

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: P391514

Luminaire Tested: **24CZ2-60VHE-HRP-UNV-L935-CD1-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: P391514  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-60VHE-HRP-UNV-L935-CD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND HRP LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4345.5 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

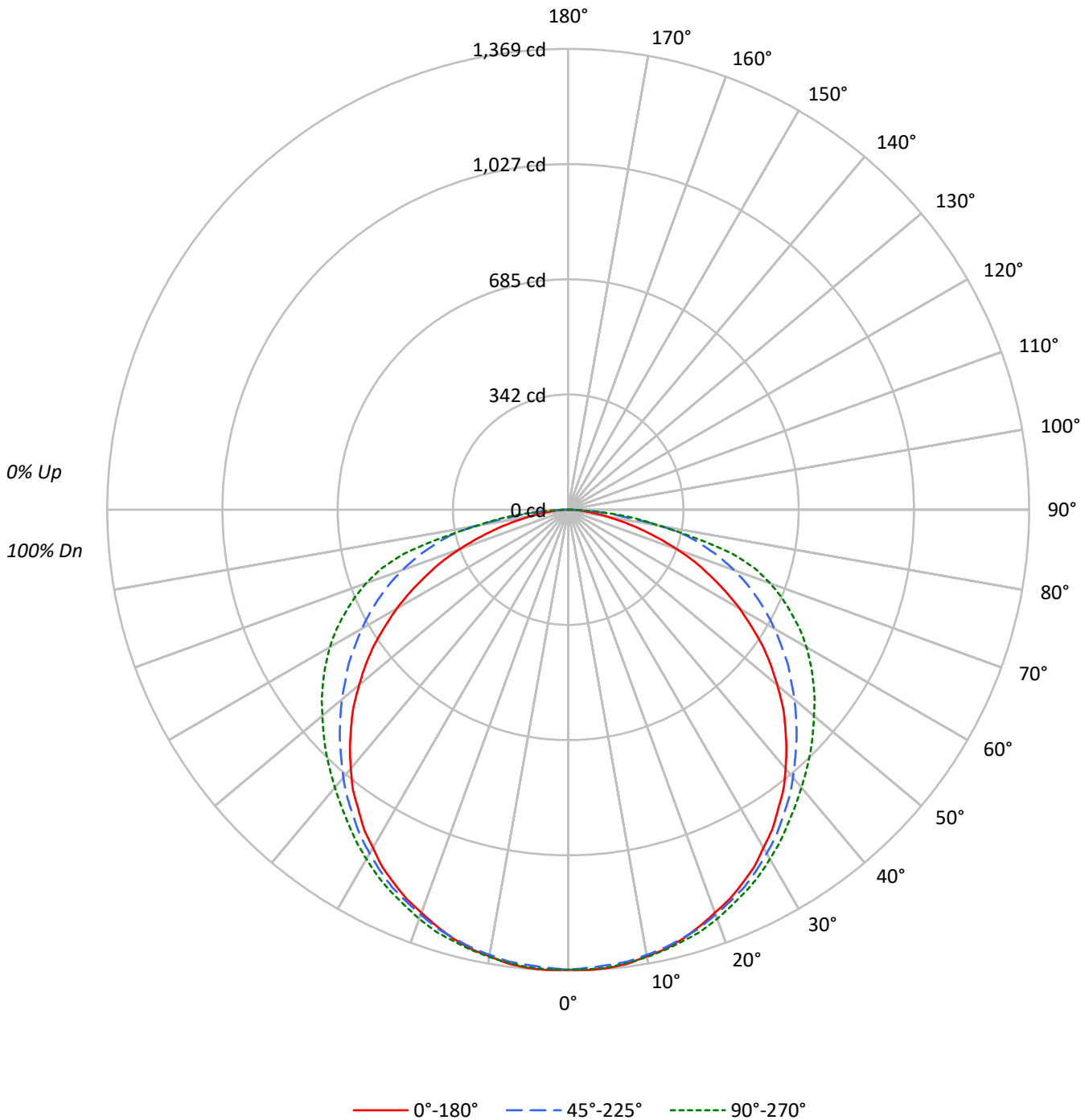
Input Watts (W): 38.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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		88	86	84	82
2	97	89	81	75	95	87	80	74	83	77	72		80	75	71		77	73	69	67
3	88	77	68	62	86	76	67	61	72	66	60		70	64	59		67	62	58	56
4	81	68	59	52	78	67	58	51	64	57	51		62	55	50		59	54	49	47
5	74	60	51	44	72	59	51	44	57	49	43		55	48	43		53	47	42	40
6	68	54	45	38	66	53	45	38	51	44	38		50	43	37		48	42	37	35
7	63	49	40	34	61	48	40	34	47	39	33		45	38	33		44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30		41	34	29		40	34	29	27
9	55	41	33	27	53	40	32	27	39	32	27		38	31	26		37	31	26	24
10	51	38	30	24	50	37	29	24	36	29	24		35	29	24		34	28	24	22

