

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: P561393

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-80-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561393  
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-LD4-2HI-40-UNV-80-84-EDD  
Description: 1X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

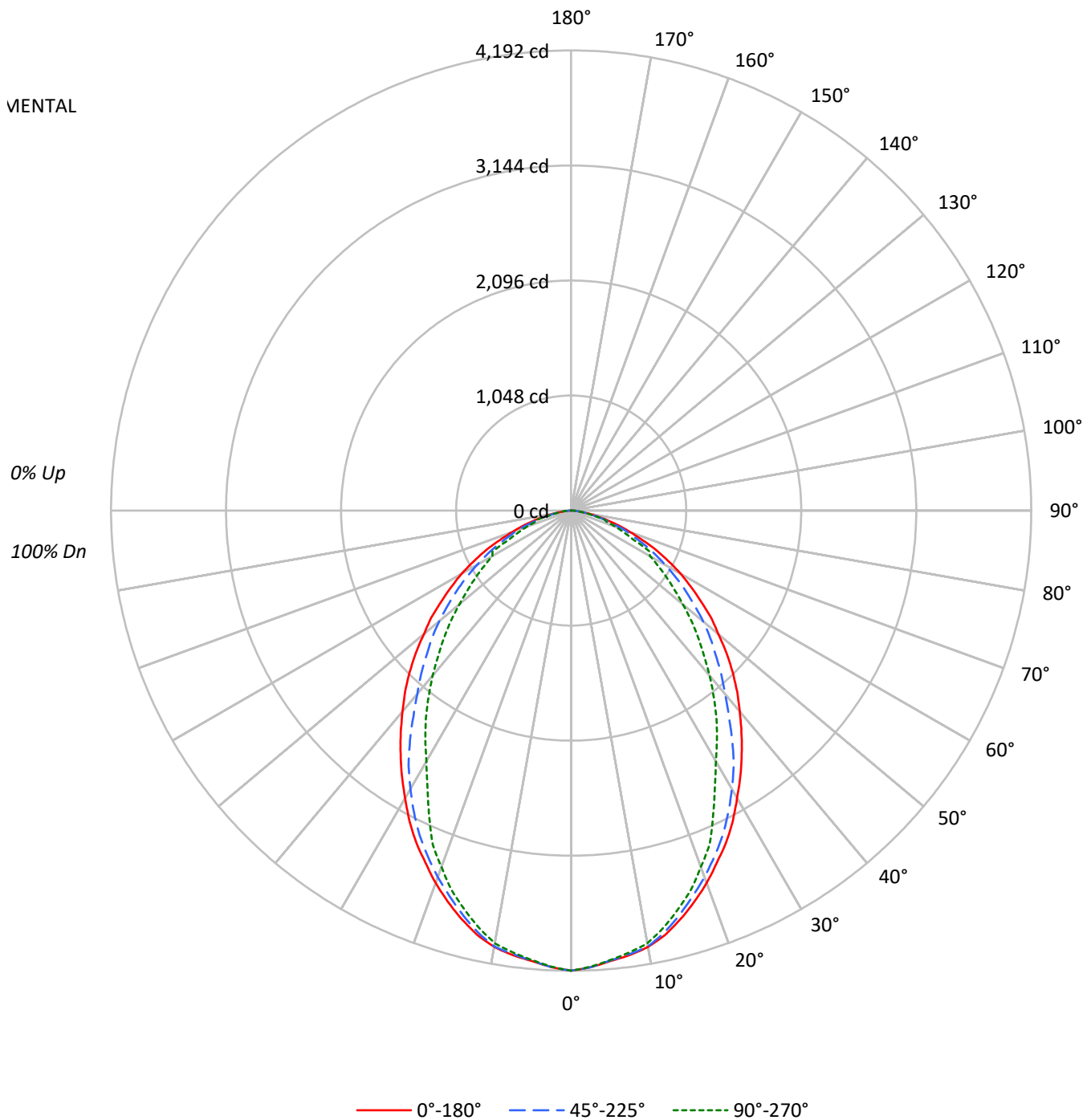
Lumens per Lamp: N/A  
Luminaire Lumens: 8229.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P561393

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-84-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P561393

