

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: P311691

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-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: P311691
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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: 5509.0 lumens
Efficiency: N/A
Efficacy: 113.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

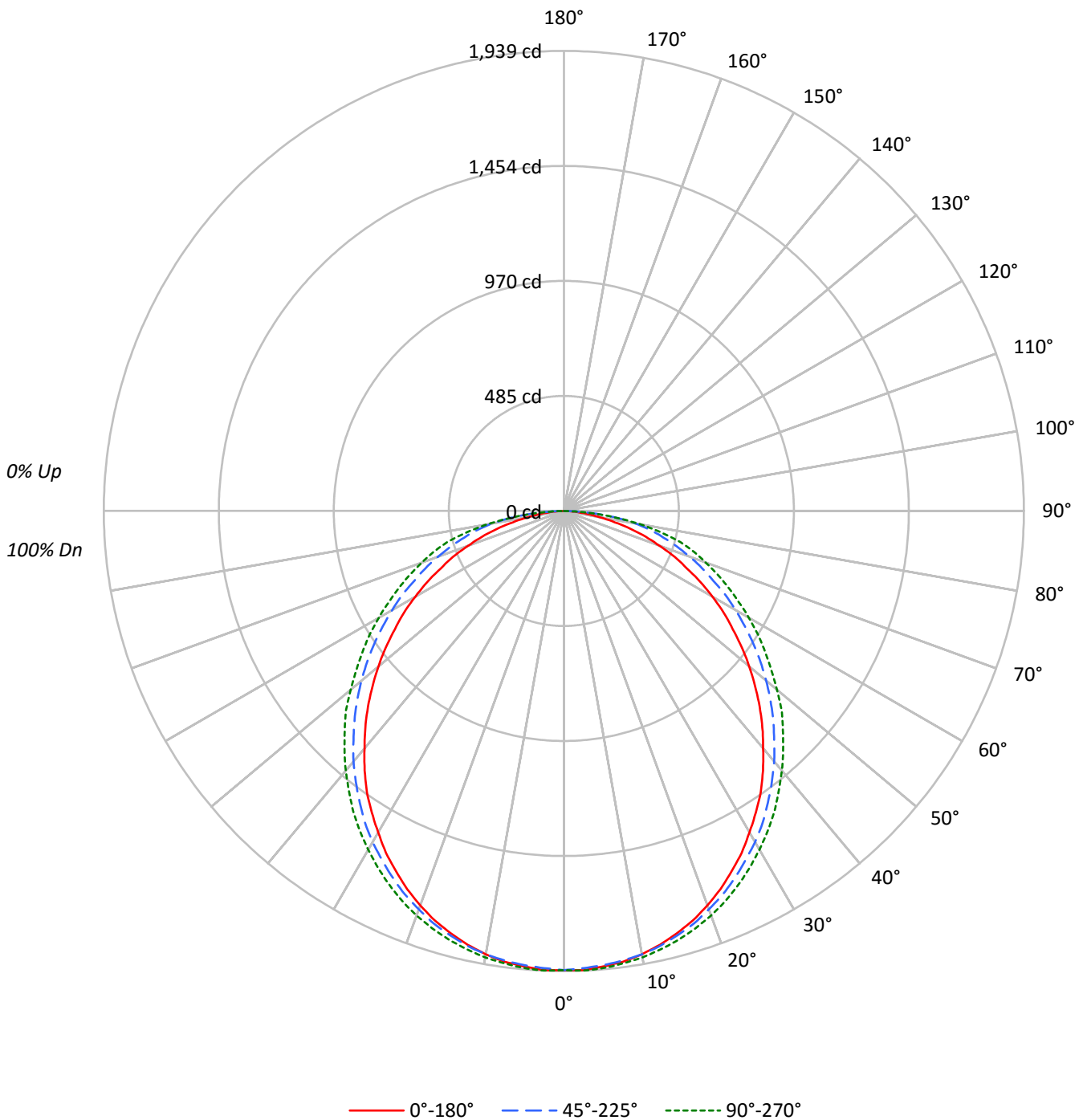
Input Watts (W): 48.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2604	2604	2604
5°	2602	2595	2612
10°	2592	2592	2611
15°	2567	2579	2606
20°	2533	2558	2598
25°	2486	2533	2582
30°	2431	2504	2561
35°	2377	2463	2541
40°	2296	2422	2511
45°	2221	2374	2484
50°	2135	2330	2454
55°	2040	2286	2430
60°	1945	2251	2425
65°	1822	2212	2440
70°	1686	2223	2506
75°	1510	2265	2647
80°	1220	2400	2590
85°	919	2107	2053



