

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: P388704

Luminaire Tested: **24CZ2-170VHE-UNV-L935-CD2-SDWPD1-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: P388704  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-5)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-170VHE-UNV-L935-CD2-SDWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND RIBBED LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14041.0 lumens  
Efficiency: N/A  
Efficacy: 113.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.27 / 1.37  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

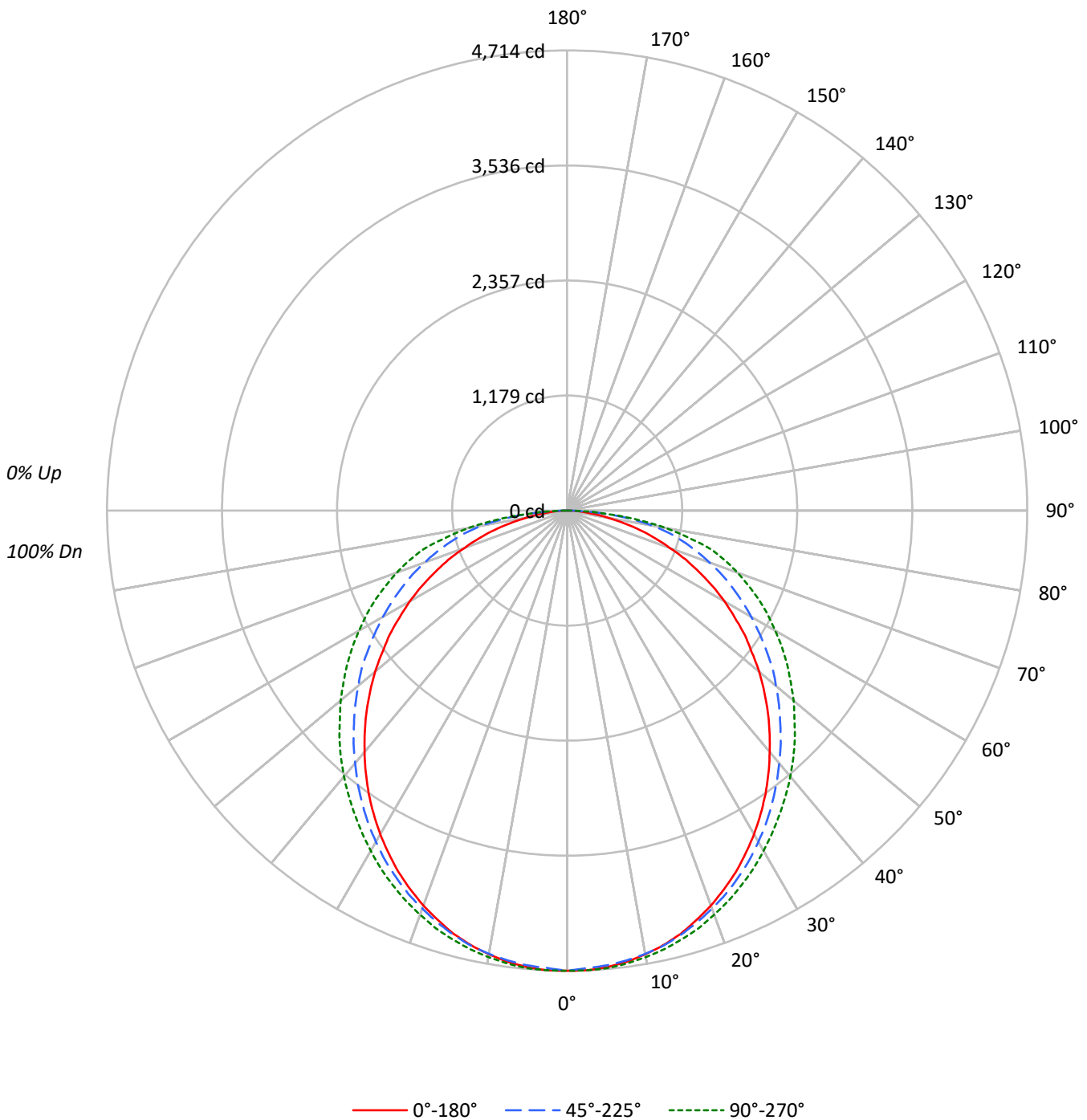
Input Watts (W): 123.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P388704

CATALOG NUMBER: 24CZ2-170VHE-UNV-L935-CD2-SDWPD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P388704

