

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: P561059

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561059  
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-93-85-EDD  
Description: 1X4 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**

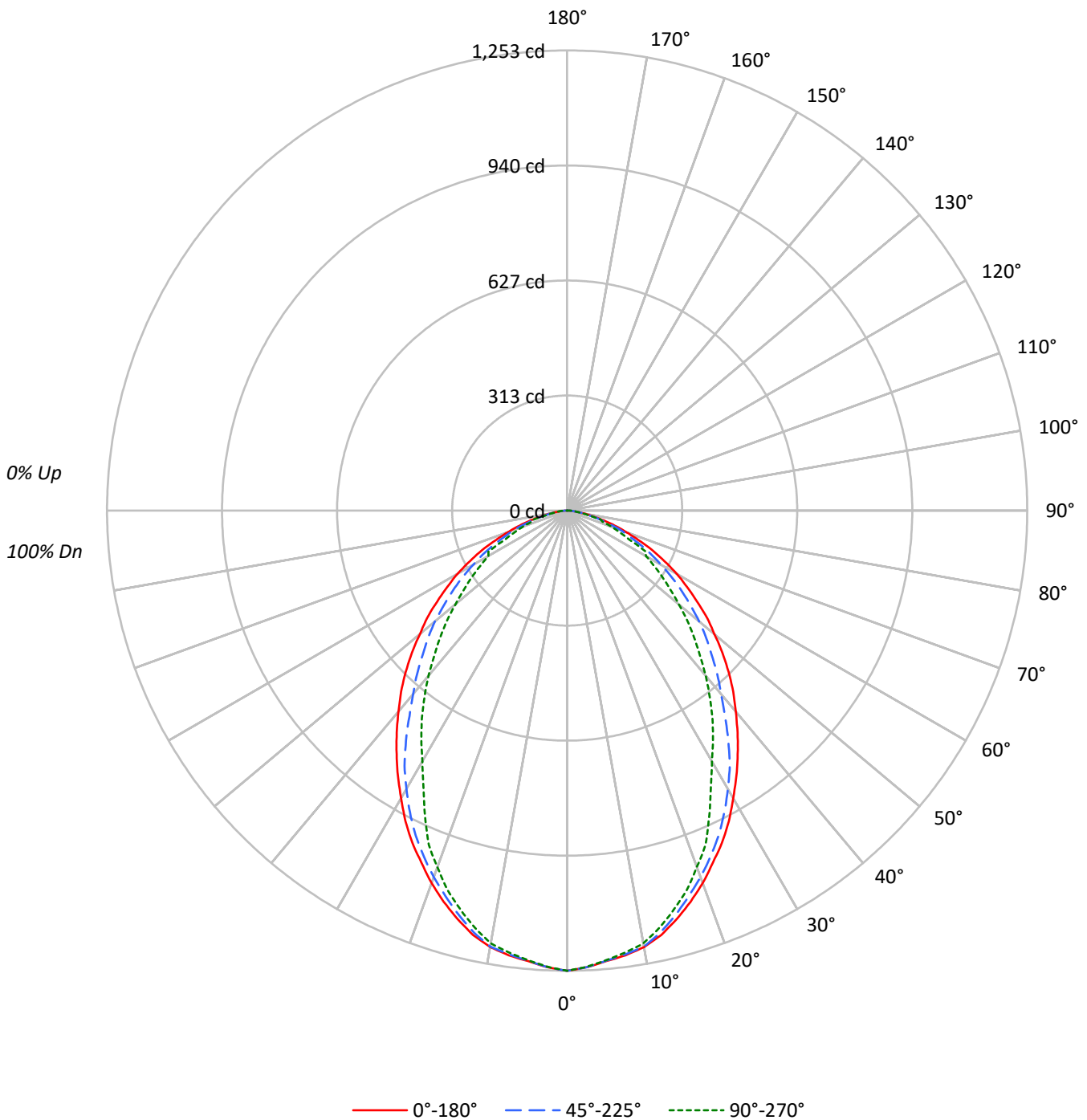
Lumens per Lamp: N/A  
Luminaire Lumens: 2460.0 lumens  
Efficiency: N/A  
Efficacy: 105.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3372	3372	3372
5°	3326	3322	3318
10°	3297	3293	3270
15°	3209	3176	3132
20°	3091	3041	2958
25°	2964	2899	2719
30°	2809	2719	2449
35°	2660	2513	2265
40°	2509	2290	2061
45°	2365	2117	1863
50°	2189	1965	1662
55°	2025	1780	1489
60°	1856	1590	1333
65°	1633	1393	1181
70°	1345	1220	1003
75°	1070	934	979
80°	719	674	629
85°	448	537	627