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.2	3.3
10°-20°	523.5	9.5
20°-30°	787.0	14.3
30°-40°	937.4	17.0
40°-50°	959.4	17.4
50°-60°	863.7	15.7
60°-70°	678.3	12.3
70°-80°	440.2	8.0
80°-90°	136.1	2.5
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°	1493.7	27.1
0°-40°	2431.1	44.1
0°-60°	4254.3	77.2
0°-90°	5509.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5509.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1935	1935	1935	1935	1935	
5°	1927	1930	1921	1932	1934	183
15°	1843	1848	1851	1867	1871	520
25°	1675	1689	1706	1734	1739	771
35°	1447	1465	1500	1536	1547	903
45°	1167	1195	1248	1295	1305	900
55°	870	908	975	1025	1036	780
65°	572	616	695	752	766	570
75°	290	346	436	495	509	307
85°	60	110	136	133	133	72
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1935.3	1935.3	1935.3	1935.3	1935.3
2.5°	1937.1	1937.1	1928.3	1937.1	1938.8
5°	1926.6	1930.1	1921.3	1931.8	1933.6
7.5°	1916.1	1916.1	1910.8	1921.3	1923.1
10°	1896.9	1898.6	1896.9	1909.1	1910.8
12.5°	1872.4	1875.9	1877.6	1889.9	1891.6
15°	1842.6	1847.9	1851.4	1867.1	1870.6
17.5°	1809.4	1814.6	1823.4	1840.9	1844.4
20°	1769.1	1776.1	1786.6	1809.4	1814.6
22.5°	1725.4	1732.4	1749.9	1770.9	1779.6
25°	1674.6	1688.6	1706.1	1734.1	1739.4
27.5°	1623.9	1636.1	1658.9	1688.6	1695.6
30°	1564.4	1583.6	1611.6	1641.4	1648.4
32.5°	1506.6	1525.9	1559.1	1590.6	1599.4
35°	1447.1	1464.6	1499.6	1536.4	1546.9
37.5°	1378.9	1401.6	1440.1	1476.9	1487.4
40°	1307.1	1335.1	1378.9	1417.4	1429.6
42.5°	1238.9	1268.7	1312.4	1354.4	1368.4
45°	1167.2	1195.2	1247.7	1294.9	1305.4
47.5°	1093.7	1125.2	1181.2	1228.4	1245.9
50°	1020.2	1053.4	1112.9	1161.9	1172.4
52.5°	946.7	981.7	1044.7	1097.2	1102.4
55°	869.7	908.2	974.7	1025.4	1035.9
57.5°	799.7	832.9	904.7	957.2	969.4
60°	722.7	759.4	836.4	885.4	901.2
62.5°	649.2	687.7	768.2	817.2	831.2
65°	572.2	616.0	694.7	752.4	766.4
67.5°	505.7	547.7	631.7	687.7	701.7
70°	428.7	476.0	565.2	623.0	636.9
72.5°	362.2	411.2	500.5	556.5	577.5
75°	290.5	346.5	435.7	495.2	509.2
77.5°	220.5	285.2	376.2	421.7	421.7
80°	157.5	225.7	309.7	330.7	334.2
82.5°	103.2	169.7	229.2	227.5	227.5
85°	59.5	110.2	136.5	133.0	133.0
87.5°	22.7	45.5	49.0	49.0	47.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)