

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: P313858

Luminaire Tested: **24FCZ2-35HE-UNV-L83050-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: P313858
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: 24FCZ2-35HE-UNV-L83050-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: 3191.0 lumens
Efficiency: N/A
Efficacy: 116.9 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

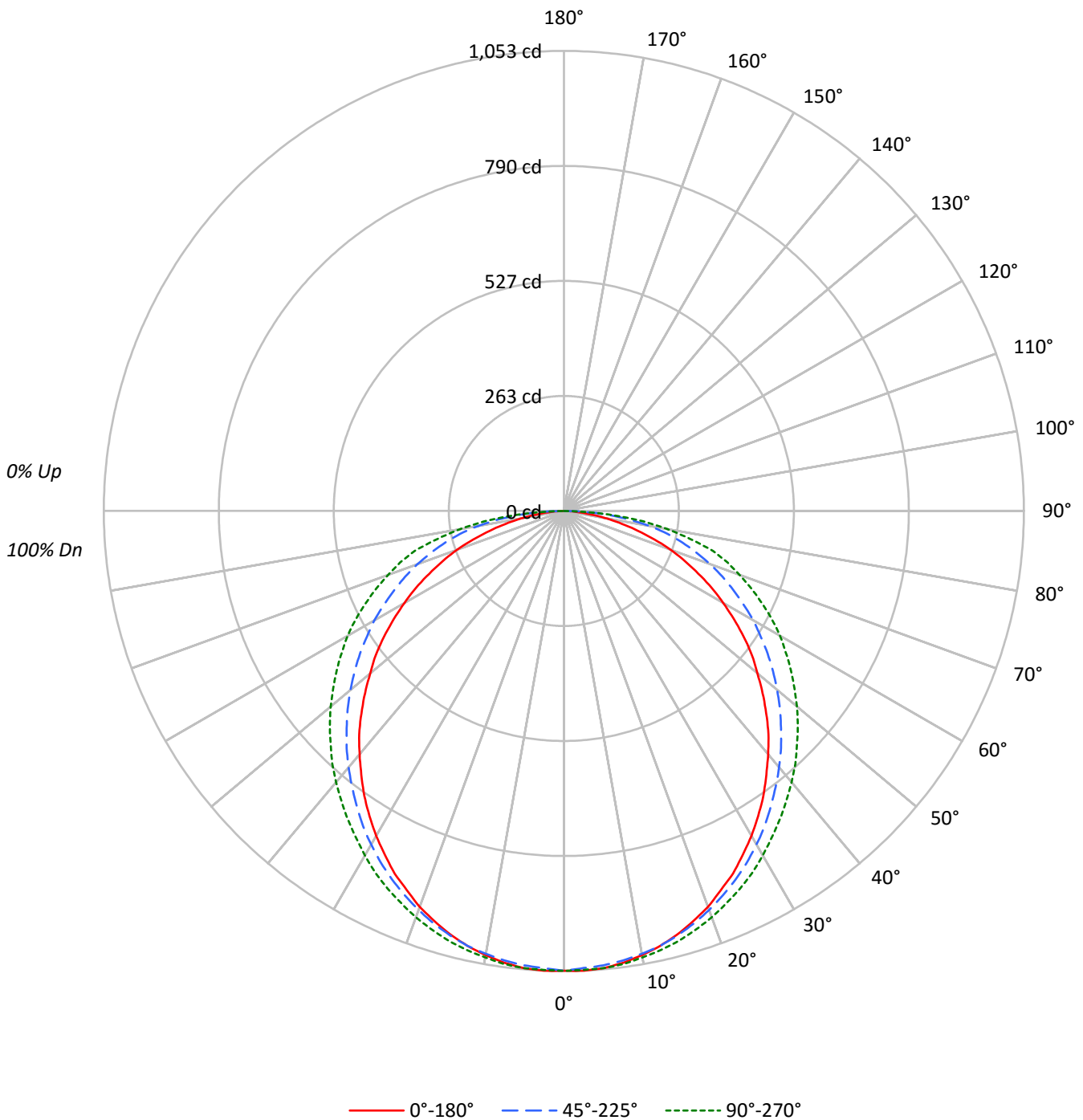
Input Watts (W): 27.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1416	1416	1416
5°	1418	1410	1418
10°	1410	1406	1417
15°	1398	1401	1419
20°	1381	1392	1417
25°	1360	1382	1416
30°	1334	1370	1415
35°	1308	1356	1416
40°	1277	1346	1424
45°	1247	1338	1436
50°	1210	1334	1458
55°	1180	1336	1488
60°	1134	1348	1538
65°	1082	1362	1594
70°	1024	1404	1683
75°	913	1464	1838
80°	779	1550	1878
85°	556	1536	1798



