

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: P563330

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563330  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-3LO-40-UNV-81-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

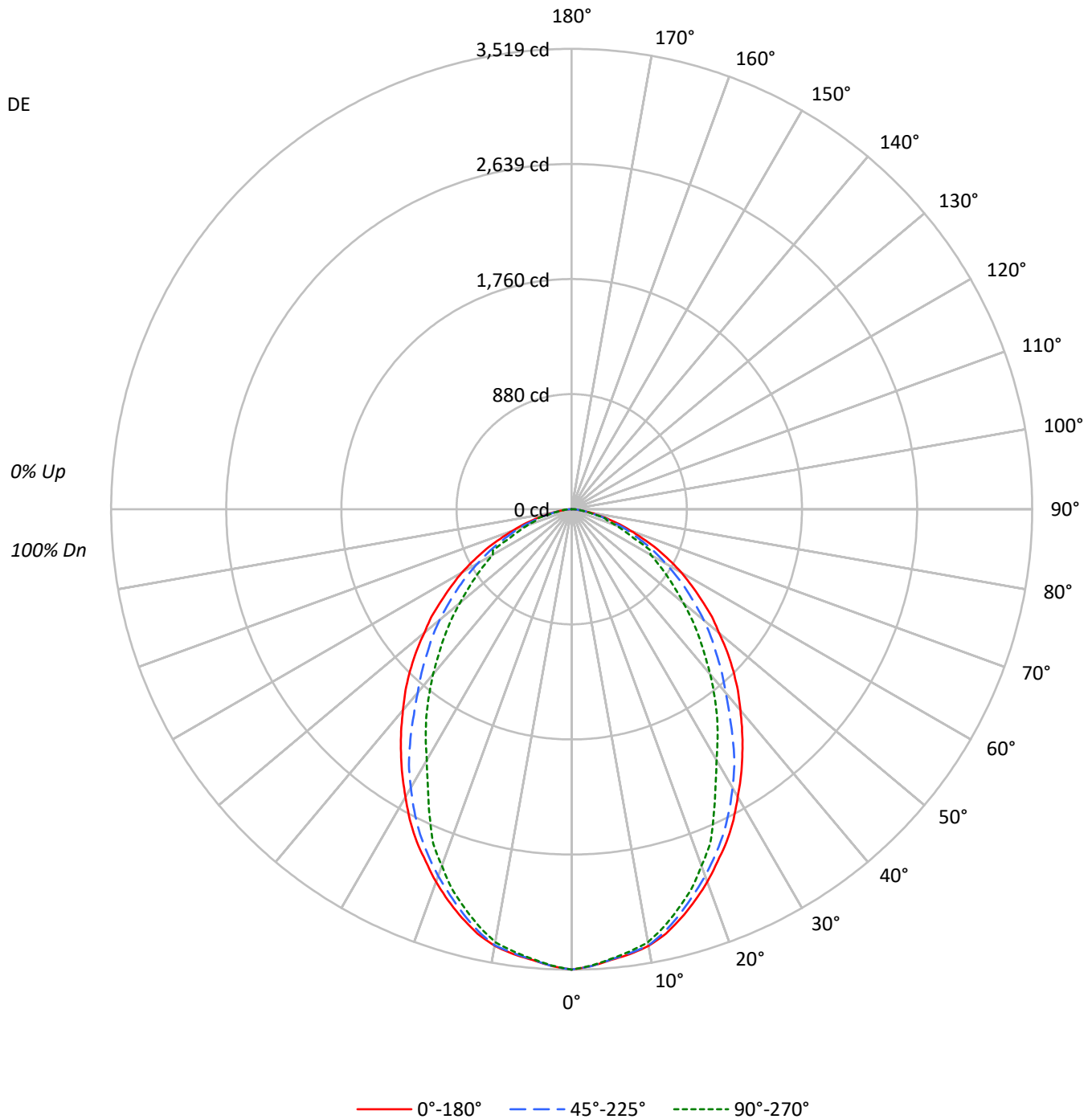
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6908.0 lumens  
Efficiency: N/A  
Efficacy: 98.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

