

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: P561155

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561155  
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-12-4-LD4-1STD-35-UNV-81-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

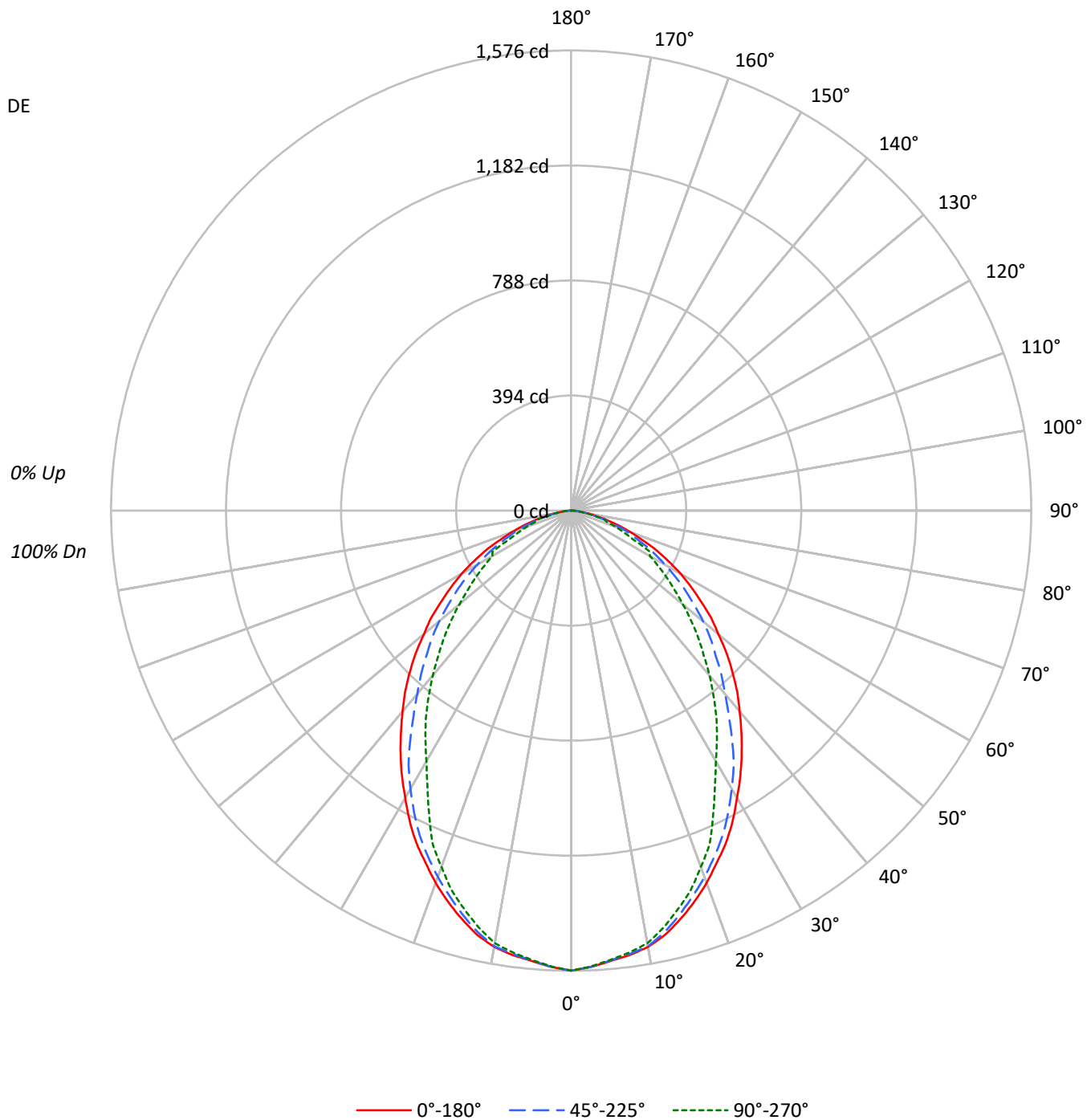
Lumens per Lamp: N/A  
Luminaire Lumens: 3093.0 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4240	4240	4240
5°	4182	4177	4172
10°	4146	4141	4111
15°	4034	3994	3938
20°	3886	3823	3719
25°	3726	3645	3418
30°	3532	3418	3079
35°	3345	3159	2848
40°	3155	2879	2591
45°	2974	2662	2343
50°	2753	2470	2089
55°	2547	2239	1871
60°	2333	2000	1676
65°	2053	1751	1484
70°	1691	1533	1261
75°	1344	1174	1231
80°	903	846	790
85°	562	676	787

