

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: P563460

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563460  
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-LD4-3STD-35-UNV-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

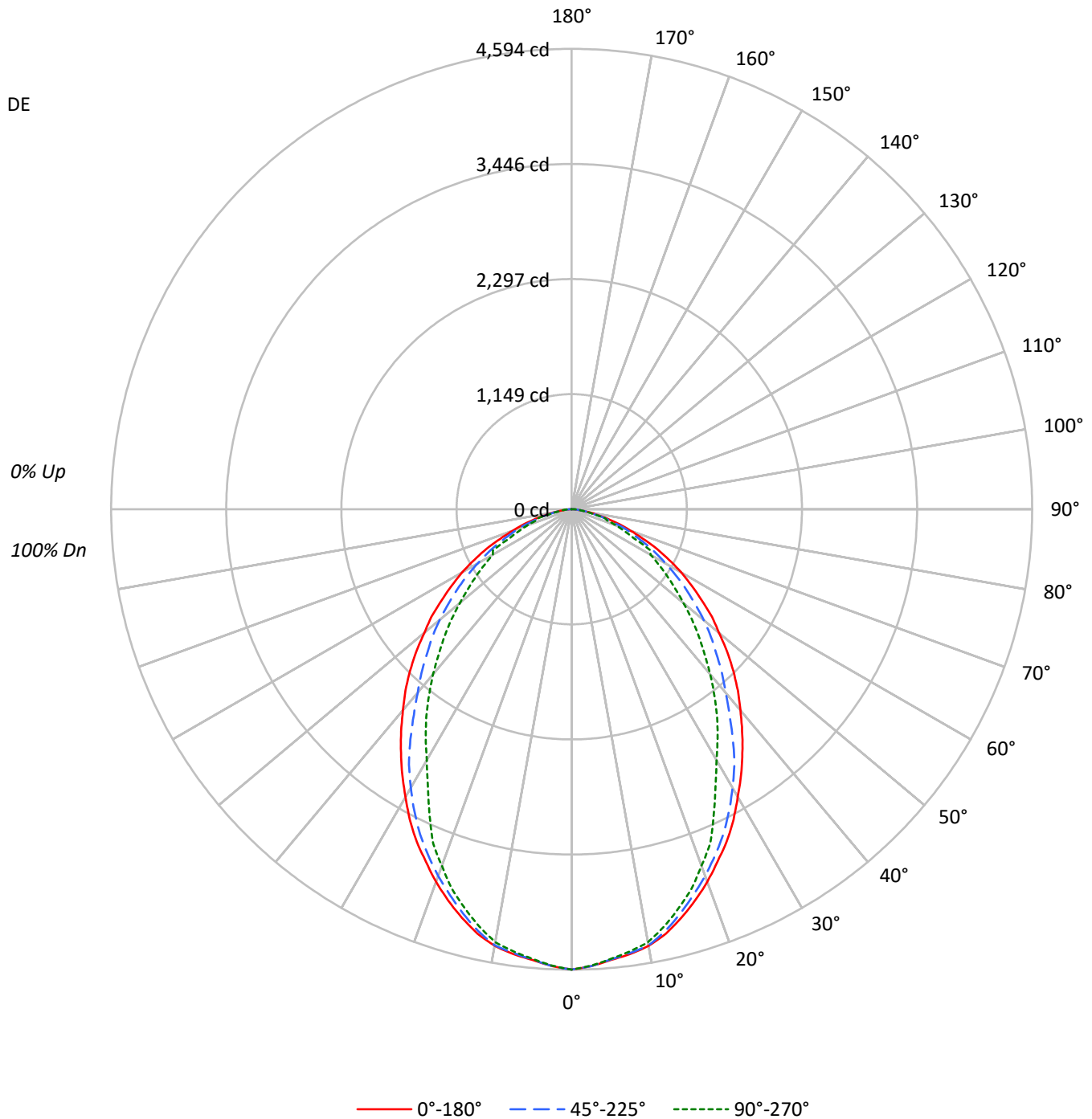
Lumens per Lamp: N/A  
Luminaire Lumens: 9018.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6181	6181	6181
5°	6097	6090	6082
10°	6044	6037	5993
15°	5881	5822	5740
20°	5665	5574	5422
25°	5432	5314	4983
30°	5148	4983	4488
35°	4876	4606	4152
40°	4598	4197	3778
45°	4335	3880	3416
50°	4013	3602	3046
55°	3712	3264	2728
60°	3401	2915	2444
65°	2993	2553	2164
70°	2465	2235	1838
75°	1960	1712	1795
80°	1316	1234	1152
85°	820	983	1147

