

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: P390413

Luminaire Tested: **22CZ2-50VHE-HRP-UNV-L940-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: P390413  
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: 22CZ2-50VHE-HRP-UNV-L940-CD1-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: 3694.4 lumens  
Efficiency: N/A  
Efficacy: 102.1 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

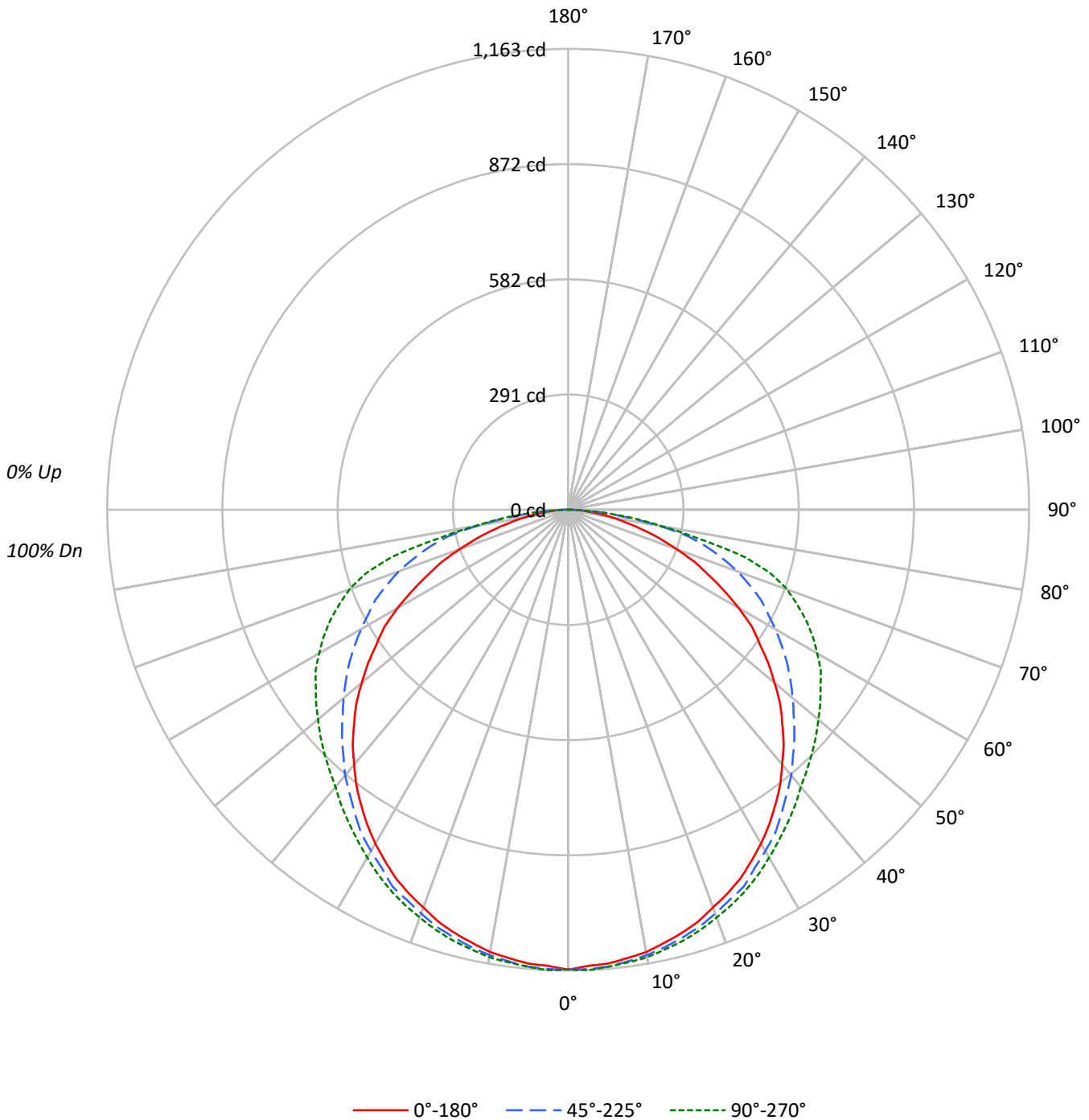
Input Watts (W): 36.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	3123	3123	3123
5°	3105	3128	3128
10°	3097	3119	3134
15°	3081	3112	3134
20°	3059	3105	3136
25°	3050	3115	3147
30°	3023	3091	3150
35°	2991	3080	3169
40°	2950	3074	3208
45°	2906	3072	3310
50°	2844	3095	3448
55°	2767	3162	3647
60°	2676	3247	3905
65°	2492	3409	4222
70°	2288	3571	4618
75°	2007	3759	4775
80°	1726	3580	3749
85°	1510	2600	2853



