

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: P311061

Luminaire Tested: **24FCZ2-65HE-UNV-L82765-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: P311061
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-4500K
Description: 2'X4' TROFFER LED MODULE, RIBBED 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: 5681.0 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

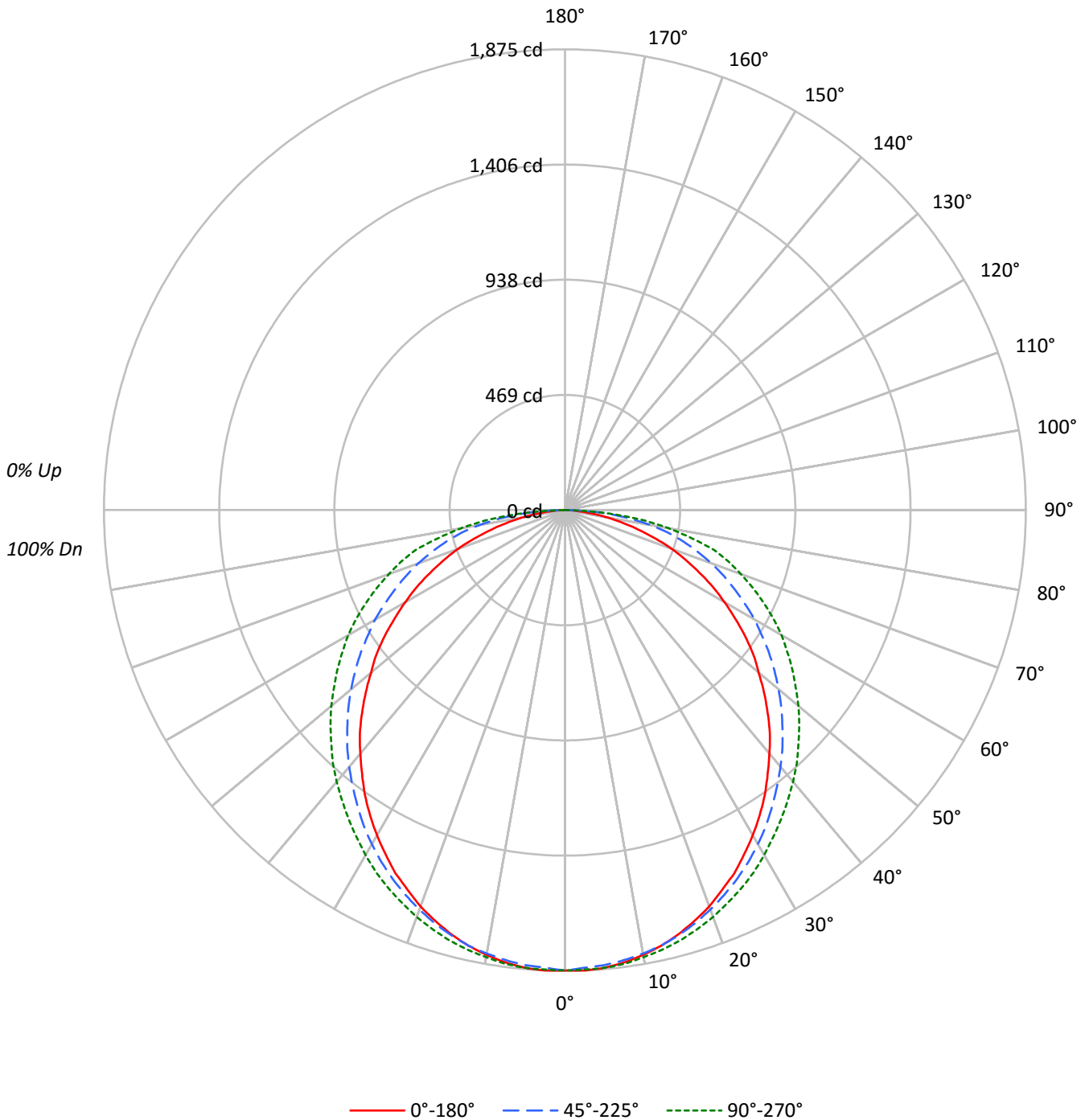
Input Watts (W): 53.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2521	2521	2521
5°	2525	2510	2525
10°	2511	2503	2524
15°	2489	2494	2526
20°	2459	2478	2523
25°	2420	2460	2521
30°	2375	2439	2518
35°	2328	2415	2520
40°	2274	2397	2536
45°	2220	2381	2557
50°	2154	2375	2596
55°	2100	2379	2648
60°	2019	2399	2739
65°	1926	2424	2838
70°	1824	2499	2996
75°	1627	2607	3273
80°	1388	2760	3344
85°	990	2736	3200