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	99.6	3.1
10°-20°	284.8	8.9
20°-30°	430.1	13.5
30°-40°	518.4	16.2
40°-50°	544.2	17.1
50°-60°	509.2	16.0
60°-70°	420.5	13.2
70°-80°	286.5	9.0
80°-90°	97.7	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°	814.5	25.5
0°-40°	1332.9	41.8
0°-60°	2386.3	74.8
0°-90°	3191.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3191.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1052	1052	1052	1052	1052	
5°	1050	1049	1044	1050	1050	100
15°	1004	1005	1006	1016	1018	283
25°	916	920	931	949	954	421
35°	796	805	826	853	862	498
45°	655	669	703	741	755	505
55°	503	523	570	616	634	449
65°	340	368	428	482	501	337
75°	176	216	282	335	354	187
85°	36	71	100	112	116	45
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1052.4	1052.4	1052.4	1052.4	1052.4
2.5°	1053.4	1052.4	1047.1	1052.4	1051.3
5°	1050.2	1049.2	1043.9	1050.2	1050.2
7.5°	1042.8	1042.8	1037.5	1045.0	1046.0
10°	1032.2	1032.2	1029.1	1037.5	1037.5
12.5°	1019.5	1019.5	1019.5	1028.0	1029.1
15°	1003.7	1004.7	1005.8	1016.4	1018.5
17.5°	984.6	986.7	989.9	1002.6	1004.7
20°	964.5	966.6	971.9	986.7	989.9
22.5°	939.1	944.4	951.8	968.7	971.9
25°	915.8	920.0	930.6	948.6	953.9
27.5°	887.2	893.6	907.3	926.4	933.8
30°	858.6	865.0	881.9	904.1	910.5
32.5°	827.9	837.4	855.4	878.7	886.1
35°	796.2	804.6	825.8	853.3	861.8
37.5°	761.2	772.9	796.2	825.8	836.4
40°	727.3	740.0	766.5	798.3	811.0
42.5°	693.5	706.2	735.8	771.8	784.5
45°	655.3	669.1	703.0	741.1	754.9
47.5°	617.2	634.2	671.2	711.5	726.3
50°	578.1	597.1	637.3	679.7	696.6
52.5°	543.1	561.1	603.5	649.0	664.9
55°	502.9	523.0	569.6	616.2	634.2
57.5°	461.6	483.8	533.6	584.4	602.4
60°	421.4	445.7	500.8	551.6	571.7
62.5°	382.2	406.5	463.7	516.7	536.8
65°	339.8	368.4	427.7	481.7	500.8
67.5°	299.6	330.3	392.8	445.7	464.8
70°	260.4	290.1	356.8	408.7	427.7
72.5°	218.1	252.0	318.7	372.7	392.8
75°	175.7	216.0	281.6	334.6	353.6
77.5°	136.6	177.9	243.5	286.9	296.4
80°	100.6	142.9	200.1	230.8	242.4
82.5°	64.6	106.9	152.5	174.7	184.2
85°	36.0	70.9	99.5	112.2	116.5
87.5°	14.8	30.7	40.2	45.5	45.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)