701	658

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3960 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.8	3.7
10°-20°	438.8	10.6
20°-30°	657.4	15.8
30°-40°	779.1	18.8
40°-50°	780.5	18.8
50°-60°	662.5	16.0
60°-70°	446.7	10.8
70°-80°	196.3	4.7
80°-90°	31.9	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°	1250.9	30.2
0°-40°	2030.0	48.9
0°-60°	3473.1	83.7
0°-90°	4148.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4148.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1646	1646	1646	1646	1646	
5°	1634	1630	1635	1630	1669	154
15°	1565	1547	1556	1564	1565	436
25°	1399	1406	1430	1448	1445	647
35°	1218	1221	1250	1278	1278	756
45°	980	998	1014	1041	1016	758
55°	732	727	746	741	741	651
65°	450	444	461	444	447	447
75°	187	183	187	174	180	201
85°	23	22	23	22	21	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1645.8	1645.8	1645.8	1645.8	1645.8
2.5°	1660.1	1647.5	1635.8	1649.4	1657.7
5°	1634.1	1630.3	1634.8	1629.9	1669.2
7.5°	1600.6	1615.2	1623.7	1618.4	1620.7
10°	1582.7	1577.6	1596.5	1609.7	1607.8
12.5°	1563.6	1571.2	1572.3	1586.5	1587.8
15°	1564.6	1546.6	1556.1	1564.2	1564.9
17.5°	1503.9	1523.4	1530.0	1548.5	1525.5
20°	1496.4	1482.2	1496.4	1515.3	1512.4
22.5°	1450.7	1434.8	1465.4	1482.2	1481.1
25°	1398.9	1406.5	1429.5	1448.2	1445.2
27.5°	1353.4	1362.3	1395.1	1420.8	1404.2
30°	1318.4	1313.9	1341.5	1364.5	1377.2
32.5°	1255.7	1271.8	1304.1	1326.9	1314.7
35°	1217.6	1221.2	1249.5	1278.4	1277.6
37.5°	1151.1	1167.9	1207.6	1215.7	1208.3
40°	1094.4	1111.2	1147.1	1155.8	1152.2
42.5°	1052.5	1055.5	1086.3	1096.3	1080.4
45°	979.6	997.9	1014.5	1040.6	1016.0
47.5°	917.6	926.1	961.8	968.8	955.8
50°	861.3	864.2	900.2	891.4	882.9
52.5°	790.5	803.0	823.2	821.5	811.5
55°	732.3	727.4	746.5	741.4	741.2
57.5°	662.4	670.9	686.6	678.5	665.6
60°	596.9	597.1	602.9	593.7	592.0
62.5°	524.0	526.6	527.9	516.6	534.9
65°	449.9	443.9	461.3	443.7	446.7
67.5°	381.7	384.6	382.9	371.9	376.1
70°	312.4	316.2	313.4	300.9	304.7
72.5°	249.1	244.4	247.4	231.6	238.9
75°	187.2	183.4	186.8	173.6	179.6
77.5°	127.5	130.5	128.4	121.3	125.4
80°	84.2	81.8	81.8	77.8	78.6
82.5°	49.1	46.8	46.1	44.8	46.8
85°	23.0	22.3	22.7	22.1	21.3
87.5°	8.3	8.5	8.5	8.1	7.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)