

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: P310791

Luminaire Tested: **24FCZ2-45HE-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: P310791
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: 24FCZ2-45HE-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: 3898.0 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

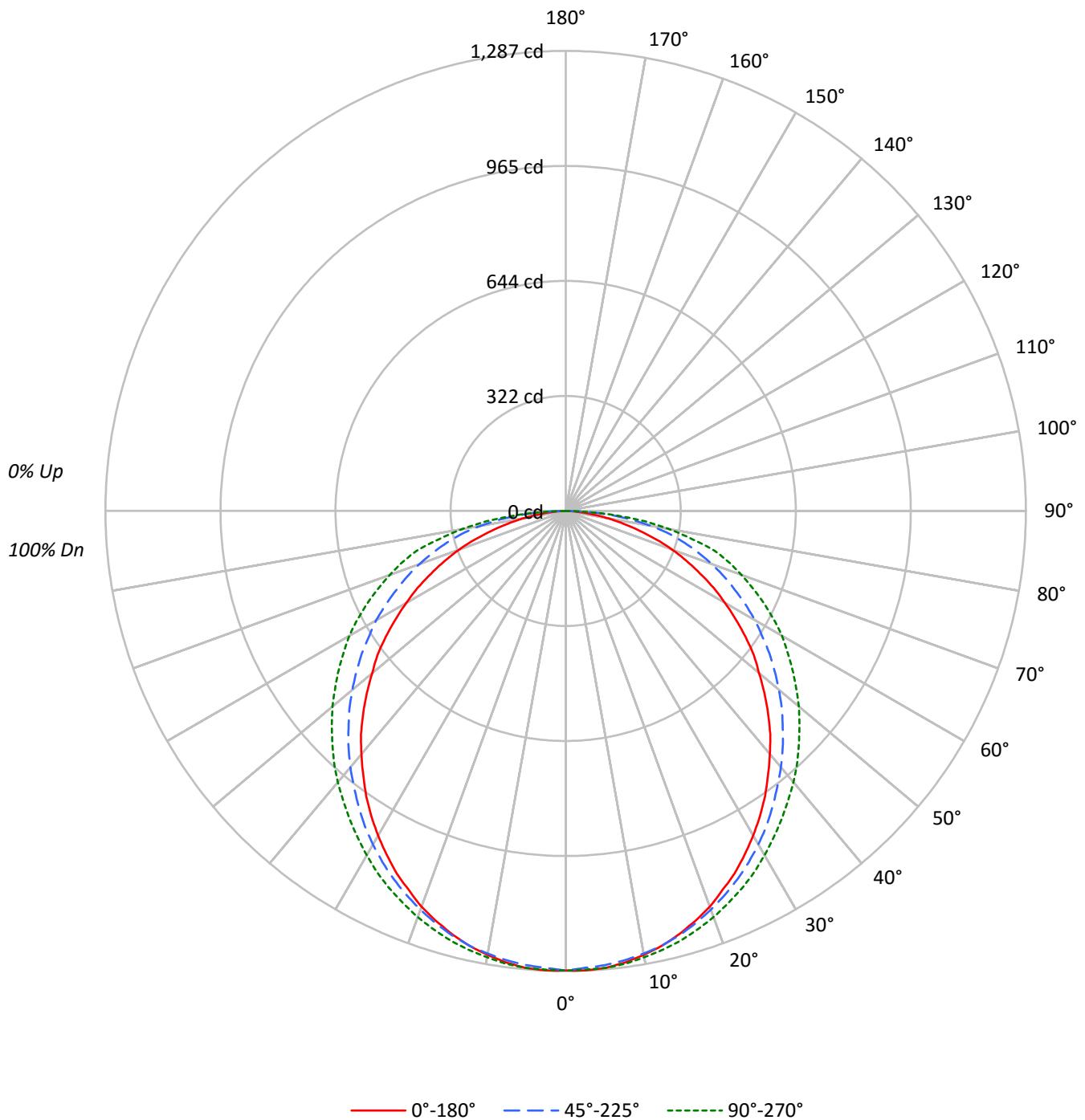
Input Watts (W): 34.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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°	1730	1730	1730
5°	1733	1722	1733
10°	1723	1718	1732
15°	1708	1711	1733
20°	1687	1700	1731
25°	1661	1688	1730
30°	1630	1674	1728
35°	1598	1657	1729
40°	1561	1645	1740
45°	1523	1634	1755
50°	1478	1630	1781
55°	1441	1632	1817
60°	1385	1646	1879
65°	1322	1663	1947
70°	1251	1714	2055
75°	1116	1788	2246
80°	952	1894	2295
85°	679	1877	2197



