

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: P590337

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590337  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

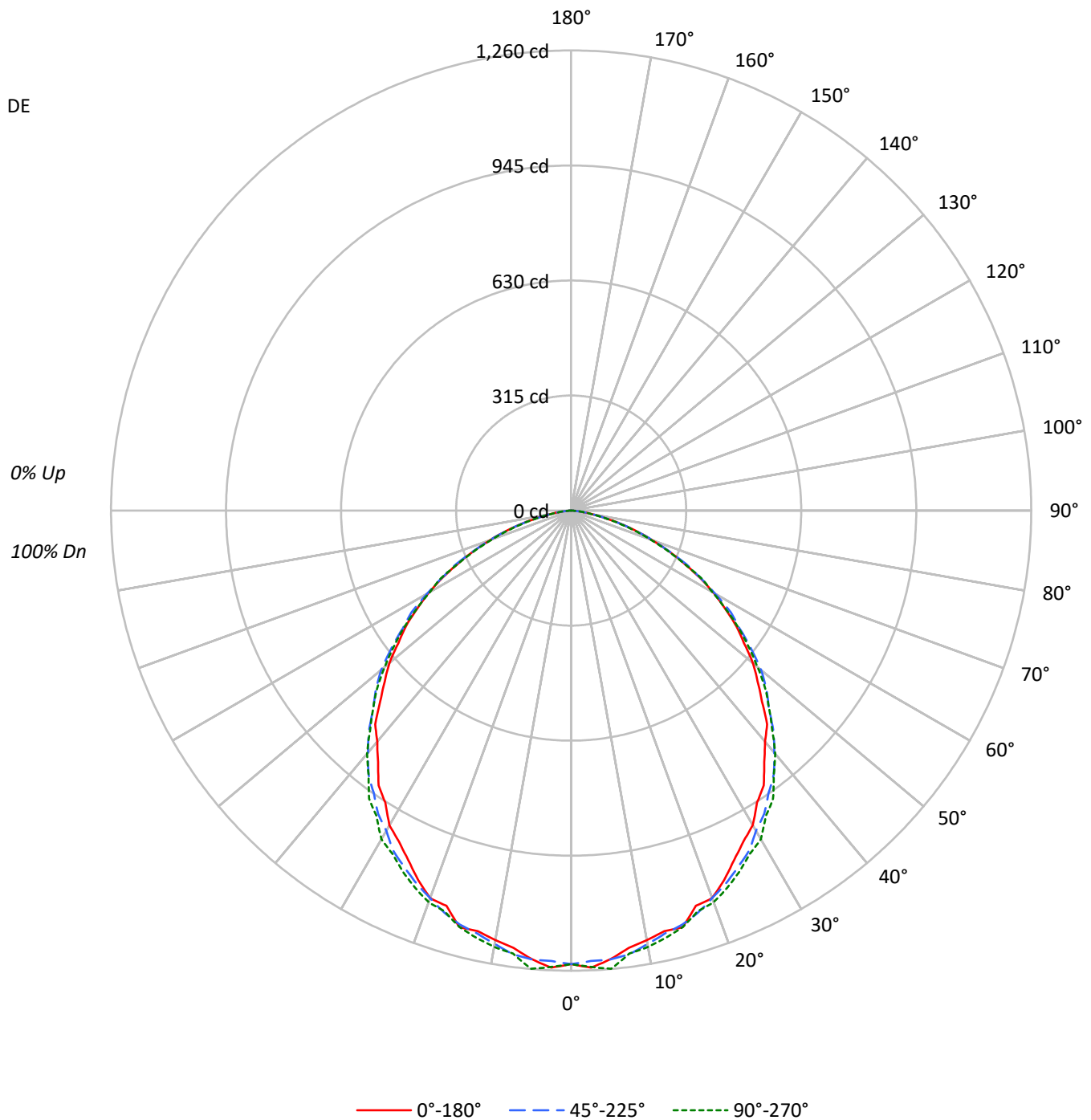
Lumens per Lamp: N/A  
Luminaire Lumens: 3130.0 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P590337

