

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: P311465

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-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: P311465
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: 24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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: 4024.0 lumens
Efficiency: N/A
Efficacy: 117.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

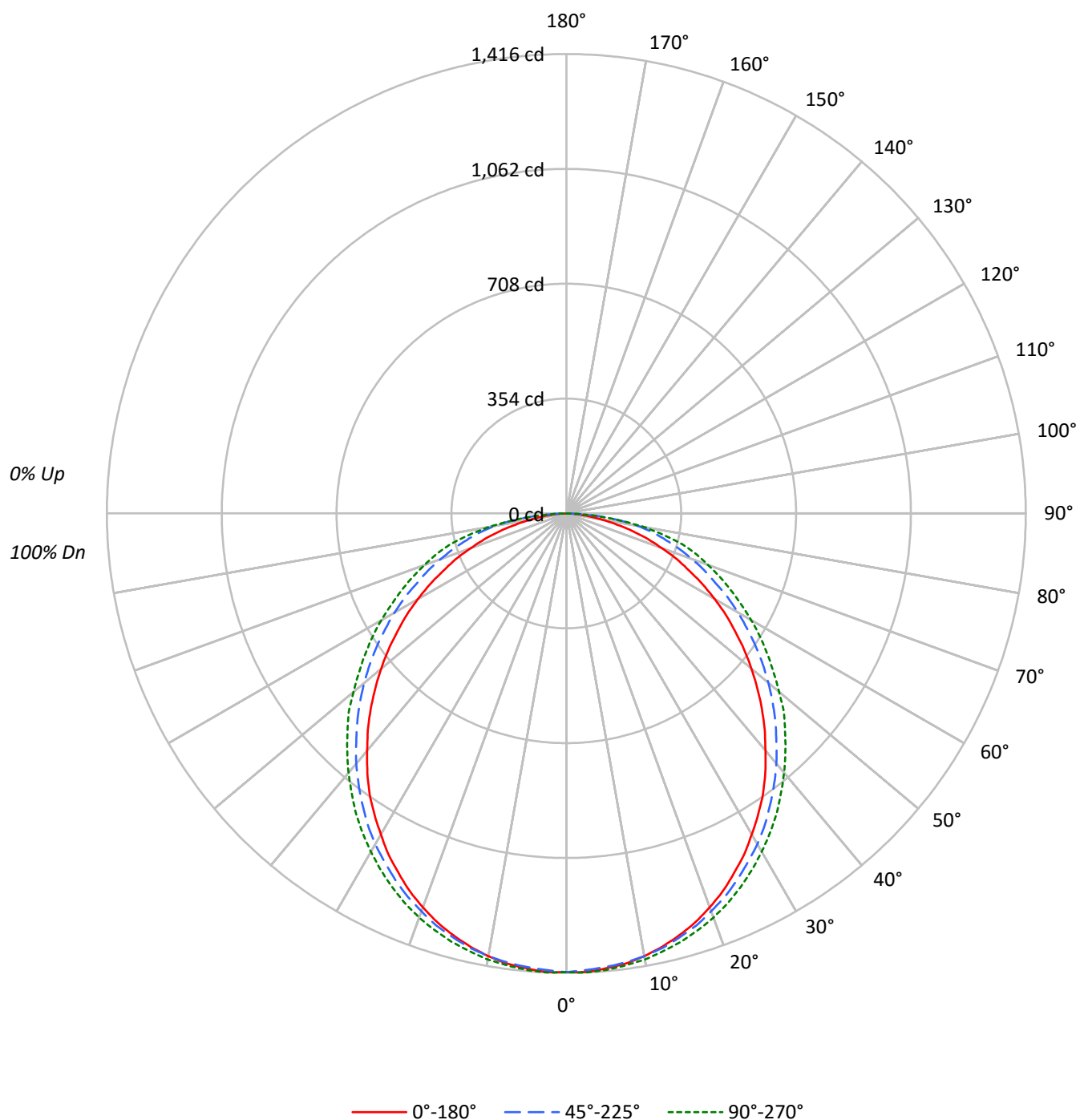
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1902	1902	1902
5°	1901	1895	1908
10°	1893	1893	1907
15°	1875	1884	1903
20°	1850	1869	1898
25°	1816	1850	1886
30°	1775	1829	1871
35°	1736	1799	1856
40°	1677	1769	1834
45°	1622	1734	1814
50°	1560	1702	1793
55°	1490	1670	1775
60°	1421	1644	1771
65°	1331	1615	1782
70°	1232	1624	1830
75°	1103	1655	1933
80°	891	1753	1891
85°	672	1539	1499