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.7	3.1
10°-20°	347.9	8.9
20°-30°	525.4	13.5
30°-40°	633.3	16.2
40°-50°	664.8	17.1
50°-60°	622.0	16.0
60°-70°	513.6	13.2
70°-80°	350.0	9.0
80°-90°	119.4	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°	995.0	25.5
0°-40°	1628.2	41.8
0°-60°	2915.0	74.8
0°-90°	3898.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3898.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1286	1286	1286	1286	1286	
5°	1283	1282	1275	1283	1283	122
15°	1226	1227	1229	1242	1244	346
25°	1119	1124	1137	1159	1165	515
35°	973	983	1009	1042	1053	608
45°	800	817	859	905	922	617
55°	614	639	696	753	775	548
65°	415	450	522	588	612	412
75°	215	264	344	409	432	229
85°	44	87	122	137	142	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1285.5	1285.5	1285.5	1285.5	1285.5
2.5°	1286.8	1285.5	1279.1	1285.5	1284.2
5°	1282.9	1281.6	1275.2	1282.9	1282.9
7.5°	1273.9	1273.9	1267.4	1276.5	1277.8
10°	1261.0	1261.0	1257.1	1267.4	1267.4
12.5°	1245.4	1245.4	1245.4	1255.8	1257.1
15°	1226.0	1227.3	1228.6	1241.6	1244.1
17.5°	1202.8	1205.3	1209.2	1224.7	1227.3
20°	1178.2	1180.8	1187.2	1205.3	1209.2
22.5°	1147.1	1153.6	1162.7	1183.4	1187.2
25°	1118.7	1123.9	1136.8	1158.8	1165.3
27.5°	1083.8	1091.5	1108.3	1131.6	1140.7
30°	1048.9	1056.6	1077.3	1104.5	1112.2
32.5°	1011.3	1023.0	1045.0	1073.4	1082.5
35°	972.6	982.9	1008.8	1042.4	1052.7
37.5°	929.9	944.1	972.6	1008.8	1021.7
40°	888.5	904.0	936.3	975.1	990.7
42.5°	847.1	862.6	898.8	942.8	958.3
45°	800.5	817.4	858.7	905.3	922.1
47.5°	754.0	774.7	819.9	869.1	887.2
50°	706.1	729.4	778.6	830.3	851.0
52.5°	663.5	685.4	737.2	792.8	812.2
55°	614.3	638.9	695.8	752.7	774.7
57.5°	563.9	591.0	651.8	713.9	735.9
60°	514.7	544.5	611.7	673.8	698.4
62.5°	466.9	496.6	566.5	631.1	655.7
65°	415.1	450.1	522.5	588.4	611.7
67.5°	366.0	403.5	479.8	544.5	567.8
70°	318.1	354.4	435.8	499.2	522.5
72.5°	266.4	307.8	389.3	455.2	479.8
75°	214.7	263.8	344.0	408.7	432.0
77.5°	166.8	217.3	297.5	350.5	362.1
80°	122.9	174.6	244.4	281.9	296.2
82.5°	78.9	130.6	186.2	213.4	225.0
85°	44.0	86.7	121.6	137.1	142.3
87.5°	18.1	37.5	49.1	55.6	55.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)