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590337

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD

**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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

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

	0°	45°	90°
0°	3342	3342	3342
5°	3331	3332	3402
10°	3263	3292	3315
15°	3289	3271	3290
20°	3234	3234	3268
25°	3134	3203	3238
30°	3091	3145	3229
35°	3018	3098	3167
40°	2901	3041	3054
45°	2813	2913	2917
50°	2721	2843	2789
55°	2593	2643	2624
60°	2424	2448	2404
65°	2162	2216	2146
70°	1854	1861	1809
75°	1469	1465	1409
80°	984	956	919
85°	534	531	494

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2988 cd/sqm



TEST NUMBER: P590337

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.8	3.7
10°-20°	331.1	10.6
20°-30°	496.0	15.8
30°-40°	587.9	18.8
40°-50°	589.0	18.8
50°-60°	500.0	16.0
60°-70°	337.1	10.8
70°-80°	148.1	4.7
80°-90°	24.1	0.8
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°	943.9	30.2
0°-40°	1531.8	48.9
0°-60°	2620.8	83.7
0°-90°	3130.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3130.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1233	1230	1234	1230	1260	116
15°	1181	1167	1174	1180	1181	329
25°	1056	1061	1079	1093	1090	488
35°	919	922	943	965	964	570
45°	739	753	766	785	767	572
55°	553	549	563	560	559	492
65°	340	335	348	335	337	338
75°	141	138	141	131	136	151
85°	17	17	17	17	16	25
90°	0	0	0	0	0	

TEST NUMBER: P590337

CATALOG NUMBER: FSR-24-2-LD4-2STD-35-UNV-81-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1241.9	1241.9	1241.9	1241.9	1241.9
2.5°	1252.6	1243.2	1234.4	1244.6	1250.9
5°	1233.1	1230.2	1233.6	1229.9	1259.5
7.5°	1207.8	1218.8	1225.2	1221.2	1223.0
10°	1194.3	1190.4	1204.7	1214.6	1213.2
12.5°	1179.8	1185.6	1186.4	1197.2	1198.1
15°	1180.7	1167.0	1174.2	1180.3	1180.8
17.5°	1134.8	1149.5	1154.5	1168.5	1151.1
20°	1129.2	1118.4	1129.2	1143.5	1141.2
22.5°	1094.7	1082.7	1105.8	1118.4	1117.6
25°	1055.6	1061.4	1078.7	1092.8	1090.5
27.5°	1021.3	1028.0	1052.7	1072.1	1059.6
30°	994.8	991.4	1012.3	1029.6	1039.2
32.5°	947.5	959.7	984.1	1001.2	992.1
35°	918.8	921.5	942.9	964.7	964.0
37.5°	868.6	881.3	911.3	917.4	911.7
40°	825.8	838.5	865.6	872.1	869.4
42.5°	794.2	796.5	819.7	827.2	815.2
45°	739.2	753.0	765.5	785.2	766.6
47.5°	692.4	698.8	725.7	731.0	721.3
50°	649.9	652.1	679.2	672.7	666.3
52.5°	596.5	606.0	621.2	619.9	612.4
55°	552.6	548.9	563.3	559.5	559.3
57.5°	499.8	506.2	518.1	512.0	502.2
60°	450.4	450.6	454.9	448.0	446.7
62.5°	395.4	397.3	398.3	389.8	403.6
65°	339.5	335.0	348.1	334.8	337.1
67.5°	288.0	290.2	288.9	280.6	283.8
70°	235.7	238.6	236.5	227.1	229.9
72.5°	187.9	184.4	186.6	174.8	180.2
75°	141.3	138.4	140.9	131.0	135.5
77.5°	96.2	98.5	96.9	91.6	94.6
80°	63.5	61.7	61.7	58.7	59.3
82.5°	37.0	35.3	34.8	33.8	35.3
85°	17.3	16.8	17.2	16.7	16.0
87.5°	6.3	6.4	6.4	6.1	5.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)