

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: P563747

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563747  
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-LD4-4HI-40-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

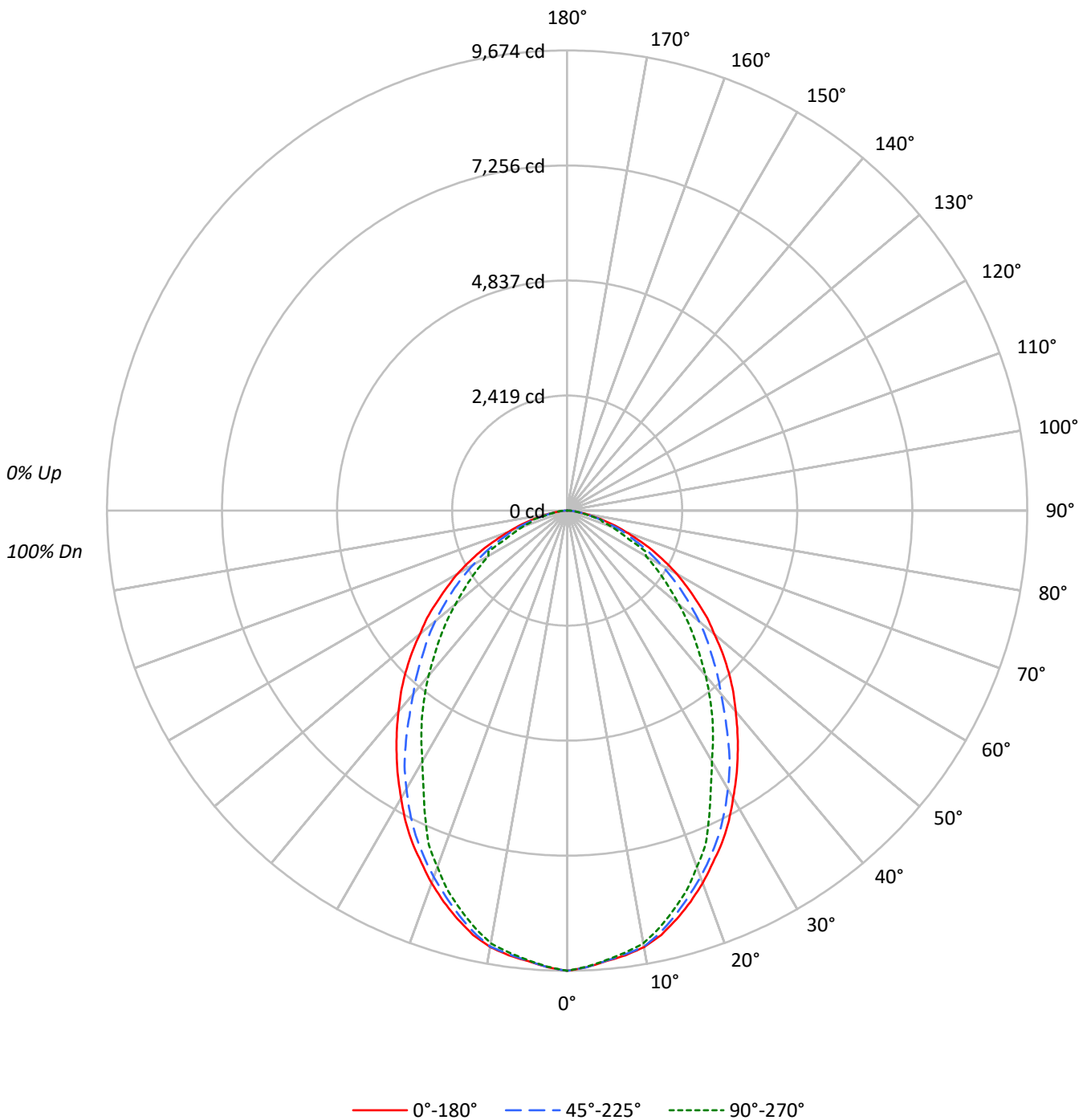
Lumens per Lamp: N/A  
Luminaire Lumens: 18992.0 lumens  
Efficiency: N/A  
Efficacy: 109.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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	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°	13017	13017	13017
5°	12840	12825	12809
10°	12728	12713	12622
15°	12385	12261	12089
20°	11930	11738	11418
25°	11440	11191	10494
30°	10843	10495	9453
35°	10269	9700	8744
40°	9685	8840	7956
45°	9130	8172	7193
50°	8451	7585	6415
55°	7818	6874	5746
60°	7163	6140	5146
65°	6302	5377	4558
70°	5192	4708	3872
75°	4128	3605	3779
80°	2773	2600	2427
85°	1726	2072	2418

