

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P309756

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-HRP-CP187-W2A-U-4500K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

**Test Information**

Test Method: LM-79-08  
Report Number: P309756  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24FCZ2-70HE-UNV-L82765-HRP-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 4500K TUNABLE CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER  
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4649.0 lumens  
Efficiency: N/A  
Efficacy: 79.1 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

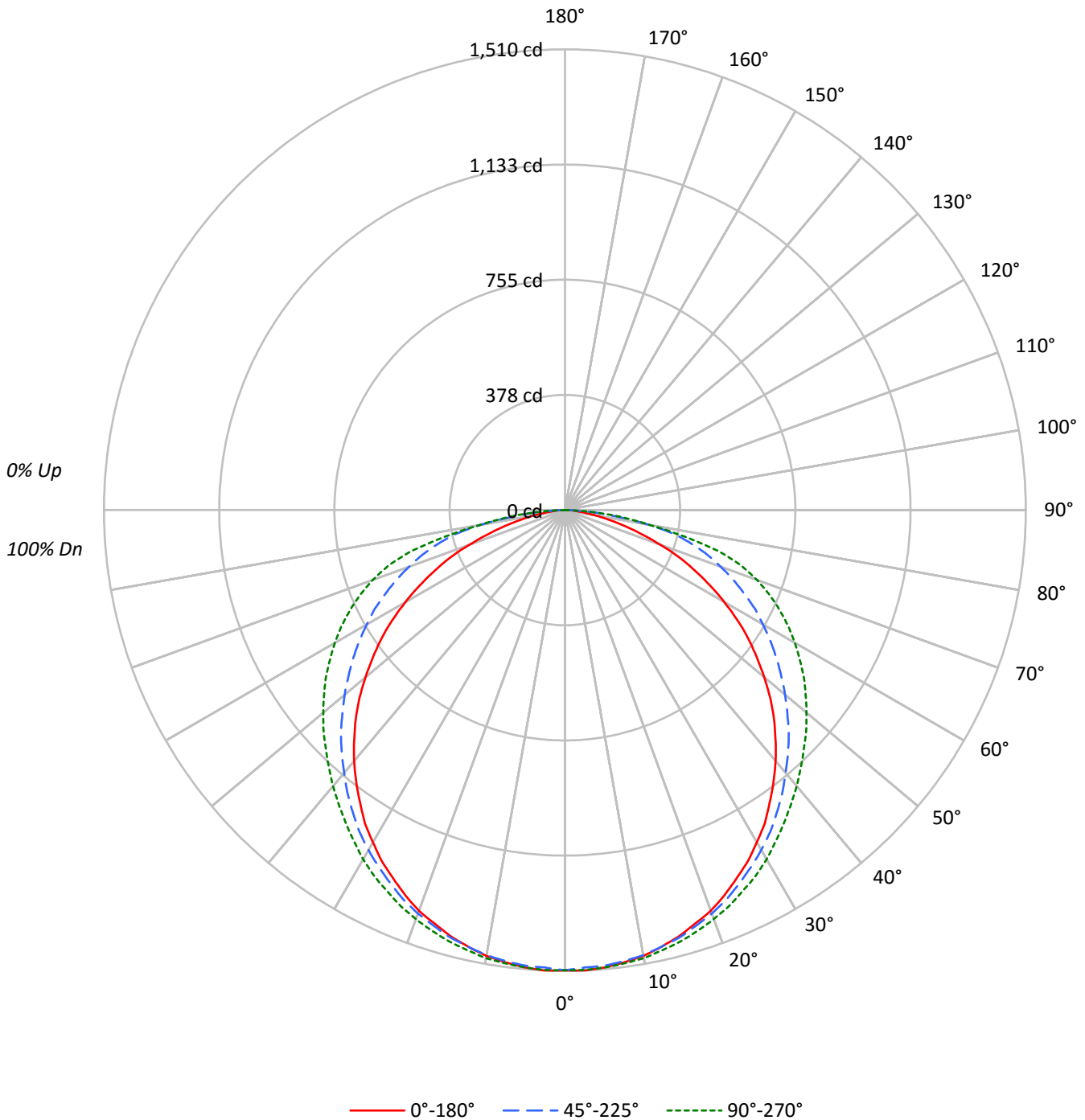
Input Watts (W): 58.8  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	100	100	100		
	1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82	82	82	82	82	82		
	2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67	67	67	67	67	67		
	3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48	48	48	48	48	48		
	5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23	23	23	23	23	23		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2030	2030	2030
5°	2032	2024	2032
10°	2026	2024	2037
15°	2014	2020	2039
20°	2001	2015	2043
25°	1976	2005	2046
30°	1953	1999	2053
35°	1921	1988	2056
40°	1887	1976	2075
45°	1844	1974	2107
50°	1784	1972	2163
55°	1721	1986	2242
60°	1623	2016	2341
65°	1500	2063	2472
70°	1309	2136	2634
75°	1063	2246	2722
80°	784	2202	2202
85°	601	1623	1832