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2365 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.6	4.7
10°-20°	320.1	13.0
20°-30°	443.2	18.0
30°-40°	472.6	19.2
40°-50°	431.1	17.5
50°-60°	337.7	13.7
60°-70°	220.1	8.9
70°-80°	97.5	4.0
80°-90°	20.9	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°	880.0	35.8
0°-40°	1352.5	55.0
0°-60°	2121.4	86.2
0°-90°	2460.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2460.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1253	1253	1253	1253	1253	
5°	1231	1230	1230	1228	1228	117
15°	1152	1152	1140	1128	1124	324
25°	998	992	976	942	916	458
35°	810	804	765	707	690	506
45°	622	608	556	510	490	479
55°	432	419	380	335	317	387
65°	256	242	219	223	185	253
75°	103	96	90	86	94	110
85°	14	16	17	19	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1253.1	1253.1	1253.1	1253.1	1253.1
2.5°	1244.4	1244.4	1244.4	1243.0	1243.0
5°	1231.4	1229.9	1229.9	1228.5	1228.5
7.5°	1221.2	1219.8	1218.3	1216.9	1214.0
10°	1206.7	1206.7	1205.3	1198.0	1196.6
12.5°	1183.6	1182.1	1176.3	1166.2	1163.3
15°	1151.7	1151.7	1140.1	1128.5	1124.2
17.5°	1116.9	1115.5	1101.0	1089.4	1083.6
20°	1079.3	1076.4	1061.9	1043.0	1032.9
22.5°	1037.2	1037.2	1019.9	995.2	985.1
25°	998.1	992.3	976.4	941.6	915.6
27.5°	953.2	944.5	927.1	877.9	847.5
30°	904.0	899.6	875.0	811.2	788.1
32.5°	857.6	850.4	824.3	757.6	738.8
35°	809.8	804.0	764.9	706.9	689.6
37.5°	762.0	754.8	705.5	659.1	637.4
40°	714.2	705.5	651.9	609.9	586.7
42.5°	669.3	657.7	605.5	560.6	534.6
45°	621.5	608.4	556.3	509.9	489.6
47.5°	573.7	562.1	514.3	466.5	443.3
50°	523.0	512.8	469.4	421.6	396.9
52.5°	481.0	465.0	423.0	375.2	354.9
55°	431.7	418.7	379.5	334.6	317.3
57.5°	386.8	373.8	337.5	295.5	281.0
60°	344.8	325.9	295.5	259.3	247.7
62.5°	298.4	283.9	257.9	227.4	241.9
65°	256.4	241.9	218.7	223.1	185.4
67.5°	210.1	202.8	182.5	162.2	156.5
70°	170.9	162.2	155.0	133.3	127.5
72.5°	136.2	127.5	117.3	105.8	101.4
75°	102.9	95.6	89.8	85.5	94.2
77.5°	71.0	68.1	63.7	59.4	57.9
80°	46.4	44.9	43.5	42.0	40.6
82.5°	27.5	27.5	27.5	27.5	27.5
85°	14.5	15.9	17.4	18.8	20.3
87.5°	8.7	8.7	10.1	11.6	13.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)