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.8	3.3
10°-20°	382.4	9.5
20°-30°	574.8	14.3
30°-40°	684.7	17.0
40°-50°	700.8	17.4
50°-60°	630.9	15.7
60°-70°	495.5	12.3
70°-80°	321.6	8.0
80°-90°	99.4	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°	1091.1	27.1
0°-40°	1775.8	44.1
0°-60°	3107.5	77.2
0°-90°	4024.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4024.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1414	1414	1414	1414	1414	
5°	1407	1410	1403	1411	1412	134
15°	1346	1350	1352	1364	1366	379
25°	1223	1233	1246	1267	1270	563
35°	1057	1070	1095	1122	1130	659
45°	852	873	911	946	954	657
55°	635	663	712	749	757	570
65°	418	450	507	550	560	416
75°	212	253	318	362	372	225
85°	44	80	100	97	97	52
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1413.7	1413.7	1413.7	1413.7	1413.7
2.5°	1414.9	1414.9	1408.5	1414.9	1416.2
5°	1407.3	1409.8	1403.4	1411.1	1412.4
7.5°	1399.6	1399.6	1395.8	1403.4	1404.7
10°	1385.5	1386.8	1385.5	1394.5	1395.8
12.5°	1367.6	1370.2	1371.5	1380.4	1381.7
15°	1345.9	1349.7	1352.3	1363.8	1366.4
17.5°	1321.6	1325.5	1331.9	1344.6	1347.2
20°	1292.2	1297.3	1305.0	1321.6	1325.5
22.5°	1260.3	1265.4	1278.2	1293.5	1299.9
25°	1223.2	1233.4	1246.2	1266.7	1270.5
27.5°	1186.1	1195.1	1211.7	1233.4	1238.5
30°	1142.7	1156.7	1177.2	1198.9	1204.0
32.5°	1100.5	1114.6	1138.9	1161.9	1168.2
35°	1057.0	1069.8	1095.4	1122.2	1129.9
37.5°	1007.2	1023.8	1051.9	1078.8	1086.4
40°	954.8	975.2	1007.2	1035.3	1044.3
42.5°	904.9	926.7	958.6	989.3	999.5
45°	852.5	873.0	911.3	945.8	953.5
47.5°	798.9	821.9	862.8	897.3	910.1
50°	745.2	769.5	812.9	848.7	856.4
52.5°	691.5	717.1	763.1	801.4	805.2
55°	635.3	663.4	711.9	749.0	756.7
57.5°	584.1	608.4	660.8	699.2	708.1
60°	527.9	554.7	611.0	646.8	658.3
62.5°	474.2	502.3	561.1	596.9	607.1
65°	418.0	449.9	507.4	549.6	559.8
67.5°	369.4	400.1	461.4	502.3	512.5
70°	313.2	347.7	412.8	455.0	465.3
72.5°	264.6	300.4	365.6	406.5	421.8
75°	212.2	253.1	318.3	361.7	371.9
77.5°	161.0	208.3	274.8	308.0	308.0
80°	115.0	164.9	226.2	241.6	244.1
82.5°	75.4	124.0	167.4	166.2	166.2
85°	43.5	80.5	99.7	97.1	97.1
87.5°	16.6	33.2	35.8	35.8	34.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)