

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: P561041

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-82-84-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561041
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-LD4-1LO-40-UNV-82-84-EDD
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

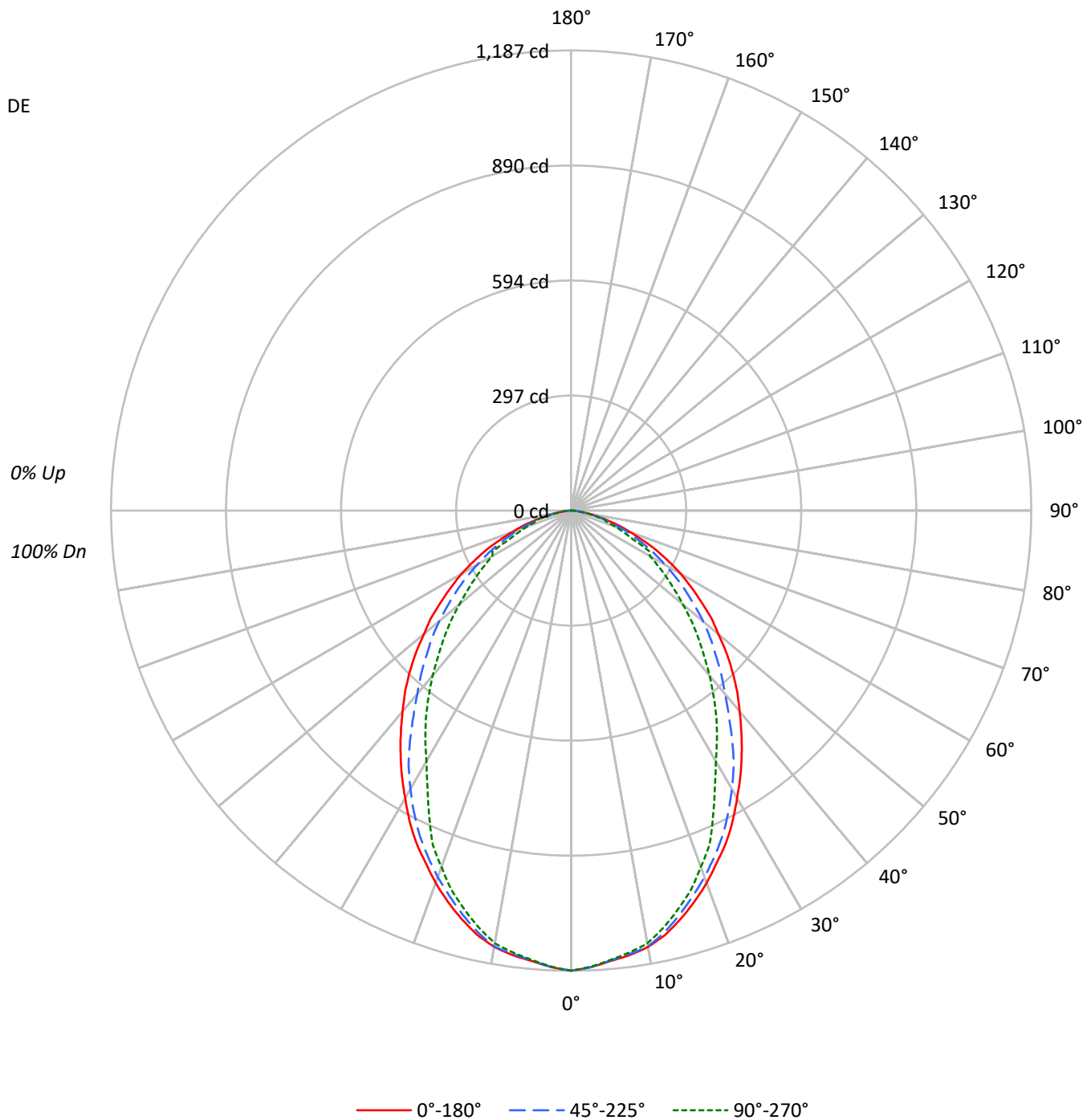
Lumens per Lamp: N/A
Luminaire Lumens: 2330.0 lumens
Efficiency: N/A
Efficacy: 99.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 23.4
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



