

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: METALUX

Report Number: P388711

Luminaire Tested: **24CZ2-45HE-SQR-UNV-L940-CD1-SWPD1-U**

Issue Date: 2/28/2020

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: P388711  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2002-678-2)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-45HE-SQR-UNV-L940-CD1-SWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3712.4 lumens  
Efficiency: N/A  
Efficacy: 105.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.33 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

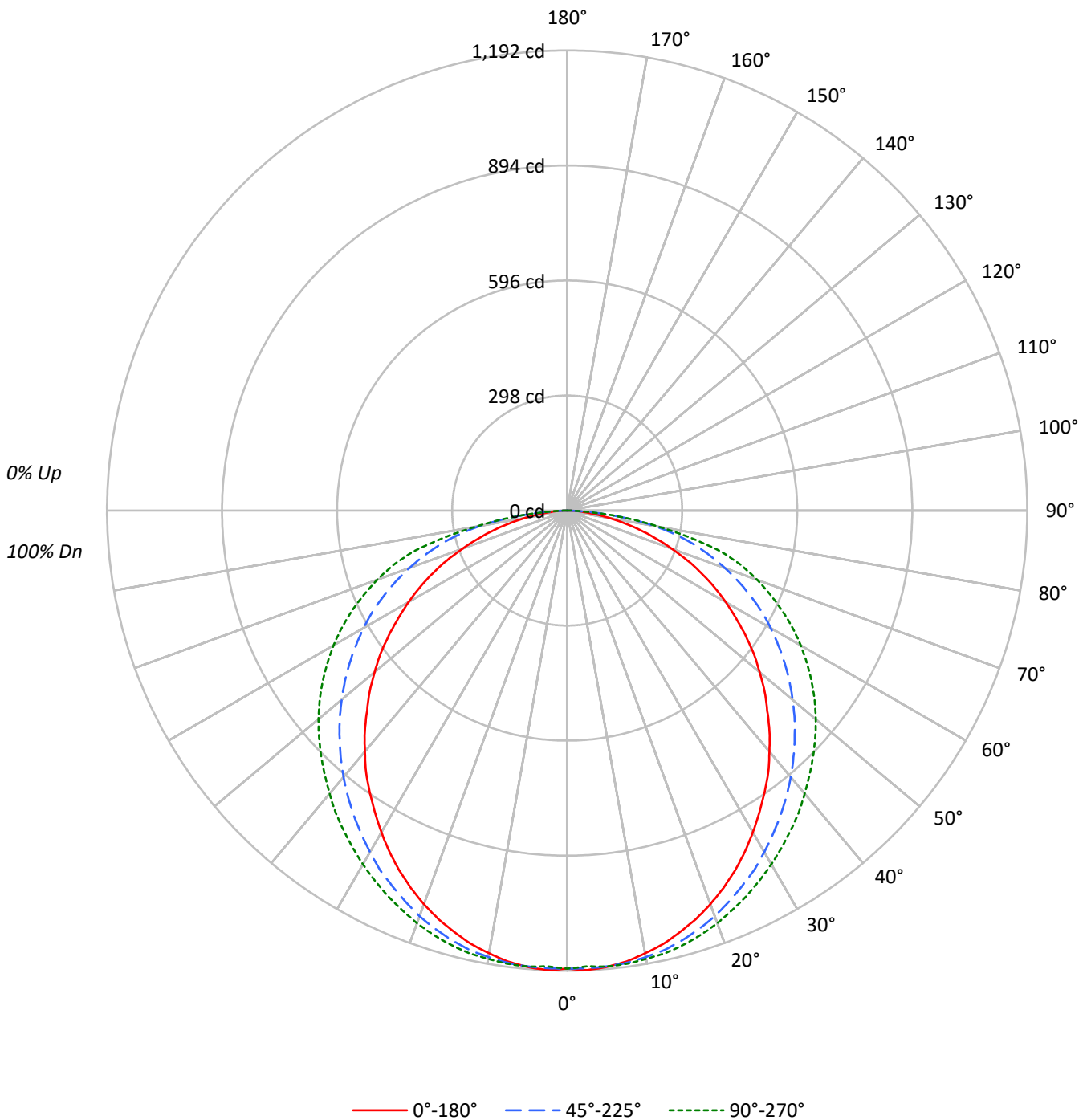
Input Watts (W): 35.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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				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	93	89	92	89	87	89	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	78	67	58	52	64	57	51	62	55	50	60	54	49	47
5	74	61	51	44	72	60	51	44	57	50	44	55	49	43	54	48	43	41
6	68	55	45	39	66	54	45	38	52	44	38	50	43	38	48	42	37	35
7	63	49	40	34	62	49	40	34	47	39	34	45	39	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	42	35	30	40	34	30	28
9	55	41	33	27	54	41	33	27	39	32	27	38	32	27	37	31	27	25
10	52	38	30	25	50	37	30	24	36	29	24	36	29	24	35	29	24	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1597	1597	1597
5°	1603	1601	1601
10°	1591	1605	1611
15°	1574	1605	1622
20°	1553	1601	1629
25°	1527	1593	1634
30°	1495	1587	1644
35°	1464	1583	1659
40°	1432	1583	1682
45°	1395	1586	1714
50°	1362	1596	1760
55°	1323	1613	1814
60°	1277	1640	1880
65°	1222	1670	1959
70°	1133	1712	2059
75°	1026	1772	2154
80°	865	1776	1852
85°	662	1343	1343



