

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: P561200

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-80-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561200  
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-40-UNV-80-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

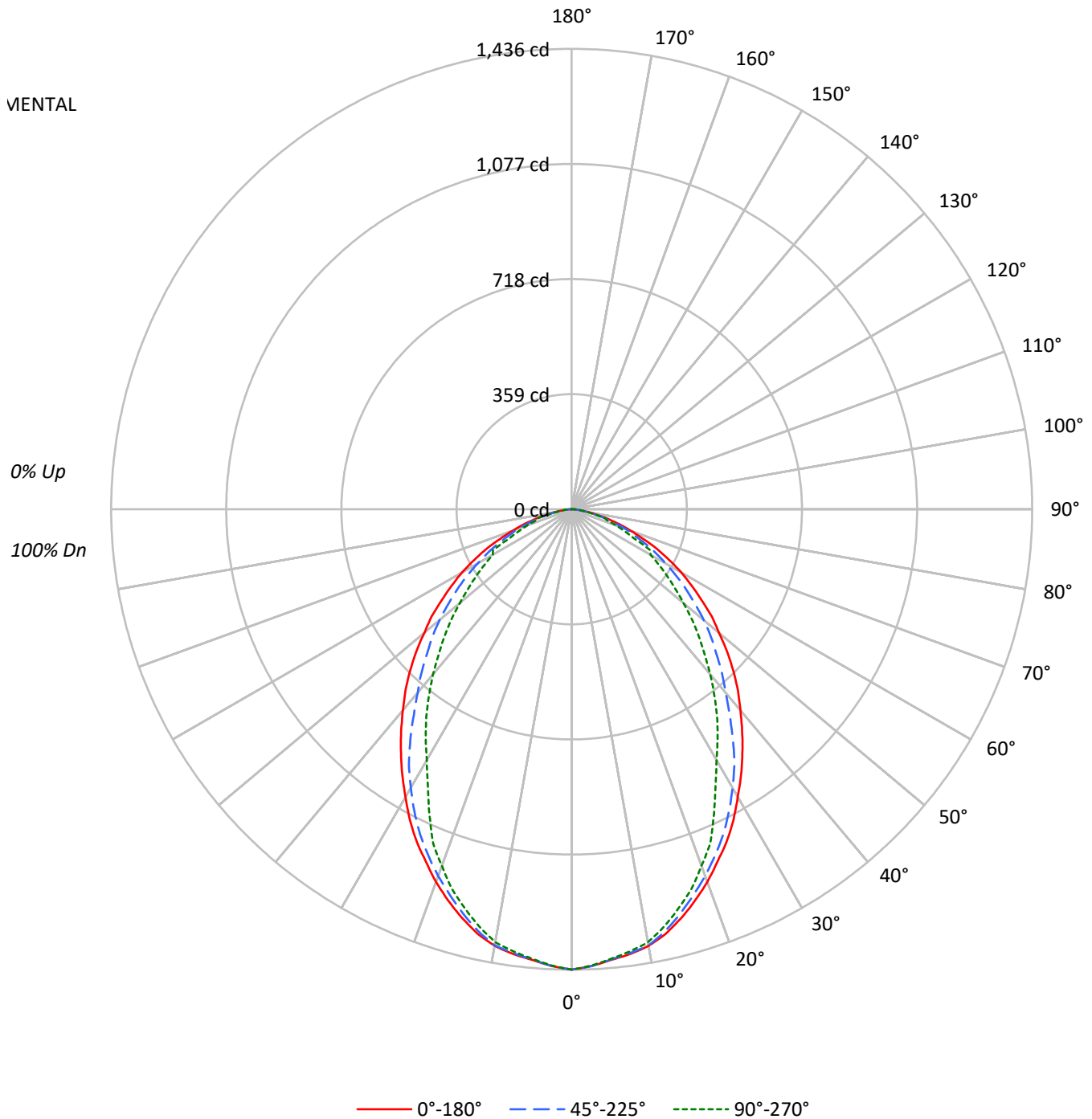
Lumens per Lamp: N/A  
Luminaire Lumens: 2819.0 lumens  
Efficiency: N/A  
Efficacy: 84.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P561200