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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°	3194	3194	3194
5°	3150	3147	3143
10°	3123	3119	3097
15°	3039	3008	2966
20°	2927	2880	2802
25°	2807	2746	2575
30°	2660	2575	2319
35°	2520	2380	2145
40°	2376	2169	1952
45°	2240	2005	1765
50°	2074	1861	1574
55°	1918	1687	1410
60°	1758	1506	1263
65°	1547	1319	1118
70°	1274	1155	950
75°	1013	885	927
80°	680	638	595
85°	423	509	593

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2240 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.5	4.7
10°-20°	303.2	13.0
20°-30°	419.8	18.0
30°-40°	447.6	19.2
40°-50°	408.3	17.5
50°-60°	319.9	13.7
60°-70°	208.5	8.9
70°-80°	92.4	4.0
80°-90°	19.8	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°	833.5	35.8
0°-40°	1281.1	55.0
0°-60°	2009.3	86.2
0°-90°	2330.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2330.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1187	1187	1187	1187	1187	
5°	1166	1165	1165	1164	1164	111
15°	1091	1091	1080	1069	1065	307
25°	945	940	925	892	867	434
35°	767	762	724	670	653	480
45°	589	576	527	483	464	453
55°	409	396	360	317	300	367
65°	243	229	207	211	176	239
75°	97	91	85	81	89	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	<i>1186.9</i>	<i>1186.9</i>	<i>1186.9</i>	<i>1186.9</i>	<i>1186.9</i>
2.5°	<i>1178.6</i>	1178.6	1178.6	1177.3	1177.3
5°	<i>1166.3</i>	1164.9	1164.9	1163.5	1163.5
7.5°	<i>1156.7</i>	1155.3	1153.9	1152.6	1149.8
10°	<i>1143.0</i>	1143.0	1141.6	1134.7	1133.4
12.5°	<i>1121.0</i>	1119.6	1114.1	1104.5	1101.8
15°	<i>1090.8</i>	1090.8	1079.8	1068.9	1064.8
17.5°	<i>1057.9</i>	1056.5	1042.8	1031.8	1026.3
20°	<i>1022.2</i>	1019.5	1005.8	987.9	978.3
22.5°	<i>982.4</i>	982.4	966.0	942.6	933.0
25°	<i>945.4</i>	939.9	924.8	891.9	867.2
27.5°	<i>902.8</i>	894.6	878.1	831.5	802.7
30°	<i>856.2</i>	852.1	828.8	768.4	746.4
32.5°	<i>812.3</i>	805.4	780.7	717.6	699.8
35°	<i>767.0</i>	761.5	724.5	669.6	653.1
37.5°	<i>721.7</i>	714.9	668.2	624.3	603.7
40°	<i>676.4</i>	668.2	617.4	577.7	555.7
42.5°	<i>633.9</i>	622.9	573.5	531.0	506.3
45°	<i>588.6</i>	576.3	526.9	483.0	463.8
47.5°	<i>543.4</i>	532.4	487.1	441.8	419.9
50°	<i>495.3</i>	485.7	444.6	399.3	376.0
52.5°	<i>455.5</i>	440.4	400.7	355.4	336.2
55°	<i>408.9</i>	396.5	359.5	317.0	300.5
57.5°	<i>366.4</i>	354.0	319.7	279.9	266.2
60°	<i>326.6</i>	308.7	279.9	245.6	234.6
62.5°	<i>282.7</i>	268.9	244.2	215.4	229.1
65°	<i>242.9</i>	229.1	207.2	211.3	175.6
67.5°	<i>199.0</i>	192.1	172.9	153.7	148.2
70°	<i>161.9</i>	153.7	146.8	126.2	120.7
72.5°	<i>129.0</i>	120.7	111.1	100.2	96.0
75°	<i>97.4</i>	90.6	85.1	81.0	89.2
77.5°	<i>67.2</i>	64.5	60.4	56.3	54.9
80°	<i>43.9</i>	42.5	41.2	39.8	38.4
82.5°	<i>26.1</i>	26.1	26.1	26.1	26.1
85°	<i>13.7</i>	15.1	16.5	17.8	19.2
87.5°	<i>8.2</i>	8.2	9.6	11.0	12.3
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)