

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: P685443

Luminaire Tested: **4CZL-16-UNV-M-L850-CD-U**

Issue Date: 05/10/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P685443  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 05/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 4CZL-16-UNV-M-L850-CD-U  
Description: METALUX CRUZE LINEAR 4FT MEDIUM LENS MODEL @80 CRI and 5000K  
Light Source: (588) 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

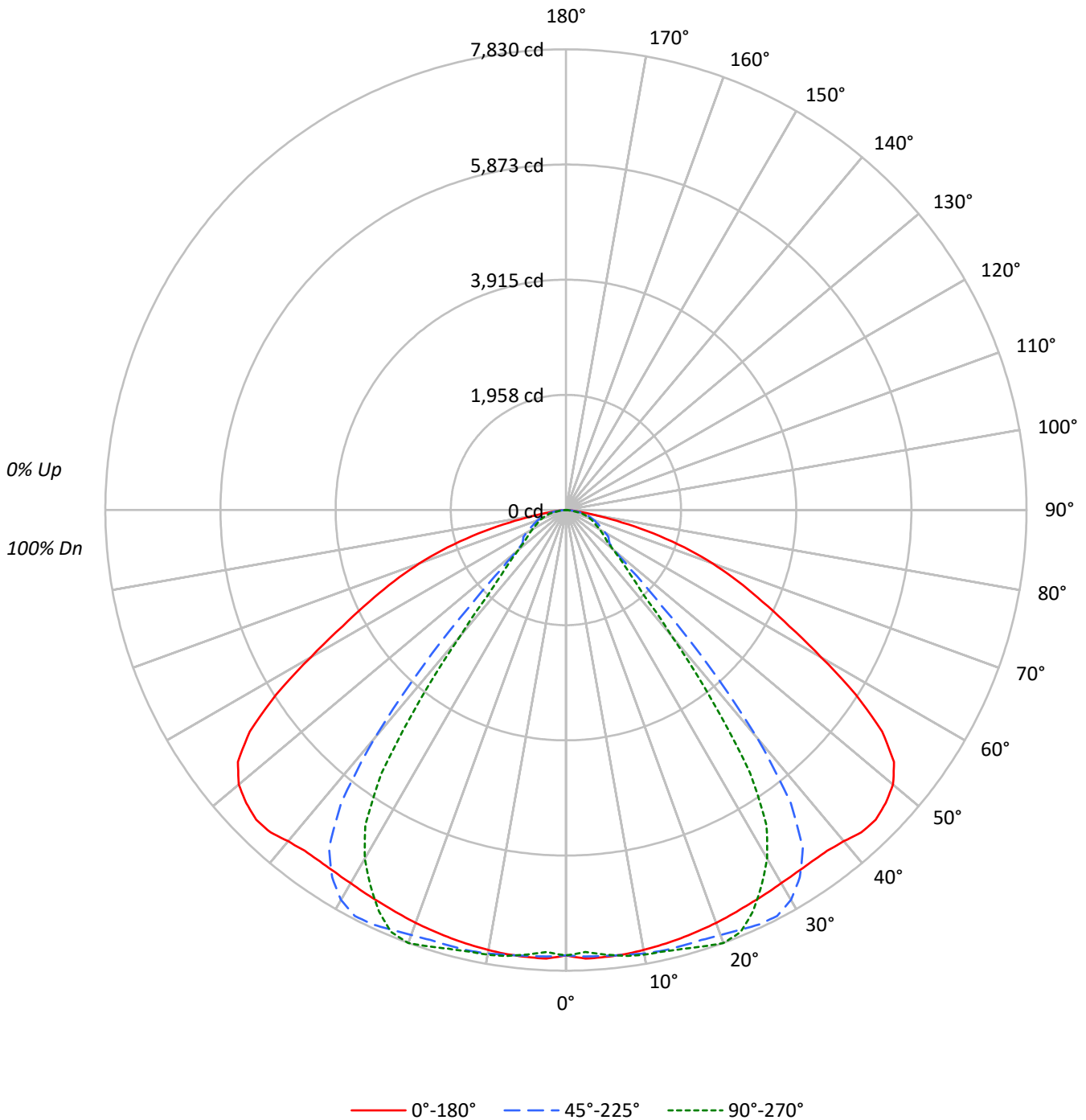
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16355.8 lumens  
Efficiency: N/A  
Efficacy: 158.8 lumens/watt  
Spacing Criteria (0/90/45): 1.48 / 1.28 / 1.22  
Luminous Opening: Rectangular (W 0.83' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 103  
Input Voltage (V): 120  
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: P685443  
CATALOG NUMBER: 4CZL-16-UNV-M-L850-CD-U

