

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: P590417

Luminaire Tested: FSR-24-2-LD4-2STD-50-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590417  
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-50-UNV-93-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

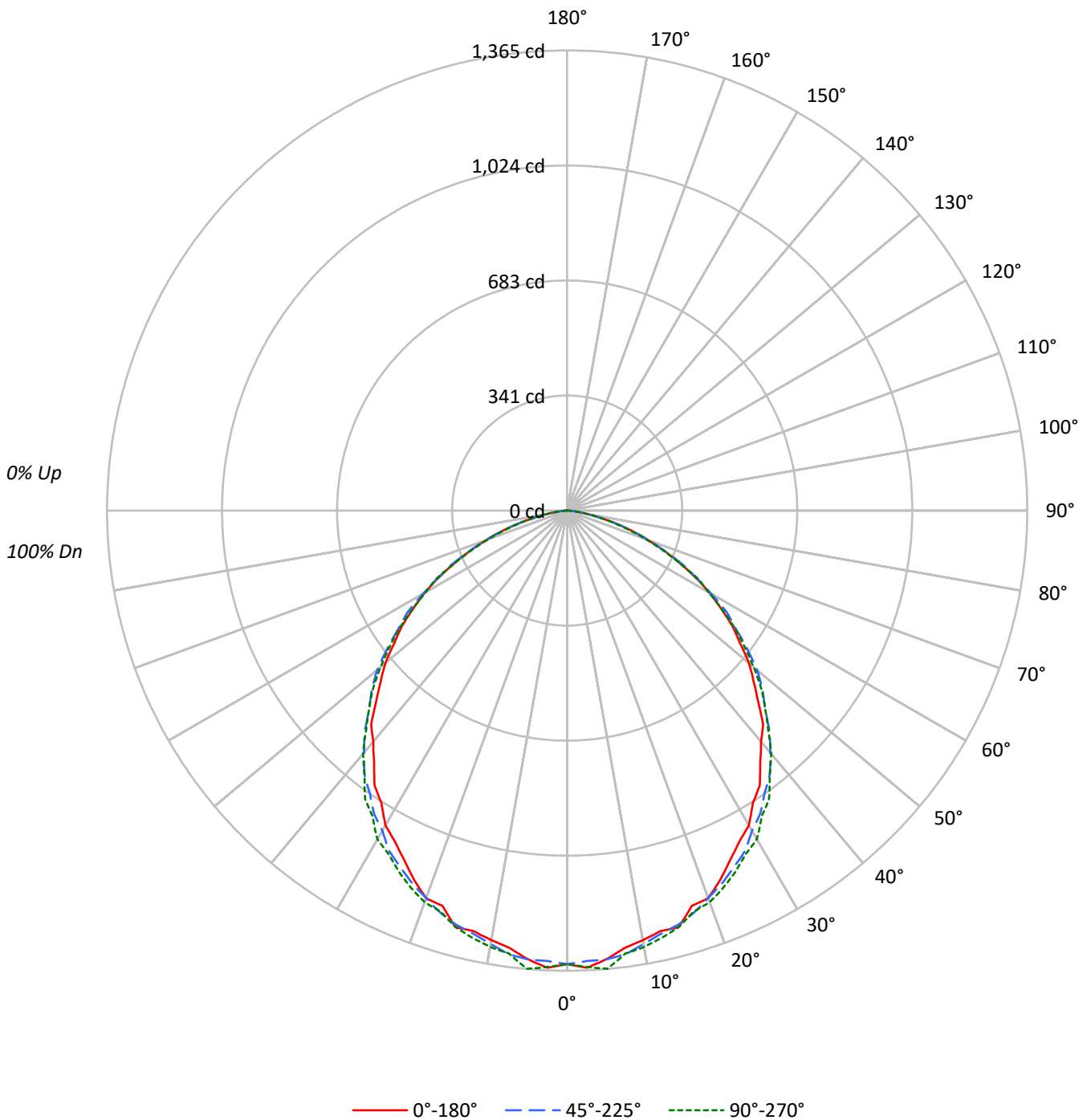
Lumens per Lamp: N/A  
Luminaire Lumens: 3391.0 lumens  
Efficiency: N/A  
Efficacy: 101.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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



