

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: P311034

Luminaire Tested: **24FCZ2-65HE-UNV-L82765-CA08-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: P311034
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-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC 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: 6071.0 lumens
Efficiency: N/A
Efficacy: 113.3 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

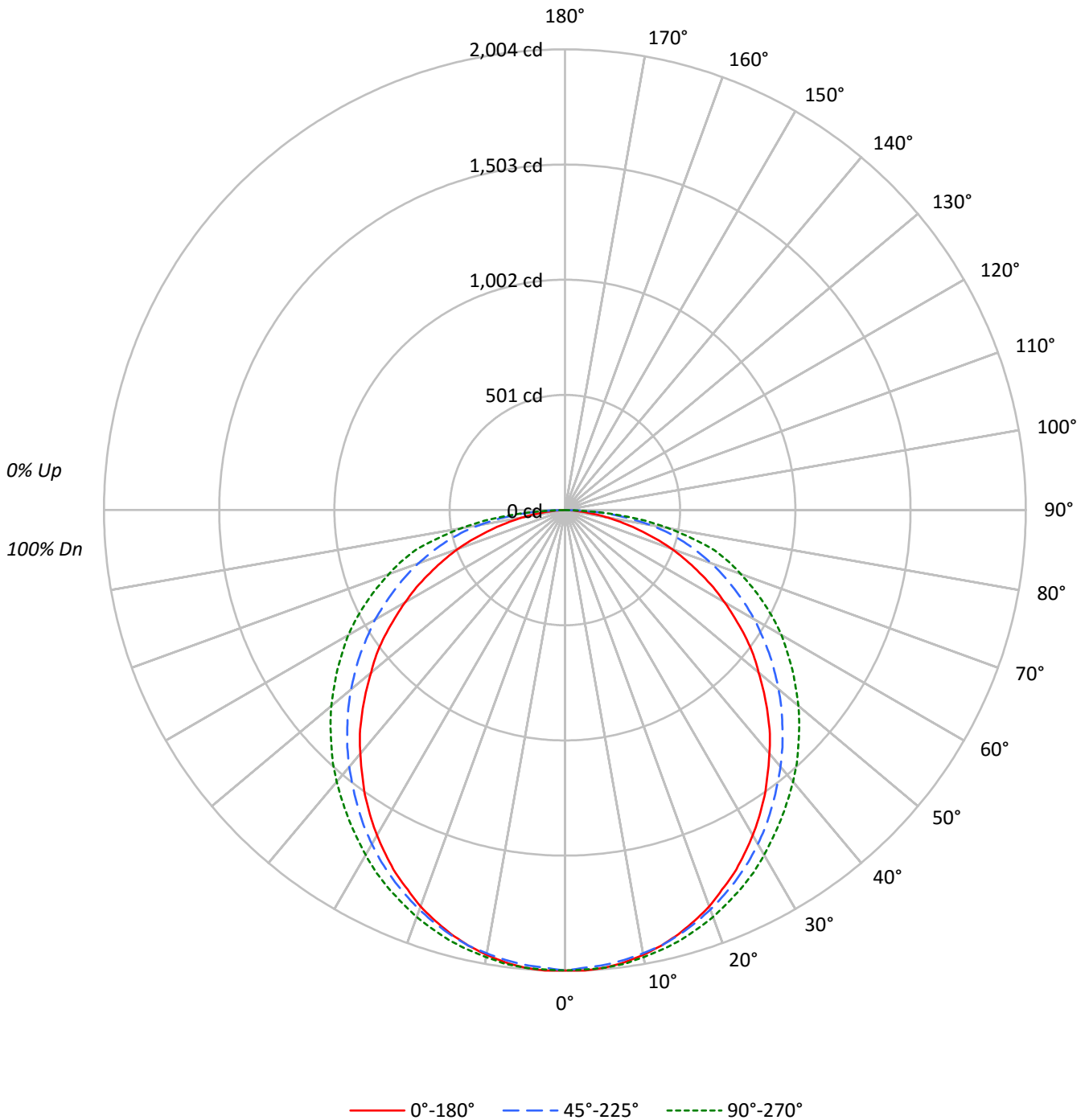
Input Watts (W): 53.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2694	2694	2694
5°	2699	2682	2699
10°	2683	2675	2697
15°	2660	2665	2699
20°	2627	2648	2697
25°	2587	2628	2694
30°	2538	2607	2691
35°	2488	2581	2693
40°	2431	2561	2710
45°	2372	2545	2733
50°	2302	2538	2774
55°	2244	2542	2830
60°	2157	2564	2927
65°	2059	2591	3033
70°	1949	2670	3201
75°	1738	2785	3498
80°	1483	2950	3574
85°	1057	2922	3421



