

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: P685633

Luminaire Tested: **4CZL-16-UNV-FUL-L935-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685633
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-16-UNV-FUL-L935-CD-U
Description: METALUX CRUZE LINEAR 4FT FROSTED LENS MODEL WITH UPLIGHT @90 CRI
and 3500K
Light Source: (588) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

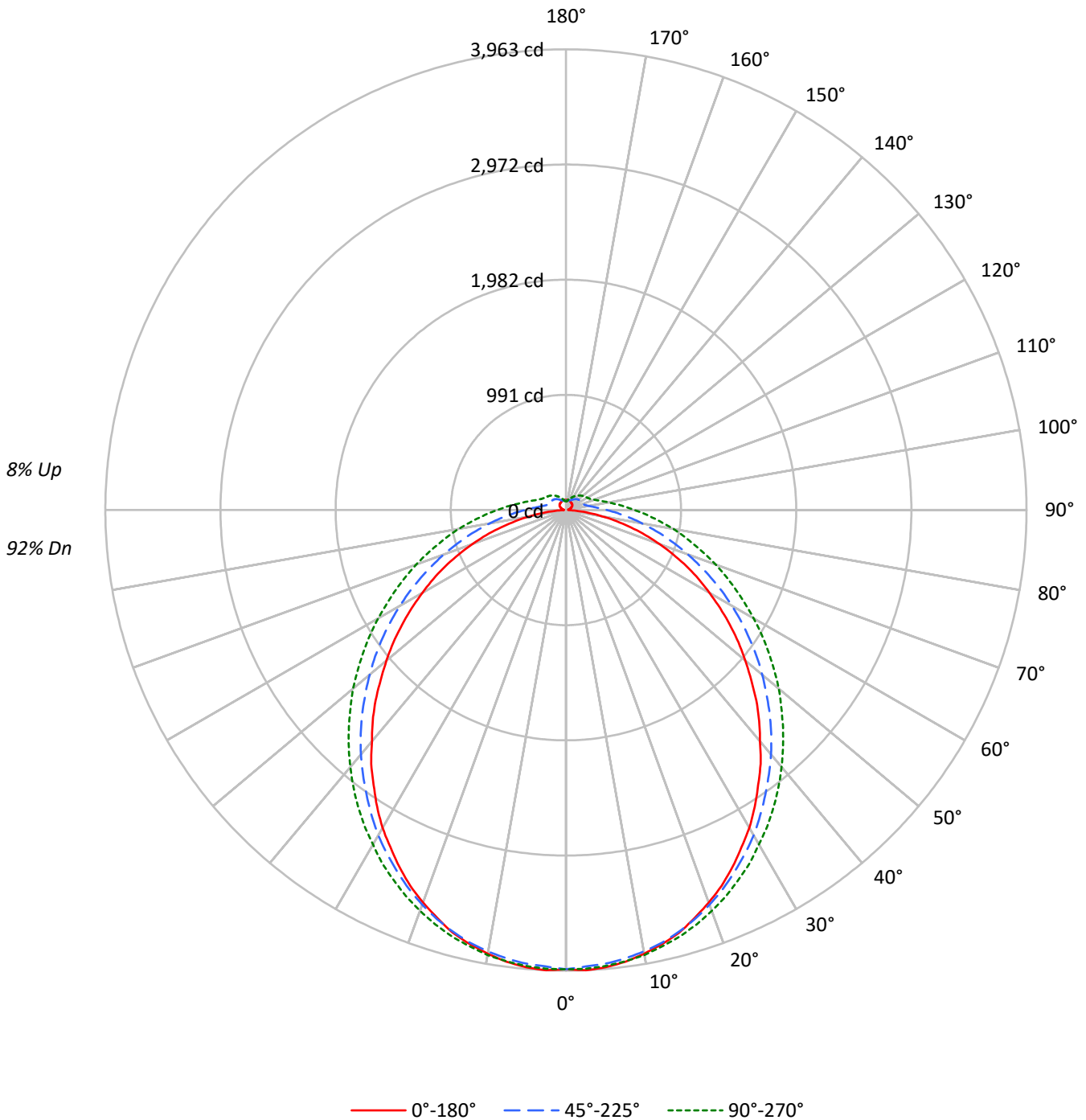
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12323.5 lumens
Efficiency: N/A
Efficacy: 119.6 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.25 / 1.34
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 103
Input Voltage (V): 120
Input Current (A_{in}): 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	50	30	10	50	30	10	50	30	10	0								
RCR																																			
0	117	117	117	117	113	113	113	113	107	107	107	100	100	100	95	95	95	95	95	95	95	95	95	95	95	95	95	95	92						
1	106	101	96	92	102	98	93	90	92	88	85	87	84	81	82	79	77	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75		
2	96	87	80	74	93	85	78	73	80	74	70	75	71	67	71	68	64	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	
3	87	77	68	61	84	74	67	60	70	64	58	66	61	56	63	58	54	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	
4	80	68	59	52	77	66	58	51	62	55	50	59	53	48	56	51	47	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	
5	74	61	51	45	71	59	50	44	56	49	43	53	47	42	50	45	41	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	
6	68	54	45	39	65	53	45	38	50	43	38	48	42	37	46	40	36	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	
7	63	49	41	34	61	48	40	34	46	39	33	44	37	32	42	36	32	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
8	59	45	37	31	57	44	36	30	42	35	30	40	34	29	38	33	28	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
9	55	41	33	28	53	40	33	27	39	32	27	37	31	26	35	30	26	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
10	51	38	30	25	50	37	30	25	36	29	24	34	28	24	33	27	23	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12756	12756	12756
5°	12751	12510	12544
10°	12616	12274	12311
15°	12447	12008	12047
20°	12163	11691	11756
25°	11847	11329	11442
30°	11494	10963	11102
35°	11047	10531	10775
40°	10579	10119	10416
45°	10154	9667	10050
50°	9644	9204	9698
55°	9147	8725	9310
60°	8589	8219	8948
65°	8034	7694	8607
70°	7241	7181	8350
75°	6260	6699	8121
80°	4874	6313	8179
85°	2844	6131	8423



