

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: P311060

Luminaire Tested: **24FCZ2-65HE-UNV-L82765-CP187-W2A-U-4000K**

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: P311060
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-65HE-UNV-L82765-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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: 5581.0 lumens
Efficiency: N/A
Efficacy: 104.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

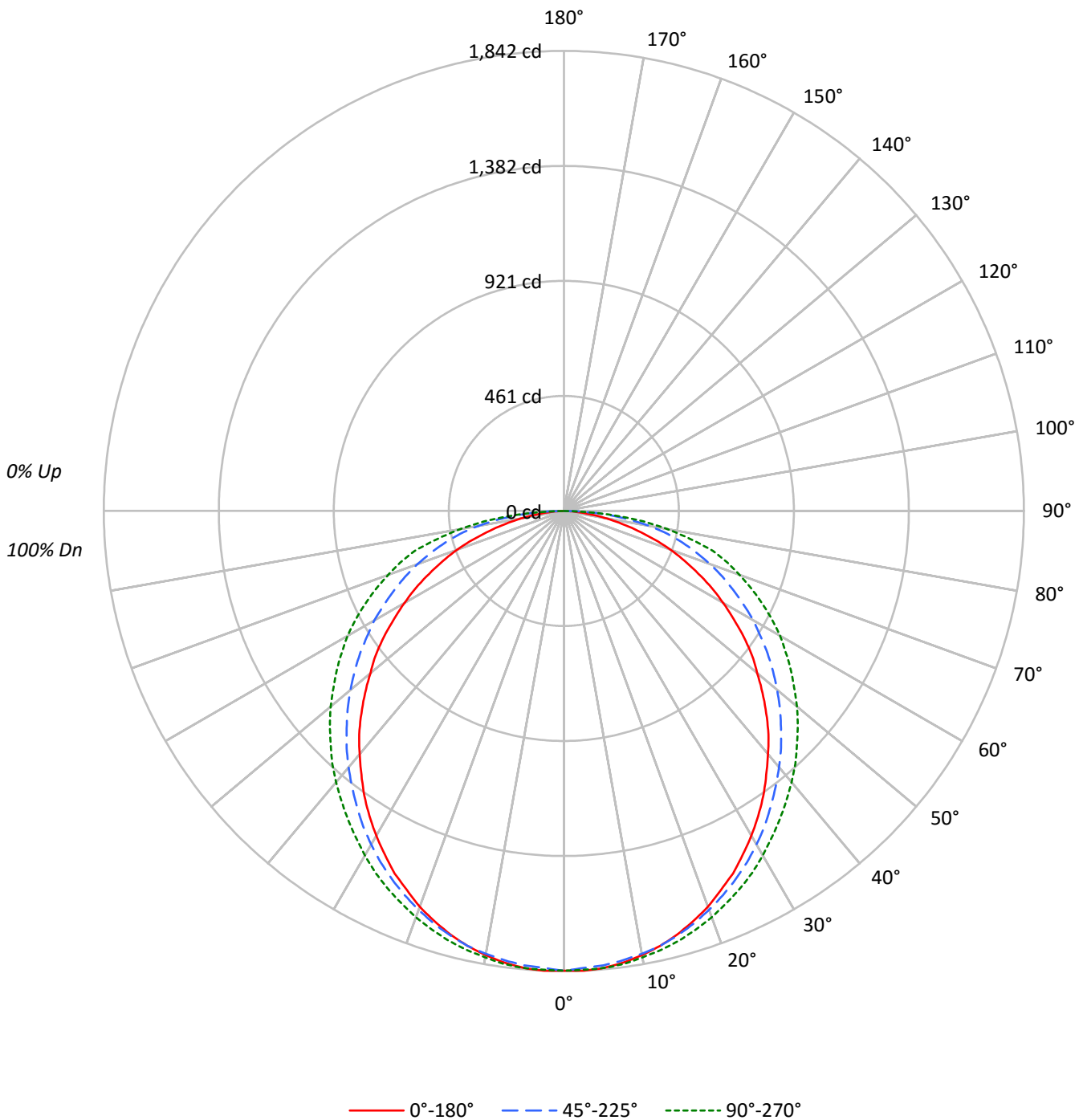
Input Watts (W): 53.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2477	2477	2477
5°	2481	2466	2481
10°	2467	2459	2479
15°	2445	2450	2481
20°	2415	2434	2479
25°	2378	2416	2477
30°	2333	2396	2474
35°	2287	2372	2476
40°	2234	2355	2491
45°	2181	2340	2512
50°	2116	2333	2550
55°	2063	2337	2602
60°	1983	2357	2691
65°	1892	2382	2788
70°	1792	2455	2943
75°	1598	2560	3215
80°	1363	2712	3285
85°	973	2688	3145