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2974 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.7	4.7
10°-20°	402.5	13.0
20°-30°	557.2	18.0
30°-40°	594.2	19.2
40°-50°	542.1	17.5
50°-60°	424.7	13.7
60°-70°	276.8	8.9
70°-80°	122.6	4.0
80°-90°	26.3	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°	1106.4	35.8
0°-40°	1700.6	55.0
0°-60°	2667.3	86.2
0°-90°	3093.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3093.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1576	1576	1576	1576	1576	
5°	1548	1546	1546	1545	1545	147
15°	1448	1448	1434	1419	1413	407
25°	1255	1248	1228	1184	1151	576
35°	1018	1011	962	889	867	637
45°	781	765	699	641	616	602
55°	543	526	477	421	399	487
65°	322	304	275	280	233	318
75°	129	120	113	108	118	139
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1575.5	1575.5	1575.5	1575.5	1575.5
2.5°	1564.6	1564.6	1564.6	1562.8	1562.8
5°	1548.2	1546.4	1546.4	1544.6	1544.6
7.5°	1535.5	1533.6	1531.8	1530.0	1526.4
10°	1517.2	1517.2	1515.4	1506.3	1504.5
12.5°	1488.1	1486.3	1479.0	1466.2	1462.6
15°	1448.0	1448.0	1433.5	1418.9	1413.4
17.5°	1404.3	1402.5	1384.3	1369.7	1362.4
20°	1357.0	1353.3	1335.1	1311.4	1298.7
22.5°	1304.1	1304.1	1282.3	1251.3	1238.6
25°	1255.0	1247.7	1227.6	1183.9	1151.1
27.5°	1198.5	1187.6	1165.7	1103.8	1065.5
30°	1136.6	1131.1	1100.1	1020.0	990.9
32.5°	1078.3	1069.2	1036.4	952.6	928.9
35°	1018.2	1010.9	961.7	888.9	867.0
37.5°	958.1	949.0	887.0	828.7	801.4
40°	898.0	887.0	819.6	766.8	737.7
42.5°	841.5	826.9	761.4	704.9	672.1
45°	781.4	765.0	699.4	641.1	615.6
47.5°	721.3	706.7	646.6	586.5	557.4
50°	657.5	644.8	590.1	530.0	499.1
52.5°	604.7	584.7	531.9	471.7	446.2
55°	542.8	526.4	477.2	420.7	398.9
57.5°	486.3	469.9	424.4	371.6	353.4
60°	433.5	409.8	371.6	326.0	311.5
62.5°	375.2	357.0	324.2	286.0	304.2
65°	322.4	304.2	275.0	280.5	233.1
67.5°	264.1	255.0	229.5	204.0	196.7
70°	214.9	204.0	194.9	167.6	160.3
72.5°	171.2	160.3	147.5	133.0	127.5
75°	129.3	120.2	112.9	107.5	118.4
77.5°	89.2	85.6	80.1	74.7	72.9
80°	58.3	56.5	54.6	52.8	51.0
82.5°	34.6	34.6	34.6	34.6	34.6
85°	18.2	20.0	21.9	23.7	25.5
87.5°	10.9	10.9	12.7	14.6	16.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)