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.8	3.0
10°-20°	315.2	8.5
20°-30°	480.9	13.0
30°-40°	587.1	15.9
40°-50°	627.8	17.0
50°-60°	606.0	16.4
60°-70°	521.6	14.1
70°-80°	352.9	9.6
80°-90°	93.1	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°	905.8	24.5
0°-40°	1493.0	40.4
0°-60°	2726.7	73.8
0°-90°	3694.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3694.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1160	1160	1160	1160	1160	
5°	1150	1152	1158	1158	1158	109
15°	1106	1109	1117	1122	1125	312
25°	1027	1033	1049	1054	1060	473
35°	910	919	938	957	965	570
45°	764	777	807	848	870	589
55°	590	609	674	742	777	528
65°	391	429	535	620	663	389
75°	193	256	362	435	459	207
85°	49	68	84	87	92	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1160.5	1160.5	1160.5	1160.5	<i>1160.5</i>
2.5°	<i>1152.3</i>	<i>1155.0</i>	<i>1160.5</i>	<i>1160.5</i>	<i>1163.2</i>
5°	1149.6	1152.3	1157.8	1157.8	<i>1157.8</i>
7.5°	1141.5	1144.2	1149.6	1152.3	<i>1152.3</i>
10°	1133.3	1136.0	1141.5	1144.2	<i>1146.9</i>
12.5°	1119.7	1122.4	1130.6	1136.0	<i>1136.0</i>
15°	1106.1	1108.8	1117.0	1122.4	<i>1125.1</i>
17.5°	1089.8	1095.2	1103.4	1108.8	<i>1111.6</i>
20°	1068.1	1073.5	1084.4	1092.5	<i>1095.2</i>
22.5°	1049.0	1054.5	1065.4	1073.5	<i>1078.9</i>
25°	1027.3	1032.7	1049.0	1054.5	<i>1059.9</i>
27.5°	1000.1	1005.6	1019.2	1030.0	<i>1038.2</i>
30°	973.0	978.4	994.7	1008.3	<i>1013.7</i>
32.5°	943.1	951.2	970.2	981.1	<i>989.3</i>
35°	910.4	918.6	937.6	956.6	<i>964.8</i>
37.5°	877.8	886.0	905.0	929.5	<i>940.3</i>
40°	839.8	850.7	875.1	907.7	<i>913.2</i>
42.5°	804.5	818.0	839.8	877.8	<i>891.4</i>
45°	763.7	777.3	807.2	847.9	<i>869.7</i>
47.5°	725.6	739.2	771.8	820.8	<i>847.9</i>
50°	679.4	698.5	739.2	796.3	<i>823.5</i>
52.5°	636.0	652.3	706.6	769.1	<i>801.7</i>
55°	589.7	608.8	674.0	741.9	<i>777.3</i>
57.5°	549.0	565.3	638.7	714.8	<i>755.5</i>
60°	497.3	519.1	603.3	684.9	<i>725.6</i>
62.5°	443.0	475.6	568.0	652.3	<i>695.7</i>
65°	391.4	429.4	535.4	619.6	<i>663.1</i>
67.5°	345.2	385.9	494.6	584.3	<i>625.1</i>
70°	290.8	342.4	453.9	540.8	<i>587.0</i>
72.5°	241.9	299.0	407.7	494.6	<i>535.4</i>
75°	193.0	255.5	361.5	434.8	<i>459.3</i>
77.5°	149.5	209.3	309.8	331.6	<i>334.3</i>
80°	111.4	165.8	231.0	233.7	<i>241.9</i>
82.5°	76.1	116.9	149.5	163.1	<i>165.8</i>
85°	48.9	67.9	84.2	87.0	<i>92.4</i>
87.5°	21.7	24.5	29.9	27.2	<i>27.2</i>
90°	0.0	0.0	0.0	0.0	<i>0.0</i>

(END OF REPORT)