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4335 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	427.6	4.7
10°-20°	1173.5	13.0
20°-30°	1624.7	18.0
30°-40°	1732.4	19.2
40°-50°	1580.4	17.5
50°-60°	1238.1	13.7
60°-70°	807.0	8.9
70°-80°	357.5	4.0
80°-90°	76.8	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°	3225.8	35.8
0°-40°	4958.2	55.0
0°-60°	7776.8	86.2
0°-90°	9018.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9018.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4594	4594	4594	4594	4594	
5°	4514	4509	4509	4503	4503	428
15°	4222	4222	4179	4137	4121	1187
25°	3659	3638	3579	3452	3356	1680
35°	2969	2947	2804	2592	2528	1856
45°	2278	2230	2039	1869	1795	1755
55°	1583	1535	1391	1227	1163	1419
65°	940	887	802	818	680	926
75°	377	350	329	313	345	404
85°	53	58	64	69	74	74
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4593.6	4593.6	4593.6	4593.6	4593.6
2.5°	4561.8	4561.8	4561.8	4556.5	4556.5
5°	4514.0	4508.7	4508.7	4503.4	4503.4
7.5°	4476.8	4471.5	4466.2	4460.9	4450.3
10°	4423.7	4423.7	4418.4	4391.8	4386.5
12.5°	4338.7	4333.4	4312.2	4275.0	4264.4
15°	4221.9	4221.9	4179.4	4136.9	4121.0
17.5°	4094.5	4089.1	4036.0	3993.6	3972.3
20°	3956.4	3945.8	3892.7	3823.6	3786.4
22.5°	3802.4	3802.4	3738.6	3648.4	3611.2
25°	3659.0	3637.7	3579.3	3451.9	3356.3
27.5°	3494.4	3462.5	3398.8	3218.2	3106.7
30°	3313.8	3297.9	3207.6	2973.9	2889.0
32.5°	3143.9	3117.3	3021.7	2777.4	2708.4
35°	2968.6	2947.4	2804.0	2591.6	2527.8
37.5°	2793.4	2766.8	2586.3	2416.3	2336.7
40°	2618.1	2586.3	2389.8	2235.8	2150.8
42.5°	2453.5	2411.0	2219.8	2055.2	1959.6
45°	2278.2	2230.4	2039.3	1869.3	1795.0
47.5°	2103.0	2060.5	1885.3	1710.0	1625.0
50°	1917.1	1879.9	1720.6	1545.4	1455.1
52.5°	1763.1	1704.7	1550.7	1375.4	1301.1
55°	1582.6	1534.8	1391.4	1226.7	1163.0
57.5°	1417.9	1370.1	1237.4	1083.4	1030.3
60°	1263.9	1194.9	1083.4	950.6	908.1
62.5°	1094.0	1040.9	945.3	833.8	886.9
65°	940.0	886.9	801.9	817.8	679.8
67.5°	770.0	743.5	669.1	594.8	573.5
70°	626.6	594.8	568.2	488.6	467.3
72.5°	499.2	467.3	430.2	387.7	371.7
75°	377.1	350.5	329.3	313.3	345.2
77.5°	260.2	249.6	233.7	217.7	212.4
80°	169.9	164.6	159.3	154.0	148.7
82.5°	100.9	100.9	100.9	100.9	100.9
85°	53.1	58.4	63.7	69.0	74.3
87.5°	31.9	31.9	37.2	42.5	47.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)