

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: P561928

Luminaire Tested: FSR-24-2-LD4-1LO-35-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561928  
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-24-2-LD4-1LO-35-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

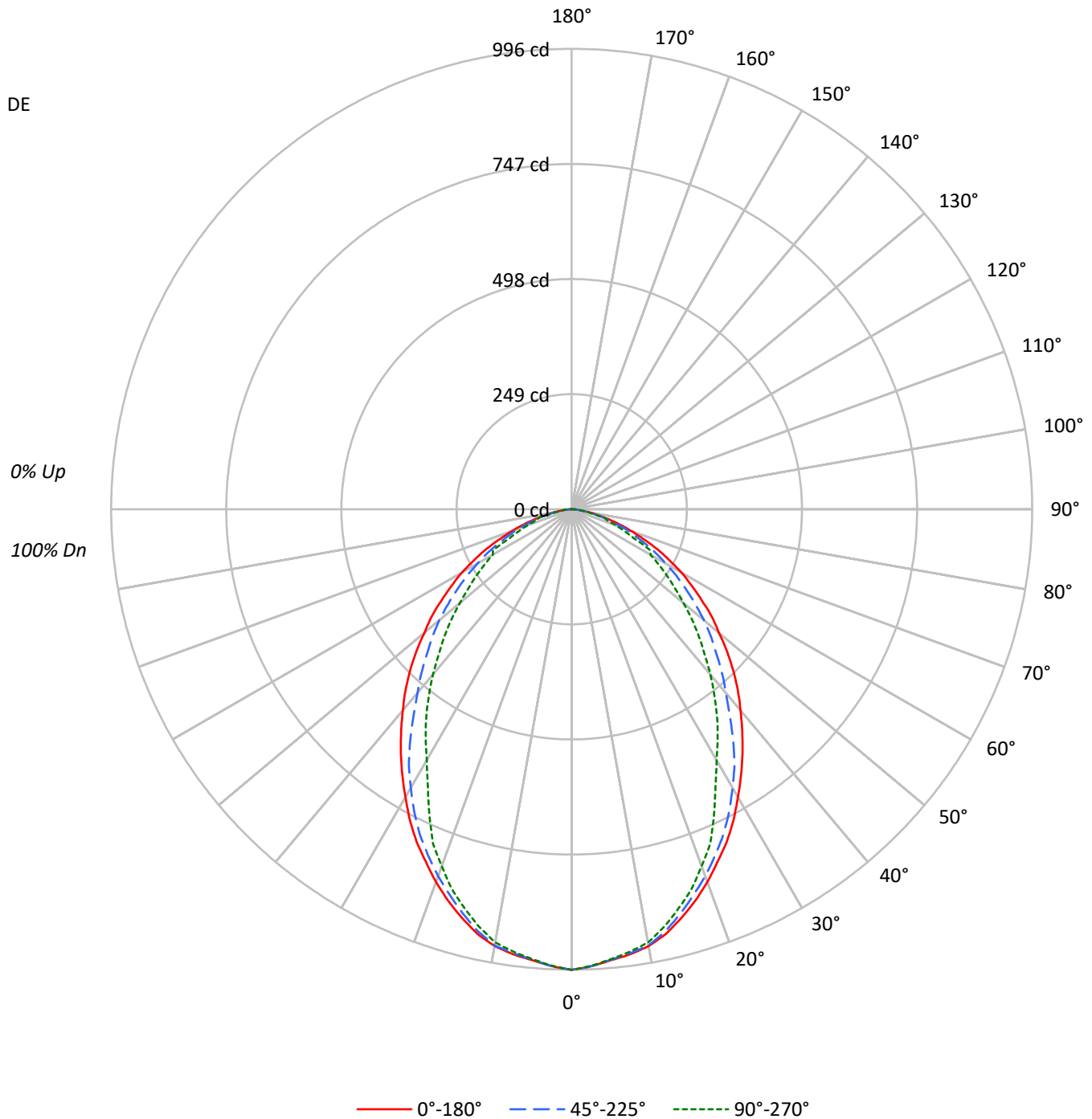
Lumens per Lamp: N/A  
Luminaire Lumens: 1956.0 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1341	1341	1341
5°	1322	1321	1319
10°	1311	1309	1300
15°	1276	1263	1245
20°	1229	1209	1176
25°	1178	1153	1081
30°	1117	1081	974
35°	1058	999	901
40°	997	910	819
45°	940	842	741
50°	870	781	661
55°	805	708	592
60°	738	632	530
65°	649	554	469
70°	535	485	399
75°	425	371	389
80°	286	268	250
85°	178	213	249

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 940 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.7	4.7
10°-20°	254.5	13.0
20°-30°	352.4	18.0
30°-40°	375.7	19.2
40°-50°	342.8	17.5
50°-60°	268.6	13.7
60°-70°	175.0	8.9
70°-80°	77.5	4.0
80°-90°	16.7	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°	699.7	35.8
0°-40°	1075.4	55.0
0°-60°	1686.8	86.2
0°-90°	1956.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1956.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	996	996	996	996	996	
5°	979	978	978	977	977	93
15°	916	916	906	897	894	257
25°	794	789	776	749	728	364
35°	644	639	608	562	548	403
45°	494	484	442	406	389	381
55°	343	333	302	266	252	308
65°	204	192	174	177	147	201
75°	82	76	71	68	75	88
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	996.4	996.4	996.4	996.4	996.4
2.5°	989.4	989.4	989.4	988.3	988.3
5°	979.1	977.9	977.9	976.8	976.8
7.5°	971.0	969.9	968.7	967.6	965.3
10°	959.5	959.5	958.3	952.6	951.4
12.5°	941.1	939.9	935.3	927.2	924.9
15°	915.7	915.7	906.5	897.3	893.8
17.5°	888.1	886.9	875.4	866.2	861.6
20°	858.1	855.8	844.3	829.3	821.3
22.5°	824.7	824.7	810.9	791.3	783.3
25°	793.6	789.0	776.4	748.7	728.0
27.5°	757.9	751.0	737.2	698.0	673.8
30°	718.8	715.3	695.7	645.0	626.6
32.5°	681.9	676.1	655.4	602.4	587.4
35°	643.9	639.3	608.2	562.1	548.3
37.5°	605.9	600.1	561.0	524.1	506.8
40°	567.9	561.0	518.3	484.9	466.5
42.5°	532.2	522.9	481.5	445.8	425.0
45°	494.1	483.8	442.3	405.5	389.3
47.5°	456.1	446.9	408.9	370.9	352.5
50°	415.8	407.8	373.2	335.2	315.6
52.5°	382.4	369.7	336.3	298.3	282.2
55°	343.3	332.9	301.8	266.1	252.3
57.5°	307.5	297.2	268.4	235.0	223.5
60°	274.1	259.2	235.0	206.2	197.0
62.5°	237.3	225.8	205.0	180.8	192.4
65°	203.9	192.4	173.9	177.4	147.4
67.5°	167.0	161.3	145.1	129.0	124.4
70°	135.9	129.0	123.2	106.0	101.4
72.5°	108.3	101.4	93.3	84.1	80.6
75°	81.8	76.0	71.4	68.0	74.9
77.5°	56.4	54.1	50.7	47.2	46.1
80°	36.9	35.7	34.6	33.4	32.3
82.5°	21.9	21.9	21.9	21.9	21.9
85°	11.5	12.7	13.8	15.0	16.1
87.5°	6.9	6.9	8.1	9.2	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)