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.6	3.0
10°-20°	324.1	8.7
20°-30°	492.3	13.3
30°-40°	598.8	16.1
40°-50°	637.5	17.2
50°-60°	607.2	16.4
60°-70°	507.8	13.7
70°-80°	338.5	9.1
80°-90°	93.7	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°	929.0	25.0
0°-40°	1527.7	41.2
0°-60°	2772.4	74.7
0°-90°	3712.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3712.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1187	1187	1187	1187	1187	
5°	1187	1179	1185	1185	1185	113
15°	1130	1133	1152	1161	1165	319
25°	1028	1042	1073	1091	1101	474
35°	891	917	964	995	1010	558
45°	733	772	834	880	901	567
55°	564	613	688	748	774	504
65°	384	440	525	590	615	379
75°	197	260	341	398	414	209
85°	43	80	87	86	87	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1186.7	1186.7	1186.7	1186.7	1186.7
2.5°	1191.6	1183.0	1186.7	1186.7	1181.8
5°	1186.7	1179.3	1185.4	1185.4	1185.4
7.5°	1178.1	1172.0	1181.8	1184.2	1184.2
10°	1164.6	1162.1	1174.4	1178.1	1179.3
12.5°	1149.9	1148.7	1165.8	1170.7	1174.4
15°	1130.3	1132.7	1152.3	1160.9	1164.6
17.5°	1109.4	1114.3	1136.4	1148.7	1152.3
20°	1084.9	1092.3	1118.0	1130.3	1137.6
22.5°	1057.9	1069.0	1095.9	1110.7	1119.2
25°	1028.5	1042.0	1072.7	1091.0	1100.9
27.5°	996.7	1013.8	1049.4	1070.2	1080.0
30°	962.3	981.9	1021.2	1045.7	1057.9
32.5°	926.8	950.1	993.0	1019.9	1034.7
35°	891.2	917.0	963.6	995.4	1010.1
37.5°	855.7	881.4	932.9	967.2	985.6
40°	815.2	845.9	901.0	939.0	957.4
42.5°	776.0	809.1	867.9	909.6	929.2
45°	733.1	772.3	833.6	880.2	901.0
47.5°	693.9	733.1	799.3	848.3	871.6
50°	650.9	692.6	762.5	816.4	841.0
52.5°	609.3	652.2	725.7	783.3	807.9
55°	563.9	612.9	687.7	747.8	773.5
57.5°	518.6	571.3	648.5	711.0	736.8
60°	474.4	528.4	609.3	671.8	698.8
62.5°	430.3	484.2	568.8	632.6	658.3
65°	383.7	440.1	524.7	589.7	615.4
67.5°	337.1	396.0	480.5	545.5	570.0
70°	288.1	350.6	435.2	498.9	523.5
72.5°	242.7	305.2	388.6	451.1	474.4
75°	197.4	259.9	340.8	398.4	414.4
77.5°	153.2	215.8	288.1	326.1	329.8
80°	111.6	170.4	229.2	240.3	239.0
82.5°	74.8	127.5	158.1	159.4	163.0
85°	42.9	79.7	87.0	85.8	87.0
87.5°	17.2	28.2	24.5	18.4	18.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)