### Luminous Intensity Polar Plot





TEST NUMBER: P685443  
 CATALOG NUMBER: 4CZL-16-UNV-M-L850-CD-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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88
2	103	96	90	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77	77	77	77
3	95	86	80	74	93	85	79	73	82	77	72	79	75	71	77	73	70	68	68	68	68
4	88	78	71	65	86	77	70	64	74	68	64	72	67	63	70	66	62	60	60	60	60
5	82	71	63	57	80	70	63	57	68	61	56	66	60	56	64	59	55	53	53	53	53
6	76	65	57	51	75	64	56	51	62	55	51	61	55	50	59	54	50	48	48	48	48
7	71	59	51	46	70	59	51	46	57	50	46	56	50	45	54	49	45	43	43	43	43
8	67	55	47	42	65	54	47	41	53	46	41	51	45	41	50	45	41	39	39	39	39
9	63	50	43	38	61	50	43	38	49	42	38	48	42	37	47	41	37	36	36	36	36
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33	33	33	33

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

	0°	45°	90°
0°	24447	24447	24447
5°	24720	24650	24581
10°	24900	25094	25165
15°	25195	25627	25806
20°	25658	26410	26909
25°	26316	27695	26808
30°	27306	28529	25502
35°	28742	27675	21535
40°	30976	21343	11778
45°	34008	10493	7039
50°	36466	5483	5249
55°	36931	5005	4530
60°	32387	4989	4271
65°	28183	4793	4136
70°	25011	4857	4163
75°	19187	4987	4226
80°	9765	5066	3500
85°	3853	2857	997



TEST NUMBER: P685443  
 CATALOG NUMBER: 4CZL-16-UNV-M-L850-CD-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	725.4	4.4
10°-20°	2162.0	13.2
20°-30°	3489.1	21.3
30°-40°	4086.3	25.0
40°-50°	2781.8	17.0
50°-60°	1610.8	9.8
60°-70°	920.9	5.6
70°-80°	474.0	2.9
80°-90°	105.6	0.6
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°	6376.5	39.0
0°-40°	10462.8	64.0
0°-60°	14855.3	90.8
0°-90°	16355.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16355.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7570	7570	7570	7570	7570	
5°	7626	7551	7605	7596	7583	727
15°	7536	7525	7666	7685	7719	2134
25°	7386	7490	7773	7653	7524	3419
35°	7291	7651	7020	5920	5463	4590
45°	7447	5541	2298	1548	1541	5721
55°	6560	1902	889	828	805	5716
65°	3688	678	627	554	541	3698
75°	1538	419	400	349	339	1635
85°	104	127	77	36	27	176
90°	0	0	0	0	0	



