

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: P563456

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563456  
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-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

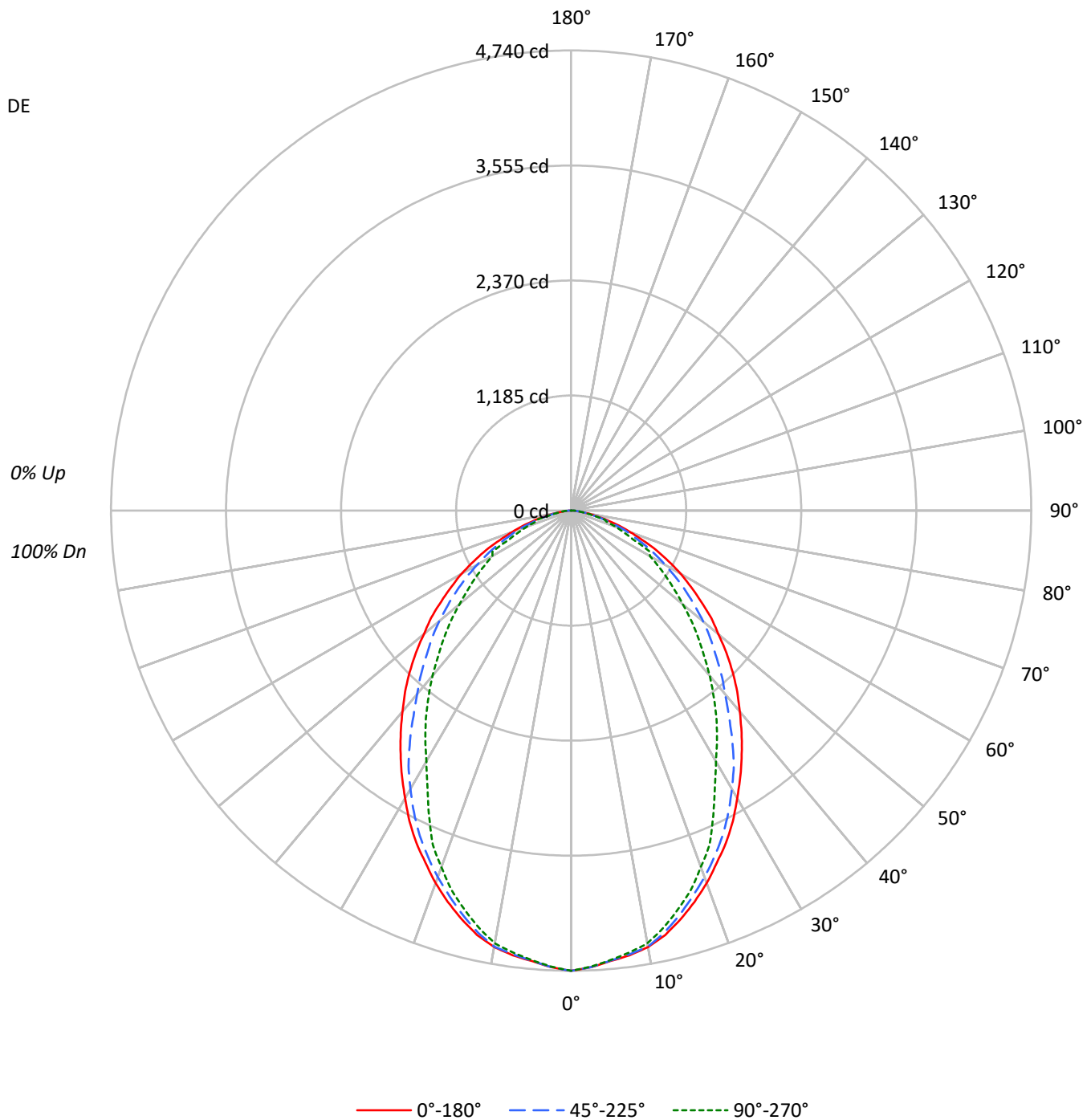
Lumens per Lamp: N/A  
Luminaire Lumens: 9306.0 lumens  
Efficiency: N/A  
Efficacy: 93.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P563456

CATALOG NUMBER: FSR-24-4-LD4-3STD-35-UNV-81-84-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563456