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	3.1
10°-20°	541.8	8.9
20°-30°	818.3	13.5
30°-40°	986.3	16.2
40°-50°	1035.4	17.1
50°-60°	968.7	16.0
60°-70°	800.0	13.2
70°-80°	545.1	9.0
80°-90°	185.9	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°	1549.6	25.5
0°-40°	2535.9	41.8
0°-60°	4540.0	74.8
0°-90°	6071.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6071.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2002	2002	2002	2002	2002	
5°	1998	1996	1986	1998	1998	190
15°	1910	1912	1914	1934	1938	538
25°	1742	1750	1770	1805	1815	802
35°	1515	1531	1571	1624	1640	947
45°	1247	1273	1338	1410	1436	962
55°	957	995	1084	1172	1206	854
65°	647	701	814	916	953	641
75°	334	411	536	636	673	357
85°	68	135	189	214	222	86
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2002.2	2002.2	2002.2	2002.2	2002.2
2.5°	2004.2	2002.2	1992.1	2002.2	2000.1
5°	1998.1	1996.1	1986.0	1998.1	1998.1
7.5°	1984.0	1984.0	1974.0	1988.1	1990.1
10°	1963.9	1963.9	1957.8	1974.0	1974.0
12.5°	1939.7	1939.7	1939.7	1955.8	1957.8
15°	1909.5	1911.5	1913.5	1933.7	1937.7
17.5°	1873.3	1877.3	1883.3	1907.5	1911.5
20°	1835.0	1839.0	1849.1	1877.3	1883.3
22.5°	1786.6	1796.7	1810.8	1843.0	1849.1
25°	1742.3	1750.4	1770.5	1804.8	1814.8
27.5°	1687.9	1700.0	1726.2	1762.5	1776.6
30°	1633.6	1645.6	1677.9	1720.2	1732.3
32.5°	1575.1	1593.3	1627.5	1671.8	1685.9
35°	1514.7	1530.8	1571.1	1623.5	1639.6
37.5°	1448.2	1470.4	1514.7	1571.1	1591.3
40°	1383.8	1408.0	1458.3	1518.7	1542.9
42.5°	1319.3	1343.5	1399.9	1468.4	1492.6
45°	1246.8	1273.0	1337.5	1410.0	1436.2
47.5°	1174.3	1206.5	1277.0	1353.6	1381.8
50°	1099.8	1136.0	1212.6	1293.1	1325.4
52.5°	1033.3	1067.6	1148.1	1234.7	1264.9
55°	956.8	995.0	1083.7	1172.3	1206.5
57.5°	878.2	920.5	1015.2	1111.9	1146.1
60°	801.7	848.0	952.7	1049.4	1087.7
62.5°	727.1	773.5	882.2	983.0	1021.2
65°	646.6	701.0	813.8	916.5	952.7
67.5°	570.0	628.4	747.3	848.0	884.3
70°	495.5	551.9	678.8	777.5	813.8
72.5°	414.9	479.4	606.3	709.0	747.3
75°	334.4	410.9	535.8	636.5	672.8
77.5°	259.8	338.4	463.3	545.9	564.0
80°	191.4	271.9	380.7	439.1	461.3
82.5°	122.9	203.4	290.1	332.4	350.5
85°	68.5	135.0	189.3	213.5	221.6
87.5°	28.2	58.4	76.5	86.6	86.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)