

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: P561936

Luminaire Tested: FSR-24-2-LD4-1LO-35-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561936  
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-82-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

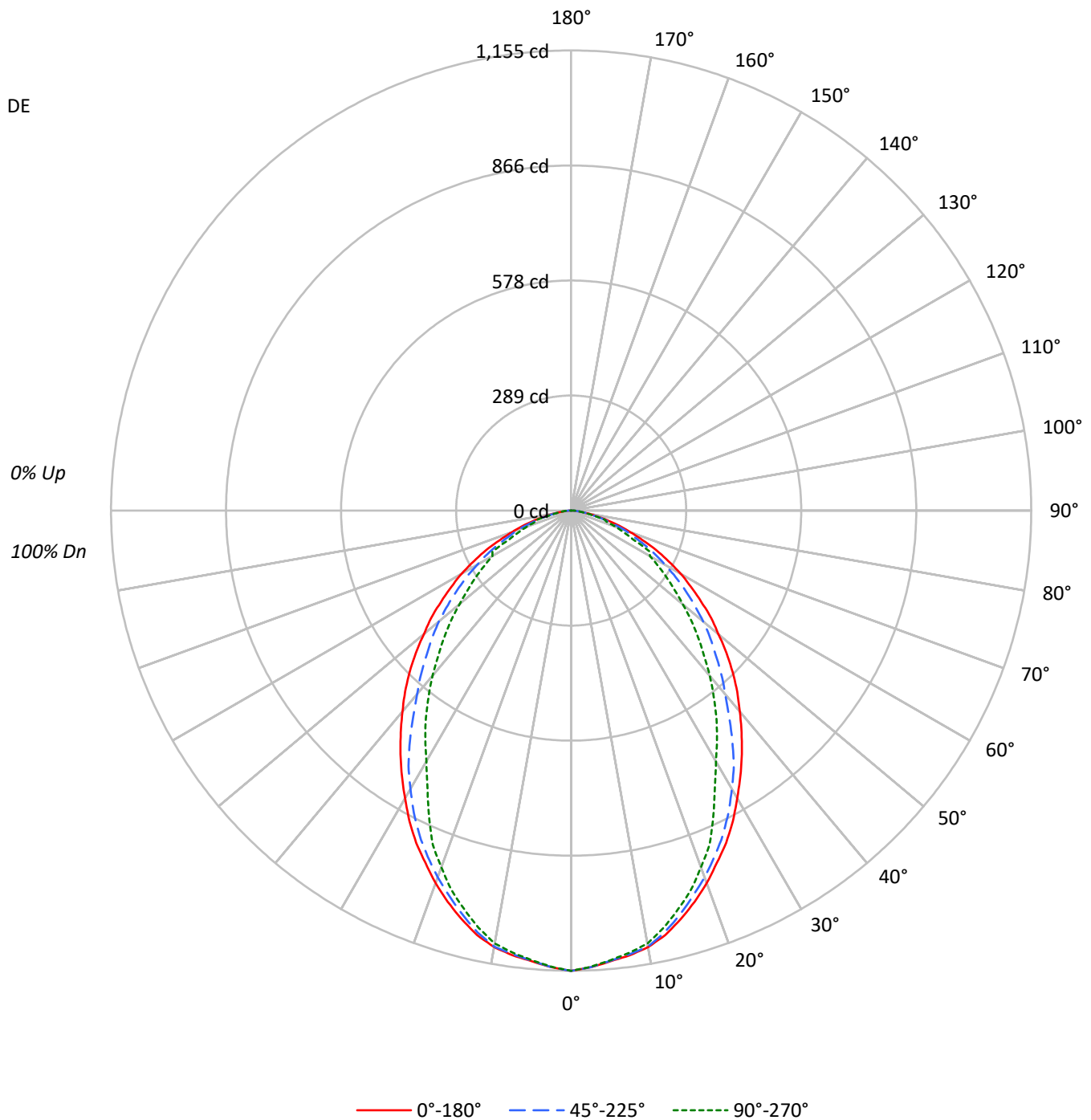
Lumens per Lamp: N/A  
Luminaire Lumens: 2268.0 lumens  
Efficiency: N/A  
Efficacy: 96.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