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

	0°	45°	90°
0°	4735	4735	4735
5°	4670	4665	4659
10°	4630	4624	4591
15°	4505	4460	4397
20°	4339	4270	4153
25°	4161	4070	3817
30°	3944	3817	3438
35°	3735	3528	3181
40°	3522	3215	2894
45°	3321	2972	2616
50°	3074	2759	2333
55°	2844	2500	2090
60°	2605	2233	1872
65°	2292	1956	1658
70°	1888	1712	1408
75°	1501	1311	1375
80°	1009	945	883
85°	628	753	880

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3321 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	327.6	4.7
10°-20°	899.0	13.0
20°-30°	1244.5	18.0
30°-40°	1327.0	19.2
40°-50°	1210.6	17.5
50°-60°	948.5	13.7
60°-70°	618.2	8.9
70°-80°	273.9	4.0
80°-90°	58.8	0.9
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°	2471.0	35.8
0°-40°	3798.1	55.0
0°-60°	5957.2	86.2
0°-90°	6908.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6908.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3519	3519	3519	3519	3519	
5°	3458	3454	3454	3450	3450	328
15°	3234	3234	3202	3169	3157	909
25°	2803	2787	2742	2644	2571	1287
35°	2274	2258	2148	1985	1936	1422
45°	1745	1709	1562	1432	1375	1344
55°	1212	1176	1066	940	891	1087
65°	720	679	614	626	521	710
75°	289	268	252	240	264	310
85°	41	45	49	53	57	56
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3518.8	3518.8	3518.8	3518.8	3518.8
2.5°	3494.4	3494.4	3494.4	3490.4	3490.4
5°	3457.8	3453.8	3453.8	3449.7	3449.7
7.5°	3429.3	3425.3	3421.2	3417.1	3409.0
10°	3388.7	3388.7	3384.6	3364.3	3360.2
12.5°	3323.6	3319.5	3303.2	3274.8	3266.6
15°	3234.1	3234.1	3201.5	3169.0	3156.8
17.5°	3136.4	3132.4	3091.7	3059.2	3042.9
20°	3030.7	3022.5	2981.9	2929.0	2900.5
22.5°	2912.7	2912.7	2863.9	2794.7	2766.3
25°	2802.9	2786.6	2741.8	2644.2	2571.0
27.5°	2676.8	2652.4	2603.5	2465.2	2379.8
30°	2538.4	2526.2	2457.1	2278.1	2213.0
32.5°	2408.3	2387.9	2314.7	2127.6	2074.7
35°	2274.0	2257.8	2147.9	1985.2	1936.4
37.5°	2139.8	2119.4	1981.1	1851.0	1789.9
40°	2005.5	1981.1	1830.6	1712.6	1647.6
42.5°	1879.4	1846.9	1700.4	1574.3	1501.1
45°	1745.2	1708.6	1562.1	1431.9	1375.0
47.5°	1610.9	1578.4	1444.1	1309.9	1244.8
50°	1468.6	1440.1	1318.0	1183.8	1114.6
52.5°	1350.6	1305.8	1187.9	1053.6	996.7
55°	1212.3	1175.7	1065.8	939.7	890.9
57.5°	1086.2	1049.6	947.9	829.9	789.2
60°	968.2	915.3	829.9	728.2	695.6
62.5°	838.0	797.3	724.1	638.7	679.4
65°	720.0	679.4	614.3	626.5	520.7
67.5°	589.9	569.5	512.6	455.6	439.3
70°	480.0	455.6	435.3	374.3	358.0
72.5°	382.4	358.0	329.5	297.0	284.8
75°	288.8	268.5	252.2	240.0	264.4
77.5°	199.3	191.2	179.0	166.8	162.7
80°	130.2	126.1	122.0	118.0	113.9
82.5°	77.3	77.3	77.3	77.3	77.3
85°	40.7	44.7	48.8	52.9	57.0
87.5°	24.4	24.4	28.5	32.5	36.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)