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.9	3.1
10°-20°	410.3	8.8
20°-30°	624.7	13.4
30°-40°	758.5	16.3
40°-50°	801.4	17.2
50°-60°	756.1	16.3
60°-70°	628.7	13.5
70°-80°	413.6	8.9
80°-90°	112.8	2.4
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°	1177.9	25.3
0°-40°	1936.4	41.7
0°-60°	3493.9	75.2
0°-90°	4649.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4649.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1508	1508	1508	1508	1508	
5°	1504	1504	1499	1504	1504	143
15°	1446	1448	1450	1464	1464	408
25°	1331	1339	1351	1374	1378	614
35°	1170	1183	1211	1242	1252	732
45°	969	989	1037	1088	1107	746
55°	734	765	847	926	956	654
65°	471	526	648	744	777	466
75°	204	298	432	512	524	220
85°	39	86	105	117	119	48
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1508.4	1508.4	1508.4	1508.4	1508.4
2.5°	1510.3	1508.4	1500.6	1508.4	1508.4
5°	1504.5	1504.5	1498.6	1504.5	1504.5
7.5°	1494.7	1494.7	1490.9	1498.6	1498.6
10°	1483.1	1483.1	1481.1	1490.9	1490.9
12.5°	1465.6	1467.5	1465.6	1477.2	1477.2
15°	1446.1	1448.0	1450.0	1463.6	1463.6
17.5°	1420.8	1424.7	1428.6	1444.1	1446.1
20°	1397.4	1399.4	1407.2	1424.7	1426.6
22.5°	1366.3	1372.1	1381.9	1399.4	1405.2
25°	1331.3	1339.0	1350.7	1374.1	1378.0
27.5°	1298.2	1304.0	1319.6	1344.9	1352.7
30°	1257.3	1267.0	1286.5	1311.8	1321.5
32.5°	1218.4	1228.1	1251.5	1278.7	1286.5
35°	1169.7	1183.3	1210.6	1241.7	1251.5
37.5°	1123.0	1136.6	1169.7	1204.8	1216.4
40°	1074.3	1089.9	1125.0	1165.8	1181.4
42.5°	1021.8	1043.2	1082.1	1126.9	1144.4
45°	969.3	988.7	1037.4	1088.0	1107.4
47.5°	912.8	936.2	988.7	1049.0	1072.4
50°	852.5	881.7	942.0	1008.2	1033.5
52.5°	792.1	825.2	893.3	967.3	994.6
55°	733.7	764.9	846.6	926.4	955.6
57.5°	669.5	708.4	798.0	883.6	912.8
60°	603.3	646.2	749.3	838.8	870.0
62.5°	537.2	585.8	702.6	792.1	825.2
65°	471.0	525.5	648.1	743.5	776.6
67.5°	406.8	467.1	597.5	692.9	726.0
70°	332.8	408.7	543.0	636.4	669.5
72.5°	264.7	352.3	490.5	578.0	607.2
75°	204.4	297.8	432.1	511.9	523.6
77.5°	149.9	243.3	371.7	399.0	400.9
80°	101.2	194.6	284.2	280.3	284.2
82.5°	66.2	146.0	179.1	200.5	202.4
85°	38.9	85.6	105.1	116.8	118.7
87.5°	19.5	29.2	37.0	38.9	42.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)