

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: P590356

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-93-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590356  
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-35-UNV-93-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

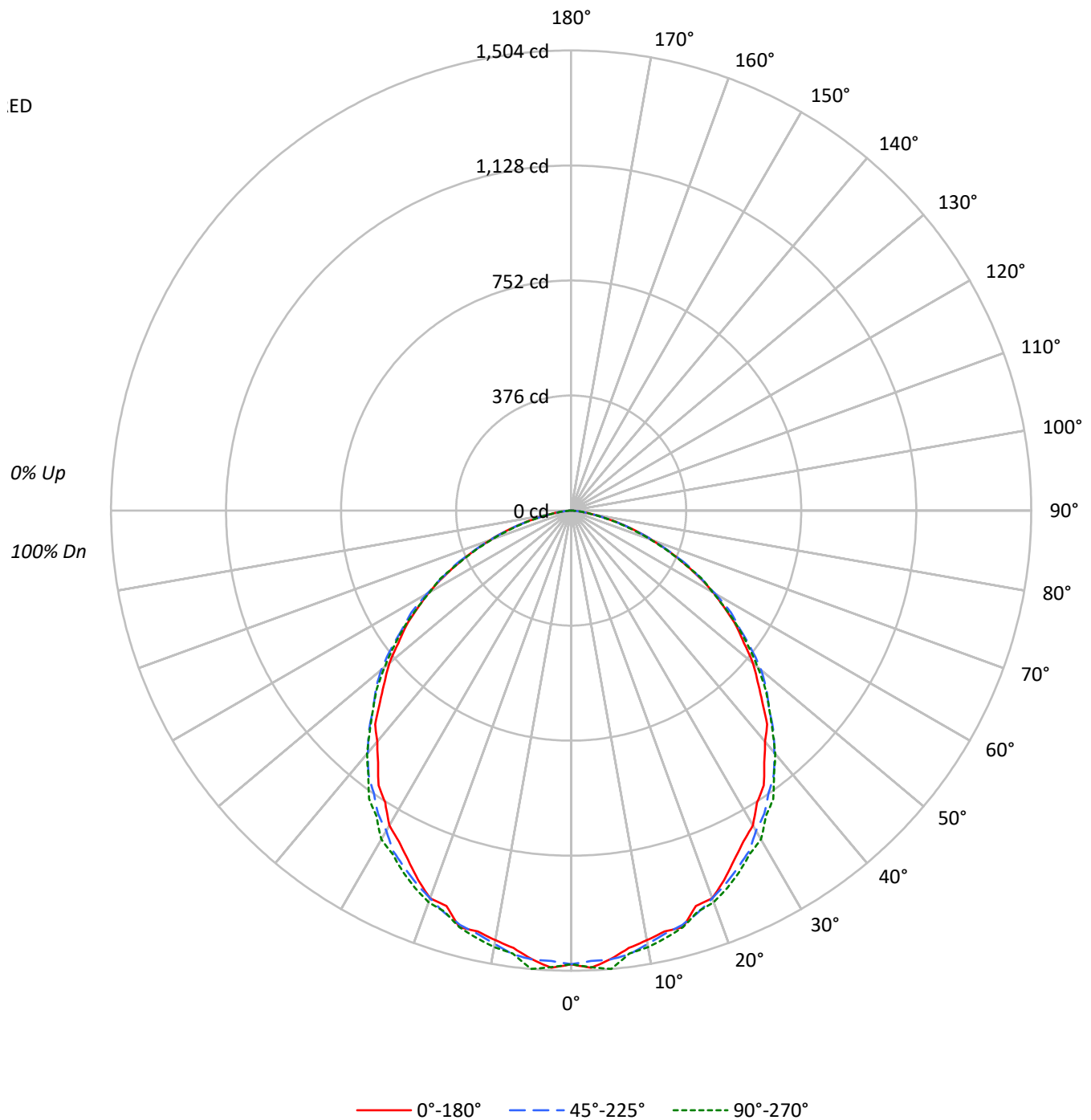
Lumens per Lamp: N/A  
Luminaire Lumens: 3737.0 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	3990	3990	3990
5°	3977	3978	4062
10°	3896	3930	3958
15°	3927	3906	3928
20°	3861	3861	3902
25°	3742	3824	3866
30°	3691	3755	3856
35°	3604	3698	3781
40°	3463	3630	3646
45°	3359	3478	3483
50°	3248	3395	3330
55°	3095	3155	3133
60°	2894	2923	2871
65°	2581	2646	2562
70°	2214	2222	2160
75°	1754	1750	1682
80°	1175	1142	1097
85°	639	633	590

