

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: P563697

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563697  
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-LD4-4HI-40-UNV-80-84-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

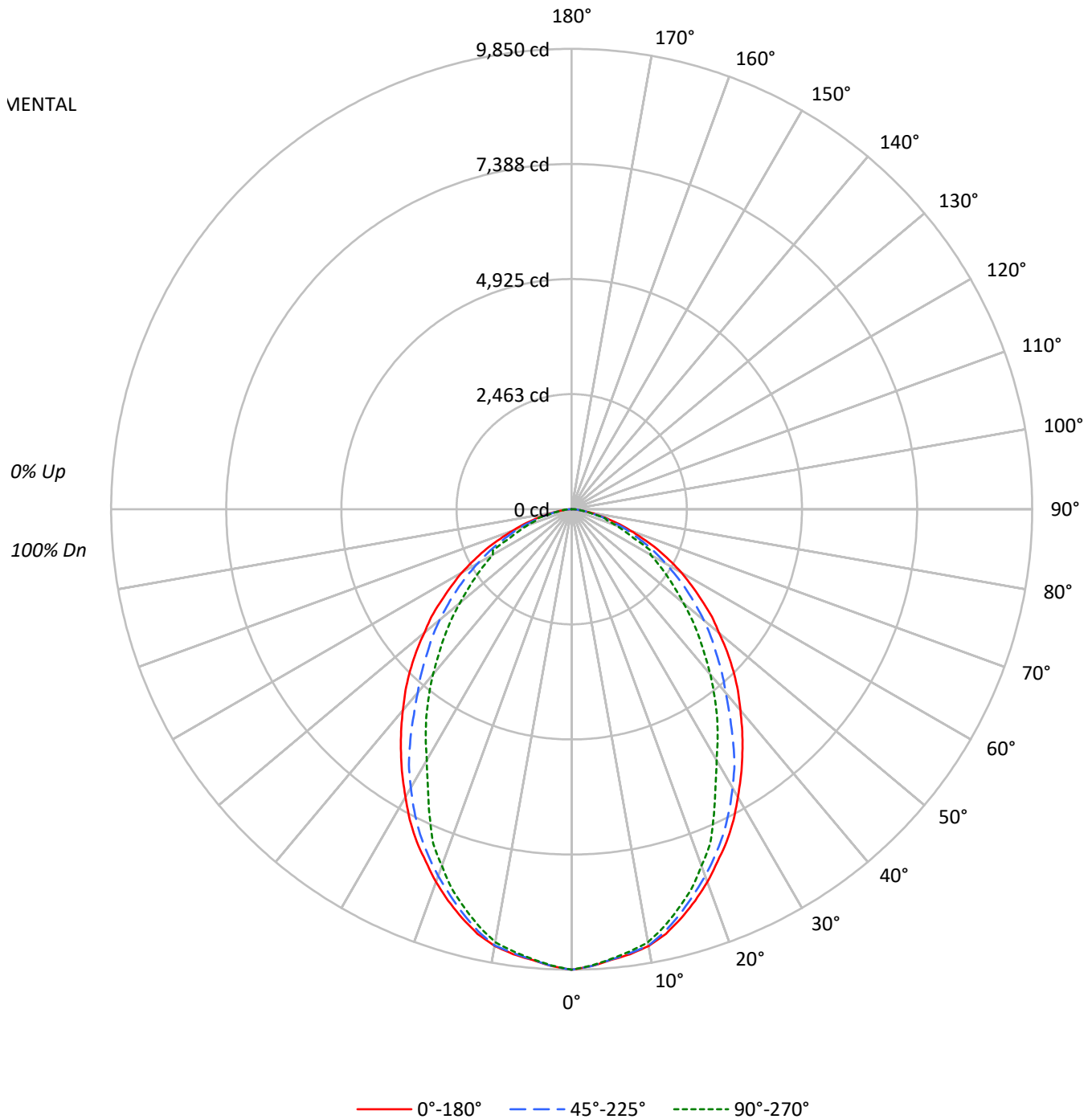
Lumens per Lamp: N/A  
Luminaire Lumens: 19338.0 lumens  
Efficiency: N/A  
Efficacy: 111.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	13254	13254	13254
5°	13074	13058	13043
10°	12960	12945	12851
15°	12611	12484	12310
20°	12148	11952	11626
25°	11648	11395	10685
30°	11040	10686	9625
35°	10456	9876	8904
40°	9861	9001	8101
45°	9296	8321	7324
50°	8605	7723	6531
55°	7961	6999	5850
60°	7293	6251	5240
65°	6417	5475	4641
70°	5286	4794	3942
75°	4203	3670	3848
80°	2824	2647	2471
85°	1758	2110	2461

