

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: P390077

Luminaire Tested: **22CZ2-110VHE-HRP-UNV-L940-CD2-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: P390077  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-24)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 22CZ2-110VHE-HRP-UNV-L940-CD2-U  
Description: 2x2 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND HRP LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8023.2 lumens  
Efficiency: N/A  
Efficacy: 91.5 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

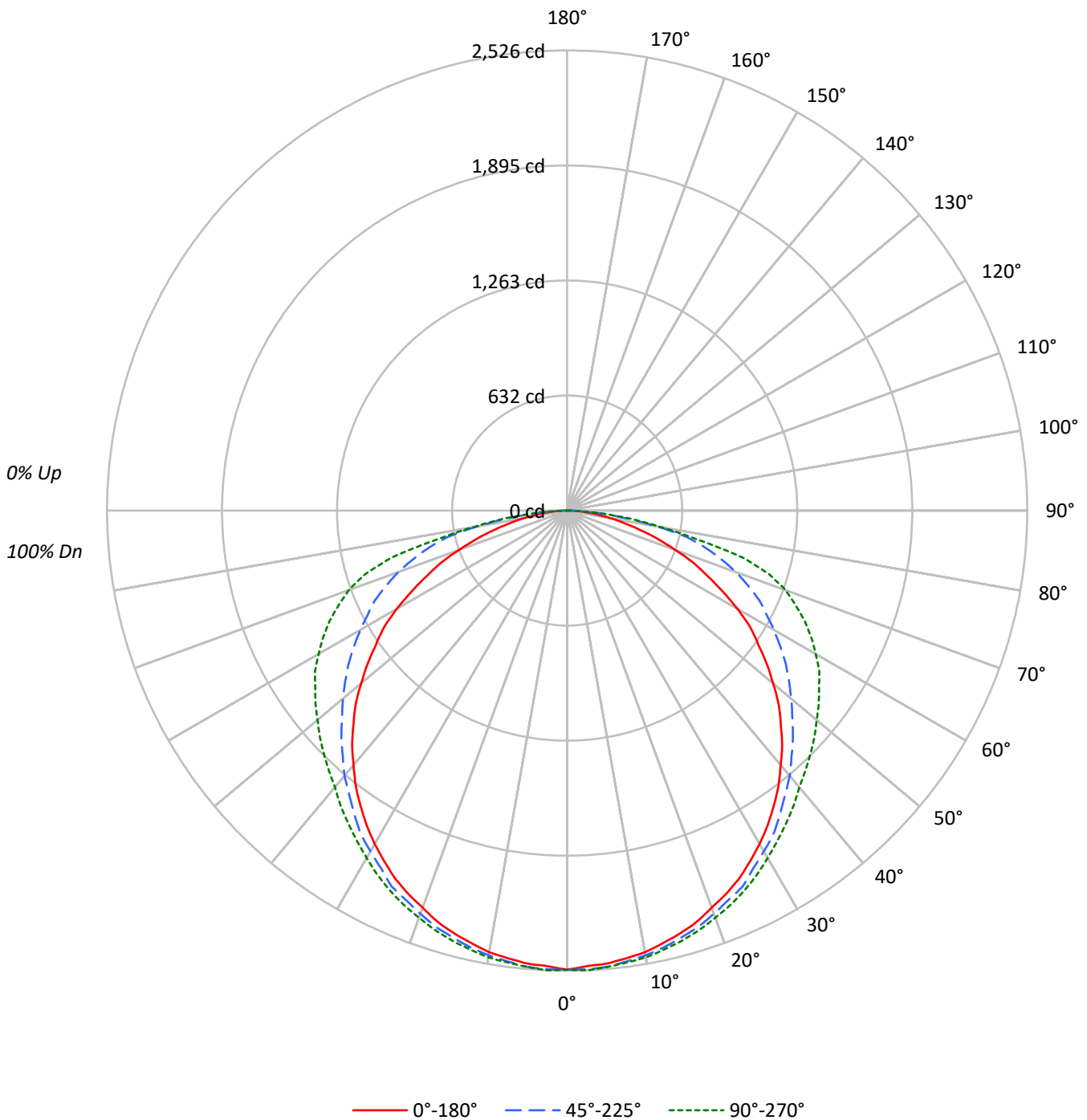
Input Watts (W): 87.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	92	89	92	89	86	88	86	84	82
2	97	88	81	75	95	86	80	74	83	77	72	80	75	71	76	72	69	67
3	88	77	68	61	86	75	67	61	72	65	60	70	64	59	67	62	58	55
4	80	68	59	51	78	66	58	51	64	56	50	61	55	50	59	54	49	47
5	74	60	51	44	72	59	50	44	57	49	43	55	48	43	53	47	42	40
6	68	54	45	38	66	53	44	38	51	43	38	50	43	37	48	42	37	35
7	63	49	40	33	61	48	39	33	47	39	33	45	38	33	44	37	33	31
8	59	45	36	30	57	44	35	30	43	35	29	41	34	29	40	34	29	27
9	55	41	32	27	53	40	32	27	39	32	26	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°	6782	6782	6782
5°	6744	6792	6792
10°	6725	6774	6806
15°	6692	6758	6807
20°	6643	6744	6812
25°	6624	6764	6834
30°	6566	6712	6841
35°	6495	6689	6883
40°	6407	6676	6966
45°	6312	6671	7188
50°	6177	6721	7487
55°	6009	6867	7919
60°	5813	7052	8481
65°	5412	7403	9170
70°	4969	7755	10031
75°	4357	8162	10371
80°	3750	7775	8140
85°	3279	5650	6197



