

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: P388708

Luminaire Tested: **24CZ2-45HE-SQR-UNV-L935-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: P388708  
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-L935-CD1-SWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3674.3 lumens  
Efficiency: N/A  
Efficacy: 104.1 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

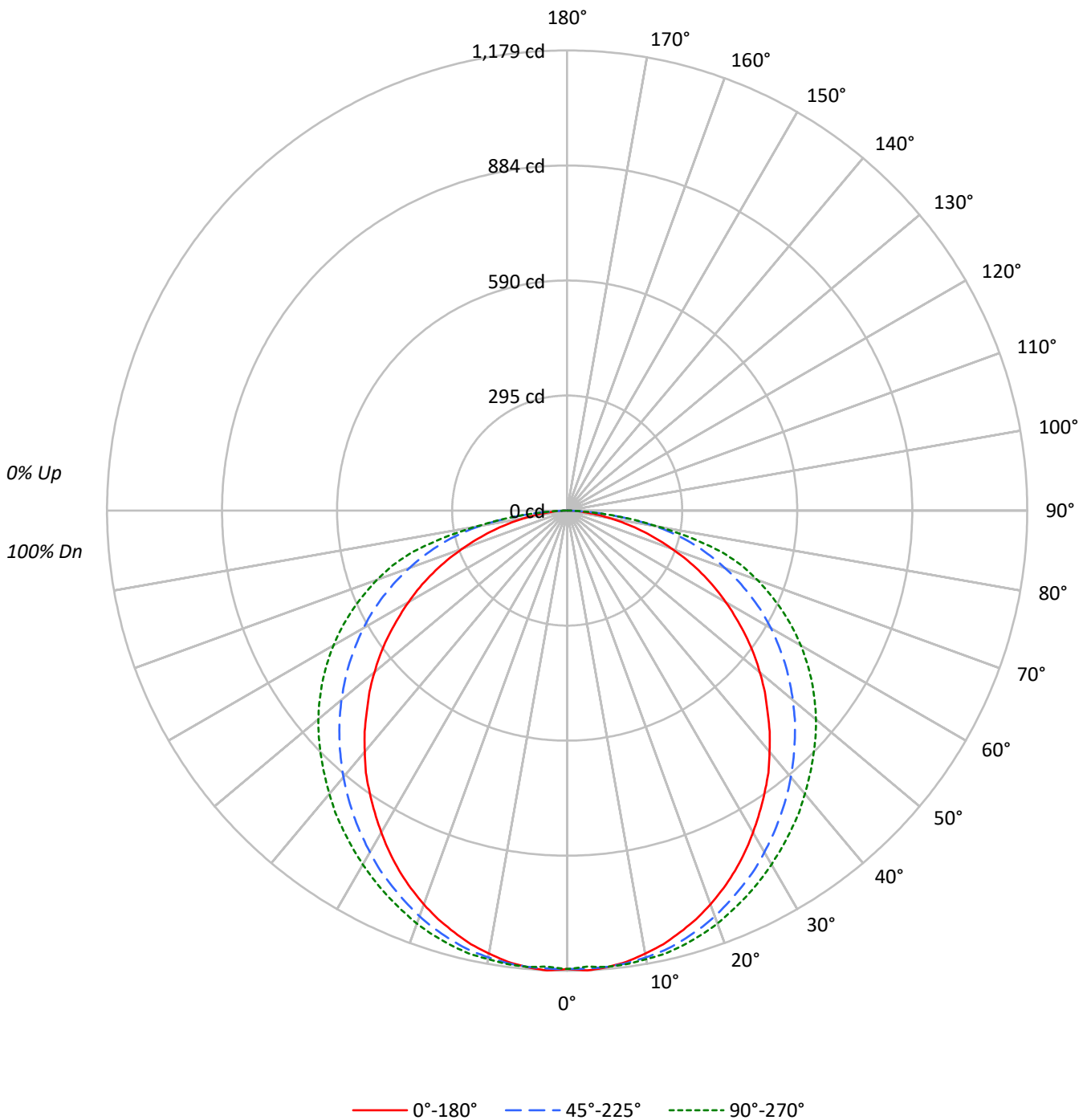
Input Watts (W): 35.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1580	1580	1580
5°	1586	1585	1585
10°	1575	1588	1595
15°	1558	1589	1606
20°	1538	1584	1612
25°	1511	1576	1618
30°	1480	1570	1627
35°	1449	1566	1642
40°	1417	1566	1664
45°	1381	1570	1697
50°	1349	1580	1742
55°	1309	1597	1796
60°	1264	1623	1861
65°	1209	1653	1939
70°	1122	1694	2038
75°	1015	1753	2132
80°	855	1758	1833
85°	656	1329	1329