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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	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°	3621	3621	3621
5°	3609	3610	3686
10°	3536	3566	3592
15°	3563	3544	3564
20°	3503	3503	3541
25°	3396	3470	3508
30°	3349	3408	3498
35°	3270	3356	3431
40°	3143	3294	3309
45°	3048	3156	3161
50°	2948	3081	3022
55°	2808	2863	2843
60°	2626	2652	2605
65°	2342	2401	2325
70°	2009	2016	1960
75°	1591	1588	1526
80°	1066	1037	996
85°	580	574	537

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3237 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.6	3.7
10°-20°	358.7	10.6
20°-30°	537.4	15.8
30°-40°	636.9	18.8
40°-50°	638.1	18.8
50°-60°	541.6	16.0
60°-70°	365.2	10.8
70°-80°	160.5	4.7
80°-90°	26.1	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°	1022.6	30.2
0°-40°	1659.6	48.9
0°-60°	2839.3	83.7
0°-90°	3391.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3391.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1346	1346	1346	1346	1346	
5°	1336	1333	1336	1332	1365	126
15°	1279	1264	1272	1279	1279	356
25°	1144	1150	1169	1184	1182	529
35°	995	998	1022	1045	1044	618
45°	801	816	829	851	831	620
55°	599	595	610	606	606	533
65°	368	363	377	363	365	366
75°	153	150	153	142	147	164
85°	19	18	19	18	17	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1345.5	1345.5	1345.5	1345.5	1345.5
2.5°	1357.1	1346.9	1337.3	1348.4	1355.2
5°	1335.9	1332.8	1336.4	1332.4	1364.6
7.5°	1308.5	1320.4	1327.4	1323.1	1325.0
10°	1293.9	1289.7	1305.2	1315.9	1314.4
12.5°	1278.2	1284.5	1285.4	1297.0	1298.0
15°	1279.1	1264.3	1272.2	1278.8	1279.3
17.5°	1229.4	1245.4	1250.8	1265.9	1247.1
20°	1223.3	1211.7	1223.3	1238.8	1236.4
22.5°	1186.0	1173.0	1198.0	1211.7	1210.8
25°	1143.6	1149.9	1168.6	1183.9	1181.5
27.5°	1106.4	1113.7	1140.5	1161.5	1147.9
30°	1077.8	1074.1	1096.7	1115.5	1125.9
32.5°	1026.5	1039.7	1066.1	1084.7	1074.8
35°	995.4	998.4	1021.5	1045.1	1044.4
37.5°	941.0	954.8	987.3	993.9	987.8
40°	894.7	908.4	937.7	944.9	941.9
42.5°	860.4	862.9	888.1	896.2	883.2
45°	800.9	815.8	829.3	850.7	830.6
47.5°	750.1	757.1	786.3	792.0	781.4
50°	704.1	706.5	735.9	728.8	721.8
52.5°	646.2	656.5	673.0	671.6	663.4
55°	598.6	594.6	610.3	606.1	605.9
57.5°	541.5	548.4	561.3	554.7	544.1
60°	488.0	488.2	492.8	485.4	484.0
62.5°	428.4	430.5	431.5	422.3	437.3
65°	367.8	362.9	377.1	362.7	365.2
67.5°	312.0	314.4	313.0	304.0	307.5
70°	255.4	258.5	256.2	246.0	249.1
72.5°	203.6	199.8	202.2	189.4	195.3
75°	153.0	149.9	152.7	141.9	146.8
77.5°	104.2	106.7	104.9	99.2	102.5
80°	68.8	66.9	66.9	63.6	64.3
82.5°	40.1	38.2	37.7	36.7	38.2
85°	18.8	18.2	18.6	18.1	17.4
87.5°	6.8	6.9	6.9	6.6	6.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)