CATALOG NUMBER: 24CZ2-170VHE-UNV-L935-CD2-SDWPD1-U

**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	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	60	68	63	58	56
4	81	69	59	52	79	67	59	52	65	57	51	62	56	51	60	55	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	39	50	44	38	49	43	38	36
7	64	50	41	35	62	49	40	34	47	40	34	46	39	34	45	38	34	32
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28
9	55	42	33	28	54	41	33	28	40	33	27	39	32	27	38	32	27	25
10	52	38	30	25	51	38	30	25	37	30	25	36	29	25	35	29	25	23

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

	0°	45°	90°
0°	6343	6343	6343
5°	6342	6316	6354
10°	6306	6300	6345
15°	6253	6266	6332
20°	6166	6213	6307
25°	6066	6157	6282
30°	5948	6087	6254
35°	5819	6011	6235
40°	5671	5934	6247
45°	5528	5876	6277
50°	5375	5846	6337
55°	5210	5837	6453
60°	5006	5864	6620
65°	4744	5953	6908
70°	4406	6102	7300
75°	4020	6407	7917
80°	3304	6899	7916
85°	2532	6367	6800



TEST NUMBER: P388704

CATALOG NUMBER: 24CZ2-170VHE-UNV-L935-CD2-SDWPD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	445.9	3.2
10°-20°	1272.9	9.1
20°-30°	1915.5	13.6
30°-40°	2295.5	16.3
40°-50°	2392.1	17.0
50°-60°	2225.6	15.9
60°-70°	1833.1	13.1
70°-80°	1248.4	8.9
80°-90°	412.2	2.9
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°	3634.2	25.9
0°-40°	5929.7	42.2
0°-60°	10547.4	75.1
0°-90°	14041.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4714	4714	4714	4714	4714	
5°	4696	4696	4677	4700	4705	446
15°	4489	4494	4499	4541	4546	1265
25°	4086	4105	4147	4218	4232	1881
35°	3543	3585	3660	3758	3796	2215
45°	2905	2966	3088	3243	3299	2241
55°	2221	2296	2488	2685	2751	1980
65°	1490	1617	1870	2090	2170	1479
75°	773	947	1232	1453	1523	815
85°	164	319	412	440	440	203
90°	0	0	0	0	0	



TEST NUMBER: P388704

CATALOG NUMBER: 24CZ2-170VHE-UNV-L935-CD2-SDWPD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4714.2	4714.2	4714.2	4714.2	4714.2
2.5°	4714.2	4714.2	4690.8	4714.2	4714.2
5°	4695.5	4695.5	4676.7	4700.2	4704.8
7.5°	4662.7	4667.4	4648.6	4676.7	4681.4
10°	4615.8	4620.5	4611.1	4639.2	4643.9
12.5°	4559.6	4564.3	4564.3	4597.1	4601.8
15°	4489.3	4494.0	4498.7	4540.8	4545.5
17.5°	4400.2	4414.3	4423.7	4475.2	4484.6
20°	4306.5	4320.6	4339.3	4395.6	4404.9
22.5°	4198.7	4217.5	4250.3	4311.2	4325.3
25°	4086.3	4105.0	4147.2	4217.5	4231.5
27.5°	3959.8	3987.9	4039.4	4114.4	4133.1
30°	3828.5	3856.7	3917.6	3997.2	4025.4
32.5°	3688.0	3725.4	3795.7	3884.8	3912.9
35°	3542.7	3584.9	3659.8	3758.3	3795.7
37.5°	3388.1	3434.9	3523.9	3631.7	3678.6
40°	3228.7	3285.0	3378.7	3505.2	3556.7
42.5°	3069.4	3120.9	3238.1	3374.0	3430.2
45°	2905.4	2966.3	3088.1	3242.8	3299.0
47.5°	2736.7	2797.6	2942.9	3106.9	3158.4
50°	2568.0	2628.9	2792.9	2966.3	3027.2
52.5°	2385.2	2464.9	2652.3	2825.7	2886.6
55°	2221.2	2296.2	2488.3	2685.1	2750.7
57.5°	2033.8	2122.8	2333.7	2539.9	2610.2
60°	1860.4	1954.1	2179.0	2389.9	2460.2
62.5°	1682.3	1785.4	2024.4	2240.0	2319.6
65°	1490.2	1616.7	1869.8	2090.0	2169.7
67.5°	1316.8	1448.0	1715.1	1940.0	2010.3
70°	1120.0	1279.3	1551.1	1776.0	1855.7
72.5°	951.3	1110.6	1396.5	1616.7	1696.4
75°	773.2	946.6	1232.4	1452.7	1523.0
77.5°	595.1	787.3	1073.1	1241.8	1265.2
80°	426.4	627.9	890.4	988.8	1021.6
82.5°	299.9	482.7	656.1	721.7	740.4
85°	164.0	318.7	412.4	440.5	440.5
87.5°	70.3	135.9	164.0	168.7	173.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)