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

	0°	45°	90°
0°	1554	1554	1554
5°	1533	1531	1530
10°	1520	1518	1507
15°	1479	1464	1444
20°	1425	1402	1364
25°	1366	1336	1253
30°	1295	1253	1129
35°	1226	1158	1044
40°	1156	1056	950
45°	1090	976	859
50°	1009	906	766
55°	934	821	686
60°	855	733	615
65°	753	642	544
70°	620	562	462
75°	493	430	451
80°	331	311	290
85°	207	247	289

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1090 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.5	4.7
10°-20°	295.1	13.0
20°-30°	408.6	18.0
30°-40°	435.7	19.2
40°-50°	397.5	17.5
50°-60°	311.4	13.7
60°-70°	203.0	8.9
70°-80°	89.9	4.0
80°-90°	19.3	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°	811.3	35.8
0°-40°	1247.0	55.0
0°-60°	1955.8	86.2
0°-90°	2268.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2268.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1155	1155	1155	1155	1155	
5°	1135	1134	1134	1133	1133	108
15°	1062	1062	1051	1040	1036	298
25°	920	915	900	868	844	422
35°	747	741	705	652	636	467
45°	573	561	513	470	451	441
55°	398	386	350	308	292	357
65°	236	223	202	206	171	233
75°	95	88	83	79	87	102
85°	13	15	16	17	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1155.3	1155.3	1155.3	1155.3	1155.3
2.5°	1147.3	1147.3	1147.3	1145.9	1145.9
5°	1135.3	1133.9	1133.9	1132.6	1132.6
7.5°	1125.9	1124.6	1123.2	1121.9	1119.2
10°	1112.5	1112.5	1111.2	1104.5	1103.2
12.5°	1091.2	1089.8	1084.5	1075.2	1072.5
15°	1061.8	1061.8	1051.1	1040.4	1036.4
17.5°	1029.7	1028.4	1015.1	1004.4	999.0
20°	995.0	992.3	979.0	961.6	952.3
22.5°	956.3	956.3	940.3	917.6	908.2
25°	920.2	914.9	900.2	868.1	844.1
27.5°	878.8	870.8	854.8	809.4	781.3
30°	833.4	829.4	806.7	747.9	726.6
32.5°	790.7	784.0	760.0	698.5	681.2
35°	746.6	741.3	705.2	651.8	635.7
37.5°	702.5	695.8	650.4	607.7	587.7
40°	658.4	650.4	601.0	562.3	540.9
42.5°	617.0	606.4	558.3	516.9	492.8
45°	573.0	560.9	512.9	470.1	451.4
47.5°	528.9	518.2	474.1	430.1	408.7
50°	482.1	472.8	432.7	388.7	366.0
52.5°	443.4	428.7	390.0	345.9	327.2
55°	398.0	386.0	349.9	308.5	292.5
57.5°	356.6	344.6	311.2	272.5	259.1
60°	317.9	300.5	272.5	239.1	228.4
62.5°	275.1	261.8	237.7	209.7	223.0
65°	236.4	223.0	201.7	205.7	171.0
67.5°	193.7	187.0	168.3	149.6	144.2
70°	157.6	149.6	142.9	122.9	117.5
72.5°	125.5	117.5	108.2	97.5	93.5
75°	94.8	88.1	82.8	78.8	86.8
77.5°	65.4	62.8	58.8	54.8	53.4
80°	42.7	41.4	40.1	38.7	37.4
82.5°	25.4	25.4	25.4	25.4	25.4
85°	13.4	14.7	16.0	17.4	18.7
87.5°	8.0	8.0	9.3	10.7	12.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)