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-84-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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	11280	11280	11280
5°	11127	11114	11101
10°	11030	11017	10938
15°	10733	10625	10476
20°	10338	10172	9895
25°	9914	9698	9093
30°	9396	9095	8191
35°	8899	8406	7578
40°	8392	7660	6894
45°	7912	7081	6233
50°	7324	6573	5559
55°	6775	5956	4979
60°	6207	5321	4460
65°	5461	4659	3950
70°	4499	4080	3355
75°	3578	3123	3275
80°	2404	2253	2103
85°	1497	1797	2093

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7912 cd/sqm



TEST NUMBER: P561393

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-84-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	390.2	4.7
10°-20°	1070.9	13.0
20°-30°	1482.5	18.0
30°-40°	1580.8	19.2
40°-50°	1442.2	17.5
50°-60°	1129.8	13.7
60°-70°	736.4	8.9
70°-80°	326.2	4.0
80°-90°	70.1	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°	2943.6	35.8
0°-40°	4524.4	55.0
0°-60°	7096.4	86.2
0°-90°	8229.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8229.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4192	4192	4192	4192	4192	
5°	4119	4114	4114	4109	4109	391
15°	3852	3852	3814	3775	3760	1083
25°	3339	3320	3266	3150	3063	1533
35°	2709	2690	2559	2365	2307	1694
45°	2079	2035	1861	1706	1638	1601
55°	1444	1400	1270	1119	1061	1295
65°	858	809	732	746	620	845
75°	344	320	300	286	315	369
85°	48	53	58	63	68	67
90°	0	0	0	0	0	



TEST NUMBER: P561393

CATALOG NUMBER: FSR-12-4-LD4-2HI-40-UNV-80-84-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4191.7	4191.7	4191.7	4191.7	4191.7
2.5°	4162.7	4162.7	4162.7	4157.8	4157.8
5°	4119.1	4114.2	4114.2	4109.4	4109.4
7.5°	4085.1	4080.3	4075.4	4070.6	4060.9
10°	4036.7	4036.7	4031.8	4007.6	4002.8
12.5°	3959.1	3954.3	3934.9	3901.0	3891.3
15°	3852.5	3852.5	3813.8	3775.0	3760.5
17.5°	3736.2	3731.4	3682.9	3644.2	3624.8
20°	3610.2	3600.5	3552.1	3489.1	3455.2
22.5°	3469.7	3469.7	3411.5	3329.2	3295.2
25°	3338.9	3319.5	3266.2	3149.9	3062.6
27.5°	3188.6	3159.6	3101.4	2936.6	2834.9
30°	3023.9	3009.3	2927.0	2713.7	2636.2
32.5°	2868.8	2844.6	2757.3	2534.4	2471.4
35°	2708.9	2689.5	2558.7	2364.8	2306.7
37.5°	2549.0	2524.7	2360.0	2204.9	2132.2
40°	2389.1	2360.0	2180.7	2040.1	1962.6
42.5°	2238.8	2200.1	2025.6	1875.4	1788.2
45°	2078.9	2035.3	1860.8	1705.8	1637.9
47.5°	1919.0	1880.2	1720.3	1560.4	1482.9
50°	1749.4	1715.5	1570.1	1410.2	1327.8
52.5°	1608.9	1555.5	1415.0	1255.1	1187.3
55°	1444.1	1400.5	1269.6	1119.4	1061.3
57.5°	1293.9	1250.3	1129.1	988.6	940.1
60°	1153.3	1090.3	988.6	867.4	828.7
62.5°	998.3	949.8	862.6	760.8	809.3
65°	857.7	809.3	731.7	746.3	620.3
67.5°	702.7	678.4	610.6	542.7	523.4
70°	571.8	542.7	518.5	445.8	426.4
72.5°	455.5	426.4	392.5	353.8	339.2
75°	344.1	319.8	300.4	285.9	315.0
77.5°	237.5	227.8	213.2	198.7	193.8
80°	155.1	150.2	145.4	140.5	135.7
82.5°	92.1	92.1	92.1	92.1	92.1
85°	48.5	53.3	58.2	63.0	67.8
87.5°	29.1	29.1	33.9	38.8	43.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)