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3568 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.5	3.7
10°-20°	395.3	10.6
20°-30°	592.2	15.8
30°-40°	701.9	18.8
40°-50°	703.2	18.8
50°-60°	596.9	16.0
60°-70°	402.4	10.8
70°-80°	176.8	4.7
80°-90°	28.7	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°	1127.0	30.2
0°-40°	1828.9	48.9
0°-60°	3129.0	83.7
0°-90°	3737.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3737.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1483	1483	1483	1483	1483	
5°	1472	1469	1473	1468	1504	139
15°	1410	1393	1402	1409	1410	393
25°	1260	1267	1288	1305	1302	583
35°	1097	1100	1126	1152	1151	681
45°	883	899	914	938	915	683
55°	660	655	672	668	668	587
65°	405	400	416	400	402	403
75°	169	165	168	156	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°	1482.7	1482.7	1482.7	1482.7	1482.7
2.5°	1495.6	1484.3	1473.7	1486.0	1493.5
5°	1472.2	1468.8	1472.8	1468.4	1503.8
7.5°	1442.0	1455.2	1462.8	1458.1	1460.2
10°	1425.9	1421.3	1438.3	1450.2	1448.5
12.5°	1408.7	1415.5	1416.5	1429.3	1430.5
15°	1409.6	1393.3	1402.0	1409.2	1409.8
17.5°	1354.9	1372.5	1378.4	1395.1	1374.4
20°	1348.2	1335.3	1348.2	1365.2	1362.5
22.5°	1307.0	1292.6	1320.2	1335.3	1334.4
25°	1260.3	1267.2	1287.9	1304.7	1302.0
27.5°	1219.3	1227.4	1256.8	1280.0	1265.1
30°	1187.7	1183.7	1208.6	1229.3	1240.8
32.5°	1131.3	1145.8	1174.9	1195.4	1184.5
35°	1097.0	1100.2	1125.7	1151.7	1151.0
37.5°	1037.1	1052.2	1088.0	1095.3	1088.6
40°	985.9	1001.1	1033.4	1041.3	1038.0
42.5°	948.2	950.9	978.7	987.7	973.3
45°	882.6	899.0	914.0	937.5	915.3
47.5°	826.7	834.3	866.5	872.8	861.1
50°	775.9	778.6	811.0	803.1	795.5
52.5°	712.2	723.5	741.7	740.1	731.1
55°	659.7	655.3	672.5	668.0	667.8
57.5°	596.7	604.4	618.6	611.3	599.6
60°	537.8	538.0	543.1	534.9	533.4
62.5°	472.1	474.4	475.6	465.4	481.9
65°	405.3	399.9	415.6	399.7	402.4
67.5°	343.8	346.5	345.0	335.0	338.9
70°	281.4	284.9	282.4	271.1	274.5
72.5°	224.4	220.2	222.8	208.7	215.2
75°	168.7	165.2	168.3	156.4	161.8
77.5°	114.9	117.5	115.6	109.3	113.0
80°	75.8	73.7	73.7	70.1	70.8
82.5°	44.2	42.1	41.5	40.4	42.1
85°	20.7	20.1	20.5	19.9	19.1
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)