CATALOG NUMBER: FSR-24-4-LD4-3STD-35-UNV-81-84-EDD-90

**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				
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°	6378	6378	6378
5°	6291	6284	6277
10°	6237	6229	6184
15°	6069	6008	5924
20°	5846	5752	5595
25°	5605	5483	5142
30°	5313	5143	4632
35°	5032	4753	4285
40°	4745	4331	3898
45°	4474	4004	3525
50°	4141	3717	3143
55°	3831	3368	2815
60°	3510	3009	2522
65°	3088	2635	2233
70°	2544	2307	1897
75°	2023	1766	1852
80°	1359	1274	1189
85°	846	1016	1184

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4474 cd/sqm



TEST NUMBER: P563456

CATALOG NUMBER: FSR-24-4-LD4-3STD-35-UNV-81-84-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	441.3	4.7
10°-20°	1211.0	13.0
20°-30°	1676.6	18.0
30°-40°	1787.7	19.2
40°-50°	1630.9	17.5
50°-60°	1277.7	13.7
60°-70°	832.7	8.9
70°-80°	368.9	4.0
80°-90°	79.2	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°	3328.8	35.8
0°-40°	5116.5	55.0
0°-60°	8025.1	86.2
0°-90°	9306.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9306.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4740	4740	4740	4740	4740	
5°	4658	4653	4653	4647	4647	442
15°	4357	4357	4313	4269	4253	1225
25°	3776	3754	3694	3562	3464	1733
35°	3063	3042	2894	2674	2609	1915
45°	2351	2302	2104	1929	1852	1811
55°	1633	1584	1436	1266	1200	1465
65°	970	915	828	844	702	956
75°	389	362	340	323	356	417
85°	55	60	66	71	77	76
90°	0	0	0	0	0	



TEST NUMBER: P563456

CATALOG NUMBER: FSR-24-4-LD4-3STD-35-UNV-81-84-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4740.4	4740.4	4740.4	4740.4	4740.4
2.5°	4707.5	4707.5	4707.5	4702.0	4702.0
5°	4658.1	4652.7	4652.7	4647.2	4647.2
7.5°	4619.8	4614.3	4608.8	4603.3	4592.4
10°	4565.0	4565.0	4559.5	4532.1	4526.6
12.5°	4477.3	4471.8	4449.9	4411.5	4400.6
15°	4356.7	4356.7	4312.9	4269.1	4252.6
17.5°	4225.2	4219.7	4164.9	4121.1	4099.2
20°	4082.7	4071.8	4017.0	3945.7	3907.4
22.5°	3923.8	3923.8	3858.0	3764.9	3726.5
25°	3775.8	3753.9	3693.6	3562.1	3463.5
27.5°	3606.0	3573.1	3507.3	3321.0	3205.9
30°	3419.6	3403.2	3310.0	3068.9	2981.2
32.5°	3244.3	3216.9	3118.2	2866.1	2794.9
35°	3063.4	3041.5	2893.5	2674.3	2608.6
37.5°	2882.6	2855.2	2668.8	2493.5	2411.3
40°	2701.7	2668.8	2466.1	2307.2	2219.5
42.5°	2531.8	2488.0	2290.7	2120.8	2022.2
45°	2351.0	2301.7	2104.4	1929.0	1852.3
47.5°	2170.1	2126.3	1945.5	1764.6	1676.9
50°	1978.3	1940.0	1775.6	1594.7	1501.6
52.5°	1819.4	1759.1	1600.2	1419.4	1342.6
55°	1633.1	1583.8	1435.8	1265.9	1200.2
57.5°	1463.2	1413.9	1276.9	1118.0	1063.2
60°	1304.3	1233.0	1118.0	981.0	937.1
62.5°	1128.9	1074.1	975.5	860.4	915.2
65°	970.0	915.2	827.5	843.9	701.5
67.5°	794.6	767.2	690.5	613.8	591.9
70°	646.7	613.8	586.4	504.2	482.3
72.5°	515.1	482.3	443.9	400.1	383.6
75°	389.1	361.7	339.8	323.3	356.2
77.5°	268.5	257.6	241.1	224.7	219.2
80°	175.4	169.9	164.4	158.9	153.4
82.5°	104.1	104.1	104.1	104.1	104.1
85°	54.8	60.3	65.8	71.2	76.7
87.5°	32.9	32.9	38.4	43.8	49.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)