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9130 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	900.5	4.7
10°-20°	2471.5	13.0
20°-30°	3421.6	18.0
30°-40°	3648.4	19.2
40°-50°	3328.4	17.5
50°-60°	2607.5	13.7
60°-70°	1699.5	8.9
70°-80°	752.9	4.0
80°-90°	161.7	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°	6793.6	35.8
0°-40°	10442.0	55.0
0°-60°	16378.0	86.2
0°-90°	18992.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	18992.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9674	9674	9674	9674	9674	
5°	9506	9495	9495	9484	9484	902
15°	8891	8891	8802	8712	8679	2500
25°	7706	7661	7538	7270	7068	3538
35°	6252	6207	5905	5458	5324	3909
45°	4798	4697	4295	3937	3780	3696
55°	3333	3232	2930	2584	2449	2989
65°	1980	1868	1689	1722	1432	1951
75°	794	738	693	660	727	851
85°	112	123	134	145	157	155
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9674.3	9674.3	9674.3	9674.3	9674.3
2.5°	9607.2	9607.2	9607.2	9596.0	9596.0
5°	9506.5	9495.3	9495.3	9484.1	9484.1
7.5°	9428.2	9417.0	9405.9	9394.7	9372.3
10°	9316.4	9316.4	9305.2	9249.3	9238.1
12.5°	9137.4	9126.2	9081.5	9003.2	8980.9
15°	8891.4	8891.4	8801.9	8712.4	8678.9
17.5°	8623.0	8611.8	8499.9	8410.5	8365.7
20°	8332.2	8309.8	8198.0	8052.6	7974.3
22.5°	8007.8	8007.8	7873.6	7683.5	7605.2
25°	7705.9	7661.1	7538.1	7269.7	7068.4
27.5°	7359.2	7292.1	7157.8	6777.6	6542.7
30°	6978.9	6945.3	6755.2	6263.1	6084.2
32.5°	6621.0	6565.1	6363.8	5849.3	5703.9
35°	6251.9	6207.2	5905.2	5457.9	5323.6
37.5°	5882.9	5826.9	5446.7	5088.8	4921.0
40°	5513.8	5446.7	5032.9	4708.5	4529.6
42.5°	5167.1	5077.6	4675.0	4328.3	4126.9
45°	4798.0	4697.3	4294.7	3936.8	3780.2
47.5°	4428.9	4339.4	3970.4	3601.3	3422.3
50°	4037.5	3959.2	3623.7	3254.6	3064.5
52.5°	3713.1	3590.1	3265.8	2896.7	2740.1
55°	3332.9	3232.2	2930.2	2583.5	2449.3
57.5°	2986.2	2885.5	2605.9	2281.6	2169.7
60°	2661.8	2516.4	2281.6	2002.0	1912.5
62.5°	2303.9	2192.1	1990.8	1755.9	1867.7
65°	1979.6	1867.7	1688.8	1722.4	1431.6
67.5°	1621.7	1565.8	1409.2	1252.6	1207.9
70°	1319.7	1252.6	1196.7	1028.9	984.2
72.5°	1051.3	984.2	905.9	816.4	782.9
75°	794.1	738.2	693.4	659.9	727.0
77.5°	548.0	525.7	492.1	458.5	447.4
80°	357.9	346.7	335.5	324.3	313.2
82.5°	212.5	212.5	212.5	212.5	212.5
85°	111.8	123.0	134.2	145.4	156.6
87.5°	67.1	67.1	78.3	89.5	100.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)