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9296 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	916.9	4.7
10°-20°	2516.5	13.0
20°-30°	3483.9	18.0
30°-40°	3714.9	19.2
40°-50°	3389.0	17.5
50°-60°	2655.0	13.7
60°-70°	1730.4	8.9
70°-80°	766.6	4.0
80°-90°	164.6	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°	6917.4	35.8
0°-40°	10632.2	55.0
0°-60°	16676.3	86.2
0°-90°	19338.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	19338.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9850	9850	9850	9850	9850	
5°	9680	9668	9668	9657	9657	919
15°	9053	9053	8962	8871	8837	2545
25°	7846	7801	7675	7402	7197	3602
35°	6366	6320	6013	5557	5421	3980
45°	4885	4783	4373	4008	3849	3763
55°	3394	3291	2984	2631	2494	3044
65°	2016	1902	1720	1754	1458	1986
75°	808	752	706	672	740	867
85°	114	125	137	148	159	158
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9850.5	9850.5	9850.5	9850.5	9850.5
2.5°	9782.2	9782.2	9782.2	9770.8	9770.8
5°	9679.7	9668.3	9668.3	9656.9	9656.9
7.5°	9600.0	9588.6	9577.2	9565.8	9543.0
10°	9486.1	9486.1	9474.7	9417.8	9406.4
12.5°	9303.9	9292.5	9247.0	9167.2	9144.5
15°	9053.4	9053.4	8962.3	8871.2	8837.0
17.5°	8780.1	8768.7	8654.8	8563.7	8518.1
20°	8484.0	8461.2	8347.3	8199.3	8119.6
22.5°	8153.7	8153.7	8017.1	7823.5	7743.8
25°	7846.3	7800.7	7675.4	7402.1	7197.1
27.5°	7493.2	7424.9	7288.2	6901.1	6661.9
30°	7106.0	7071.9	6878.3	6377.2	6195.0
32.5°	6741.6	6684.7	6479.7	5955.9	5807.8
35°	6365.8	6320.3	6012.8	5557.3	5420.6
37.5°	5990.0	5933.1	5545.9	5181.5	5010.7
40°	5614.2	5545.9	5124.5	4794.3	4612.1
42.5°	5261.2	5170.1	4760.1	4407.1	4202.1
45°	4885.4	4782.9	4372.9	4008.5	3849.1
47.5°	4509.6	4418.5	4042.7	3666.9	3484.7
50°	4111.0	4031.3	3689.7	3313.9	3120.3
52.5°	3780.8	3655.5	3325.3	2949.5	2790.0
55°	3393.6	3291.1	2983.6	2630.6	2493.9
57.5°	3040.6	2938.1	2653.4	2323.1	2209.2
60°	2710.3	2562.3	2323.1	2038.4	1947.3
62.5°	2345.9	2232.0	2027.0	1787.9	1901.8
65°	2015.7	1901.8	1719.6	1753.7	1457.6
67.5°	1651.2	1594.3	1434.9	1275.4	1229.9
70°	1343.8	1275.4	1218.5	1047.7	1002.1
72.5°	1070.5	1002.1	922.4	831.3	797.2
75°	808.5	751.6	706.0	671.9	740.2
77.5°	558.0	535.2	501.1	466.9	455.5
80°	364.4	353.0	341.6	330.2	318.9
82.5°	216.4	216.4	216.4	216.4	216.4
85°	113.9	125.3	136.7	148.0	159.4
87.5°	68.3	68.3	79.7	91.1	102.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)