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.4	3.0
10°-20°	684.5	8.5
20°-30°	1044.3	13.0
30°-40°	1275.1	15.9
40°-50°	1363.4	17.0
50°-60°	1316.0	16.4
60°-70°	1132.8	14.1
70°-80°	766.5	9.6
80°-90°	202.2	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°	1967.2	24.5
0°-40°	3242.3	40.4
0°-60°	5921.7	73.8
0°-90°	8023.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8023.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2520	2520	2520	2520	2520	
5°	2497	2502	2514	2514	2514	237
15°	2402	2408	2426	2438	2444	678
25°	2231	2243	2278	2290	2302	1027
35°	1977	1995	2036	2078	2095	1237
45°	1658	1688	1753	1842	1889	1280
55°	1281	1322	1464	1611	1688	1148
65°	850	932	1163	1346	1440	845
75°	419	555	785	944	998	450
85°	106	148	183	189	201	120
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2520.2	2520.2	2520.2	2520.2	2520.2
2.5°	2502.5	2508.4	2520.2	2520.2	2526.1
5°	2496.6	2502.5	2514.3	2514.3	2514.3
7.5°	2478.9	2484.8	2496.6	2502.5	2502.5
10°	2461.2	2467.1	2478.9	2484.8	2490.7
12.5°	2431.7	2437.6	2455.3	2467.1	2467.1
15°	2402.2	2408.1	2425.8	2437.6	2443.5
17.5°	2366.8	2378.6	2396.3	2408.1	2414.0
20°	2319.6	2331.4	2355.0	2372.7	2378.6
22.5°	2278.2	2290.0	2313.7	2331.4	2343.2
25°	2231.0	2242.8	2278.2	2290.0	2301.8
27.5°	2172.0	2183.8	2213.3	2236.9	2254.6
30°	2113.0	2124.8	2160.2	2189.7	2201.5
32.5°	2048.1	2065.8	2107.1	2130.7	2148.4
35°	1977.2	1994.9	2036.2	2077.6	2095.3
37.5°	1906.4	1924.1	1965.4	2018.5	2042.2
40°	1823.8	1847.4	1900.5	1971.3	1983.1
42.5°	1747.0	1776.6	1823.8	1906.4	1935.9
45°	1658.5	1688.0	1752.9	1841.5	1888.7
47.5°	1575.9	1605.4	1676.2	1782.5	1841.5
50°	1475.5	1516.9	1605.4	1729.3	1788.4
52.5°	1381.1	1416.5	1534.6	1670.3	1741.1
55°	1280.8	1322.1	1463.7	1611.3	1688.0
57.5°	1192.2	1227.7	1387.0	1552.3	1640.8
60°	1080.1	1127.3	1310.3	1487.3	1575.9
62.5°	962.1	1032.9	1233.6	1416.5	1511.0
65°	849.9	932.5	1162.7	1345.7	1440.1
67.5°	749.6	838.1	1074.2	1269.0	1357.5
70°	631.5	743.7	985.7	1174.5	1274.9
72.5°	525.3	649.2	885.3	1074.2	1162.7
75°	419.1	554.8	785.0	944.3	997.5
77.5°	324.6	454.5	672.8	720.1	726.0
80°	242.0	360.0	501.7	507.6	525.3
82.5°	165.3	253.8	324.6	354.1	360.0
85°	106.2	147.6	183.0	188.9	200.7
87.5°	47.2	53.1	64.9	59.0	59.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)