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.2	3.1
10°-20°	498.1	8.9
20°-30°	752.3	13.5
30°-40°	906.7	16.2
40°-50°	951.9	17.1
50°-60°	890.5	16.0
60°-70°	735.4	13.2
70°-80°	501.1	9.0
80°-90°	170.9	3.1
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°	1424.5	25.5
0°-40°	2331.2	41.8
0°-60°	4173.6	74.8
0°-90°	5581.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5581.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1841	1841	1841	1841	1841	
5°	1837	1835	1826	1837	1837	174
15°	1755	1757	1759	1778	1781	495
25°	1602	1609	1628	1659	1668	737
35°	1392	1407	1444	1492	1507	870
45°	1146	1170	1230	1296	1320	884
55°	880	915	996	1078	1109	785
65°	594	644	748	842	876	590
75°	307	378	492	585	618	328
85°	63	124	174	196	204	79
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1840.6	1840.6	1840.6	1840.6	1840.6
2.5°	1842.4	1840.6	1831.3	1840.6	1838.7
5°	1836.9	1835.0	1825.8	1836.9	1836.9
7.5°	1823.9	1823.9	1814.6	1827.6	1829.5
10°	1805.4	1805.4	1799.8	1814.6	1814.6
12.5°	1783.2	1783.2	1783.2	1798.0	1799.8
15°	1755.4	1757.2	1759.1	1777.6	1781.3
17.5°	1722.1	1725.8	1731.3	1753.5	1757.2
20°	1686.9	1690.6	1699.8	1725.8	1731.3
22.5°	1642.4	1651.7	1664.7	1694.3	1699.8
25°	1601.7	1609.1	1627.6	1659.1	1668.4
27.5°	1551.7	1562.8	1586.9	1620.2	1633.2
30°	1501.7	1512.8	1542.4	1581.3	1592.4
32.5°	1448.0	1464.7	1496.2	1536.9	1549.9
35°	1392.5	1407.3	1444.3	1492.5	1507.3
37.5°	1331.4	1351.7	1392.5	1444.3	1462.8
40°	1272.1	1294.3	1340.6	1396.2	1418.4
42.5°	1212.8	1235.1	1286.9	1349.9	1372.1
45°	1146.2	1170.3	1229.5	1296.2	1320.2
47.5°	1079.5	1109.2	1174.0	1244.3	1270.2
50°	1011.0	1044.3	1114.7	1188.8	1218.4
52.5°	949.9	981.4	1055.5	1135.1	1162.9
55°	879.5	914.7	996.2	1077.7	1109.2
57.5°	807.3	846.2	933.2	1022.1	1053.6
60°	737.0	779.6	875.8	964.7	999.9
62.5°	668.5	711.0	811.0	903.6	938.8
65°	594.4	644.4	748.1	842.5	875.8
67.5°	524.0	577.7	687.0	779.6	812.9
70°	455.5	507.4	624.0	714.7	748.1
72.5°	381.4	440.7	557.4	651.8	687.0
75°	307.4	377.7	492.5	585.1	618.5
77.5°	238.9	311.1	425.9	501.8	518.5
80°	175.9	250.0	350.0	403.7	424.0
82.5°	113.0	187.0	266.6	305.5	322.2
85°	63.0	124.1	174.1	196.3	203.7
87.5°	25.9	53.7	70.4	79.6	79.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)