TEST NUMBER: P685443

CATALOG NUMBER: 4CZL-16-UNV-M-L850-CD-U

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5	7570.5
2.5°	7631.5	7610.0	7566.9	7549.0	7549.0	7595.6	7602.8	7574.1	7568.7	7543.6	7520.3
5°	7626.1	7604.6	7563.4	7547.2	7552.6	7604.6	7617.1	7593.8	7601.0	7593.8	7583.1
7.5°	7615.3	7592.0	7554.4	7543.6	7559.8	7626.1	7647.6	7635.0	7651.2	7647.6	7644.0
10°	7593.8	7575.9	7540.1	7538.3	7570.5	7653.0	7679.9	7663.7	7669.1	7667.3	7674.5
12.5°	7565.1	7549.0	7518.5	7534.7	7581.3	7669.1	7687.0	7661.9	7669.1	7670.9	7683.4
15°	7536.5	7516.8	7497.0	7534.7	7583.1	7665.5	7683.4	7679.9	7701.4	7703.1	7719.3
17.5°	7500.6	7488.1	7482.7	7532.9	7570.5	7661.9	7703.1	7724.7	7753.3	7760.5	7776.6
20°	7466.6	7455.8	7468.4	7523.9	7565.1	7685.2	7742.6	7774.8	7805.3	7814.3	7830.4
22.5°	7425.3	7418.2	7452.2	7511.4	7574.1	7721.1	7785.6	7789.2	7776.6	7753.3	7764.1
25°	7385.9	7385.9	7436.1	7507.8	7601.0	7773.0	7778.4	7676.3	7584.9	7523.9	7523.9
27.5°	7353.7	7360.8	7423.6	7523.9	7653.0	7776.6	7627.9	7425.3	7290.9	7203.1	7197.7
30°	7323.2	7335.7	7423.6	7568.7	7690.6	7651.2	7362.6	7117.1	6930.7	6846.4	6839.3
32.5°	7301.7	7321.4	7455.8	7636.8	7645.8	7398.5	7022.1	6712.0	6491.6	6366.1	6344.6
35°	7290.9	7314.2	7516.8	7696.0	7464.8	7020.3	6486.2	6007.7	5658.2	5496.9	5462.8
37.5°	7298.1	7339.3	7601.0	7645.8	7011.3	6276.5	5509.4	4823.0	4342.7	4190.3	4084.6
40°	7348.3	7418.2	7667.3	7237.2	6059.6	5063.1	4046.9	3308.5	2977.0	2867.6	2794.1
42.5°	7432.5	7502.4	7493.5	6301.6	4733.4	3597.1	2607.7	2165.1	2003.8	1985.8	1951.8
45°	7446.9	7473.7	6930.7	5077.5	3442.9	2297.7	1679.4	1548.5	1544.9	1557.5	1541.3
47.5°	7371.6	7319.6	6118.8	3883.8	2371.2	1485.8	1263.5	1285.1	1295.8	1286.8	1274.3
50°	7258.7	7066.9	5208.3	2855.1	1580.8	1091.5	1102.2	1122.0	1084.3	1059.2	1044.9
52.5°	7029.3	6656.5	4197.5	2023.5	1093.3	932.0	1018.0	960.7	906.9	892.5	890.8
55°	6559.7	6047.1	3229.7	1458.9	835.2	889.0	905.1	831.6	815.5	808.3	804.7
57.5°	5844.6	5289.0	2428.5	1053.9	733.0	858.5	786.8	758.1	742.0	736.6	731.2
60°	5014.8	4441.2	1810.2	774.3	711.5	772.5	713.3	686.4	668.5	661.3	661.3
62.5°	4279.9	3675.9	1338.8	629.1	706.2	697.2	643.4	614.7	604.0	600.4	596.8
65°	3688.5	2957.2	966.0	582.5	659.6	627.3	575.3	555.6	548.4	541.3	541.3
67.5°	3161.6	2315.6	711.5	571.7	605.8	564.6	525.1	509.0	500.0	498.2	496.5
70°	2649.0	1706.2	541.3	559.2	575.3	514.4	476.7	457.0	446.3	440.9	440.9
72.5°	2109.5	1170.3	431.9	514.4	526.9	455.2	417.6	403.3	394.3	388.9	387.1
75°	1537.8	734.8	380.0	431.9	453.4	399.7	362.0	349.5	345.9	340.5	338.7
77.5°	978.6	439.1	324.4	353.1	371.0	336.9	308.3	292.1	290.3	285.0	283.2
80°	525.1	281.4	259.9	277.8	288.6	272.4	238.4	206.1	197.1	190.0	188.2
82.5°	243.7	179.2	193.6	209.7	215.1	173.8	143.4	129.0	120.1	111.1	105.7
85°	104.0	96.8	120.1	129.0	105.7	77.1	50.2	37.6	30.5	28.7	26.9
87.5°	37.6	37.6	44.8	30.5	17.9	14.3	14.3	12.5	10.8	9.0	9.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)