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.5	3.0
10°-20°	320.8	8.7
20°-30°	487.2	13.3
30°-40°	592.6	16.1
40°-50°	631.0	17.2
50°-60°	600.9	16.4
60°-70°	502.6	13.7
70°-80°	335.1	9.1
80°-90°	92.7	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°	919.4	25.0
0°-40°	1512.1	41.2
0°-60°	2744.0	74.7
0°-90°	3674.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3674.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1174	1174	1174	1174	1174	
5°	1174	1167	1173	1173	1173	111
15°	1119	1121	1140	1149	1153	315
25°	1018	1031	1062	1080	1090	469
35°	882	908	954	985	1000	552
45°	726	764	825	871	892	561
55°	558	607	681	740	766	499
65°	380	436	519	584	609	375
75°	195	257	337	394	410	207
85°	42	79	86	85	86	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1174.5	1174.5	1174.5	1174.5	1174.5
2.5°	1179.3	1170.8	1174.5	1174.5	1169.6
5°	1174.5	1167.2	1173.3	1173.3	1173.3
7.5°	1166.0	1159.9	1169.6	1172.1	1172.1
10°	1152.6	1150.2	1162.4	1166.0	1167.2
12.5°	1138.1	1136.9	1153.9	1158.7	1162.4
15°	1118.7	1121.1	1140.5	1149.0	1152.6
17.5°	1098.0	1102.9	1124.7	1136.9	1140.5
20°	1073.8	1081.1	1106.5	1118.7	1126.0
22.5°	1047.1	1058.0	1084.7	1099.3	1107.8
25°	1018.0	1031.3	1061.6	1079.8	1089.6
27.5°	986.4	1003.4	1038.6	1059.2	1068.9
30°	952.4	971.9	1010.7	1035.0	1047.1
32.5°	917.3	940.3	982.8	1009.5	1024.0
35°	882.1	907.6	953.7	985.2	999.8
37.5°	846.9	872.4	923.3	957.3	975.5
40°	806.9	837.2	891.8	929.4	947.6
42.5°	768.0	800.8	859.0	900.3	919.7
45°	725.6	764.4	825.1	871.2	891.8
47.5°	686.7	725.6	791.1	839.6	862.7
50°	644.3	685.5	754.7	808.1	832.3
52.5°	603.0	645.5	718.3	775.3	799.6
55°	558.1	606.7	680.7	740.1	765.6
57.5°	513.2	565.4	641.8	703.7	729.2
60°	469.6	522.9	603.0	664.9	691.6
62.5°	425.9	479.3	563.0	626.1	651.5
65°	379.8	435.6	519.3	583.6	609.1
67.5°	333.7	391.9	475.6	539.9	564.2
70°	285.1	347.0	430.7	493.8	518.1
72.5°	240.2	302.1	384.6	446.5	469.6
75°	195.3	257.2	337.3	394.3	410.1
77.5°	151.7	213.5	285.1	322.7	326.4
80°	110.4	168.7	226.9	237.8	236.6
82.5°	74.0	126.2	156.5	157.7	161.4
85°	42.5	78.9	86.1	84.9	86.1
87.5°	17.0	27.9	24.3	18.2	18.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)