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

	0°	45°	90°
0°	1839	1839	1839
5°	1846	1834	1843
10°	1840	1835	1843
15°	1837	1835	1846
20°	1824	1833	1852
25°	1818	1837	1856
30°	1802	1832	1862
35°	1784	1827	1869
40°	1764	1825	1893
45°	1735	1825	1936
50°	1696	1836	1994
55°	1653	1866	2083
60°	1583	1903	2198
65°	1482	1969	2333
70°	1348	2061	2510
75°	1143	2174	2622
80°	902	2188	2121
85°	665	1664	1863



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.6	3.0
10°-20°	373.1	8.6
20°-30°	570.5	13.1
30°-40°	697.4	16.0
40°-50°	743.3	17.1
50°-60°	710.7	16.4
60°-70°	602.1	13.9
70°-80°	404.6	9.3
80°-90°	114.1	2.6
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°	1073.2	24.7
0°-40°	1770.6	40.7
0°-60°	3224.7	74.2
0°-90°	4345.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4345.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1366	1366	1366	1366	1366	
5°	1366	1364	1358	1364	1364	130
15°	1319	1319	1317	1328	1326	372
25°	1224	1229	1237	1248	1250	564
35°	1086	1095	1112	1134	1138	681
45°	912	927	959	1000	1017	703
55°	705	731	795	858	888	628
65°	466	513	619	700	733	462
75°	220	300	418	489	504	235
85°	43	88	108	116	121	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1366.5	1366.5	1366.5	1366.5	1366.5
2.5°	1368.7	1368.7	1362.2	1366.5	1366.5
5°	1366.5	1364.4	1357.9	1364.4	1364.4
7.5°	1360.1	1357.9	1353.6	1360.1	1357.9
10°	1347.1	1347.1	1342.8	1349.3	1349.3
12.5°	1336.4	1334.2	1332.0	1340.7	1338.5
15°	1319.1	1319.1	1317.0	1327.7	1325.6
17.5°	1297.6	1299.7	1301.9	1310.5	1312.7
20°	1273.9	1278.2	1280.3	1293.3	1293.3
22.5°	1252.3	1254.5	1258.8	1271.7	1271.7
25°	1224.3	1228.6	1237.2	1248.0	1250.1
27.5°	1196.3	1198.4	1209.2	1224.3	1226.4
30°	1159.6	1166.1	1179.0	1196.3	1198.4
32.5°	1127.3	1133.8	1148.8	1166.1	1170.4
35°	1086.3	1095.0	1112.2	1133.8	1138.1
37.5°	1049.7	1056.2	1077.7	1101.4	1107.9
40°	1004.4	1017.4	1038.9	1066.9	1077.7
42.5°	959.2	972.1	998.0	1034.6	1047.5
45°	911.7	926.8	959.2	1000.1	1017.4
47.5°	864.3	881.6	918.2	965.6	985.0
50°	810.4	832.0	877.3	931.1	952.7
52.5°	758.7	784.6	834.1	894.5	922.5
55°	704.8	730.7	795.3	857.9	888.0
57.5°	644.5	679.0	750.1	821.2	853.5
60°	588.4	620.8	707.0	784.6	816.9
62.5°	528.1	571.2	663.9	745.8	778.1
65°	465.6	513.0	618.6	700.5	732.8
67.5°	409.5	461.3	573.3	655.2	687.6
70°	342.7	407.4	523.8	605.7	638.0
72.5°	280.2	351.3	472.0	551.8	582.0
75°	219.9	299.6	418.2	489.3	504.4
77.5°	163.8	247.9	362.1	392.3	381.5
80°	116.4	198.3	282.4	267.3	273.7
82.5°	75.4	150.9	174.6	198.3	204.8
85°	43.1	88.4	107.8	116.4	120.7
87.5°	19.4	32.3	43.1	43.1	41.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)