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.3	3.1
10°-20°	507.0	8.9
20°-30°	765.8	13.5
30°-40°	922.9	16.2
40°-50°	968.9	17.1
50°-60°	906.5	16.0
60°-70°	748.6	13.2
70°-80°	510.1	9.0
80°-90°	174.0	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°	1450.1	25.5
0°-40°	2373.0	41.8
0°-60°	4248.4	74.8
0°-90°	5681.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5681.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1874	1874	1874	1874	1874	
5°	1870	1868	1858	1870	1870	177
15°	1787	1789	1791	1810	1813	504
25°	1630	1638	1657	1689	1698	750
35°	1417	1432	1470	1519	1534	886
45°	1167	1191	1252	1319	1344	900
55°	895	931	1014	1097	1129	799
65°	605	656	762	858	892	600
75°	313	384	501	596	630	334
85°	64	126	177	200	207	80
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1873.5	1873.5	1873.5	1873.5	1873.5
2.5°	1875.4	1873.5	1864.1	1873.5	1871.7
5°	1869.8	1867.9	1858.5	1869.8	1869.8
7.5°	1856.6	1856.6	1847.2	1860.4	1862.2
10°	1837.7	1837.7	1832.1	1847.2	1847.2
12.5°	1815.1	1815.1	1815.1	1830.2	1832.1
15°	1786.8	1788.7	1790.6	1809.5	1813.2
17.5°	1752.9	1756.7	1762.3	1785.0	1788.7
20°	1717.1	1720.9	1730.3	1756.7	1762.3
22.5°	1671.9	1681.3	1694.5	1724.6	1730.3
25°	1630.4	1637.9	1656.8	1688.8	1698.3
27.5°	1579.5	1590.8	1615.3	1649.2	1662.4
30°	1528.6	1539.9	1570.1	1609.7	1621.0
32.5°	1474.0	1490.9	1523.0	1564.4	1577.6
35°	1417.4	1432.5	1470.2	1519.2	1534.3
37.5°	1355.2	1375.9	1417.4	1470.2	1489.0
40°	1294.9	1317.5	1364.6	1421.2	1443.8
42.5°	1234.6	1257.2	1310.0	1374.1	1396.7
45°	1166.7	1191.2	1251.5	1319.4	1343.9
47.5°	1098.9	1129.0	1195.0	1266.6	1293.0
50°	1029.1	1063.1	1134.7	1210.1	1240.2
52.5°	966.9	999.0	1074.4	1155.4	1183.7
55°	895.3	931.1	1014.1	1097.0	1129.0
57.5°	821.8	861.4	950.0	1040.4	1072.5
60°	750.2	793.5	891.5	982.0	1017.8
62.5°	680.4	723.8	825.6	919.8	955.6
65°	605.0	655.9	761.5	857.6	891.5
67.5°	533.4	588.1	699.3	793.5	827.5
70°	463.7	516.4	635.2	727.6	761.5
72.5°	388.3	448.6	567.3	663.5	699.3
75°	312.9	384.5	501.4	595.6	629.5
77.5°	243.1	316.7	433.5	510.8	527.8
80°	179.1	254.5	356.2	410.9	431.6
82.5°	115.0	190.4	271.4	311.0	328.0
85°	64.1	126.3	177.2	199.8	207.3
87.5°	26.4	54.7	71.6	81.0	81.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)