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-84-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P561200

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-84-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					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°	3864	3864	3864
5°	3812	3807	3803
10°	3778	3774	3747
15°	3677	3640	3589
20°	3542	3485	3389
25°	3396	3322	3115
30°	3219	3116	2806
35°	3049	2879	2596
40°	2875	2624	2362
45°	2710	2426	2135
50°	2509	2252	1904
55°	2321	2040	1706
60°	2126	1823	1528
65°	1871	1596	1353
70°	1541	1397	1149
75°	1226	1070	1122
80°	823	772	721
85°	513	614	716

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2710 cd/sqm



TEST NUMBER: P561200

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-84-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.7	4.7
10°-20°	366.8	13.0
20°-30°	507.9	18.0
30°-40°	541.5	19.2
40°-50°	494.0	17.5
50°-60°	387.1	13.7
60°-70°	252.3	8.9
70°-80°	111.8	4.0
80°-90°	24.0	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°	1008.4	35.8
0°-40°	1549.9	55.0
0°-60°	2431.0	86.2
0°-90°	2819.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2819.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1436	1436	1436	1436	1436	
5°	1411	1409	1409	1408	1408	134
15°	1320	1320	1306	1293	1288	371
25°	1144	1137	1119	1079	1049	525
35°	928	921	876	810	790	580
45°	712	697	638	584	561	549
55°	495	480	435	384	364	444
65°	294	277	251	256	212	290
75°	118	110	103	98	108	126
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



TEST NUMBER: P561200

CATALOG NUMBER: FSR-12-4-LD4-1STD-40-UNV-80-84-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1436.0	1436.0	1436.0	1436.0	1436.0
2.5°	1426.0	1426.0	1426.0	1424.3	1424.3
5°	1411.1	1409.4	1409.4	1407.7	1407.7
7.5°	1399.4	1397.8	1396.1	1394.5	1391.1
10°	1382.8	1382.8	1381.2	1372.9	1371.2
12.5°	1356.3	1354.6	1348.0	1336.4	1333.0
15°	1319.8	1319.8	1306.5	1293.2	1288.2
17.5°	1279.9	1278.3	1261.7	1248.4	1241.7
20°	1236.8	1233.4	1216.8	1195.3	1183.6
22.5°	1188.6	1188.6	1168.7	1140.5	1128.8
25°	1143.8	1137.1	1118.9	1079.0	1049.2
27.5°	1092.3	1082.4	1062.4	1006.0	971.1
30°	1035.9	1030.9	1002.7	929.6	903.1
32.5°	982.8	974.5	944.6	868.2	846.6
35°	928.0	921.3	876.5	810.1	790.2
37.5°	873.2	864.9	808.5	755.3	730.4
40°	818.4	808.5	747.0	698.9	672.3
42.5°	767.0	753.7	693.9	642.4	612.6
45°	712.2	697.2	637.5	584.3	561.1
47.5°	657.4	644.1	589.3	534.5	508.0
50°	599.3	587.7	537.9	483.1	454.9
52.5°	551.1	532.9	484.7	430.0	406.7
55°	494.7	479.8	434.9	383.5	363.6
57.5°	443.2	428.3	386.8	338.7	322.1
60°	395.1	373.5	338.7	297.2	283.9
62.5°	342.0	325.4	295.5	260.6	277.2
65°	293.8	277.2	250.7	255.7	212.5
67.5°	240.7	232.4	209.2	185.9	179.3
70°	195.9	185.9	177.6	152.7	146.1
72.5°	156.0	146.1	134.5	121.2	116.2
75°	117.9	109.6	102.9	97.9	107.9
77.5°	81.3	78.0	73.0	68.1	66.4
80°	53.1	51.5	49.8	48.1	46.5
82.5°	31.5	31.5	31.5	31.5	31.5
85°	16.6	18.3	19.9	21.6	23.2
87.5°	10.0	10.0	11.6	13.3	14.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)