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	373.7	3.0
10°-20°	1063.2	8.6
20°-30°	1587.5	12.9
30°-40°	1876.7	15.2
40°-50°	1912.4	15.5
50°-60°	1724.3	14.0
60°-70°	1364.4	11.1
70°-80°	922.1	7.5
80°-90°	515.7	4.2
90°-100°	280.6	2.3
100°-110°	184.1	1.5
110°-120°	146.0	1.2
120°-130°	124.2	1.0
130°-140°	99.3	0.8
140°-150°	71.1	0.6
150°-160°	45.8	0.4
160°-170°	24.8	0.2
170°-180°	7.7	0.1
0°-30°	3024.3	24.5
0°-40°	4901.0	39.8
0°-60°	8537.7	69.3
0°-90°	11339.9	92.0
90°-120°	610.6	5.0
90°-150°	905.3	7.3
90°-180°	984.0	8.0
0°-180°	12323.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3950	3950	3950	3950	3950	
5°	3948	3942	3917	3939	3938	374
15°	3765	3760	3756	3789	3797	1059
25°	3390	3405	3433	3497	3511	1560
35°	2884	2924	2991	3086	3116	1805
45°	2316	2362	2478	2594	2641	1784
55°	1721	1785	1928	2074	2126	1540
65°	1145	1203	1376	1545	1610	1131
75°	580	660	879	1074	1137	616
85°	113	254	489	679	747	139
90°	17	140	352	525	590	13
95°	19	92	258	413	470	16
105°	32	82	169	266	306	34
115°	51	88	150	206	229	50
125°	67	91	143	185	200	60
135°	74	90	133	166	177	58
145°	78	86	112	141	149	49
155°	83	84	93	116	120	38
165°	86	85	83	87	94	24
175°	87	86	82	72	73	8
180°	81	81	81	81	81	



TEST NUMBER: P685633

CATALOG NUMBER: 4CZL-16-UNV-FUL-L935-CD-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3950.3	3950.3	3950.3	3950.3	3950.3
2.5°	3963.0	3956.6	3930.5	3951.1	3950.3
5°	3947.9	3941.6	3917.0	3939.2	3937.6
7.5°	3918.6	3914.6	3891.7	3916.2	3915.4
10°	3875.8	3875.8	3856.0	3884.5	3886.9
12.5°	3824.3	3823.6	3813.3	3842.6	3842.6
15°	3764.9	3760.2	3756.2	3788.7	3796.6
17.5°	3680.2	3683.3	3690.5	3729.3	3737.2
20°	3593.0	3600.2	3613.6	3659.6	3669.9
22.5°	3499.6	3507.5	3528.9	3578.8	3595.4
25°	3389.5	3405.3	3433.0	3497.2	3510.7
27.5°	3270.7	3298.4	3334.0	3402.1	3425.1
30°	3156.6	3178.8	3230.3	3301.5	3321.3
32.5°	3025.1	3052.0	3112.2	3197.8	3224.7
35°	2884.1	2923.7	2991.0	3086.1	3116.2
37.5°	2752.6	2784.3	2867.5	2968.9	3004.5
40°	2597.4	2648.8	2744.7	2844.5	2885.7
42.5°	2461.1	2505.5	2613.2	2723.3	2766.1
45°	2316.2	2362.1	2478.5	2594.2	2640.9
47.5°	2160.9	2215.6	2339.9	2469.0	2512.6
50°	2015.1	2072.2	2205.3	2336.0	2390.6
52.5°	1871.8	1931.2	2069.0	2206.8	2257.5
55°	1721.3	1785.4	1928.0	2073.8	2126.0
57.5°	1573.9	1638.1	1790.2	1940.7	1996.9
60°	1425.8	1486.0	1649.2	1803.7	1865.4
62.5°	1287.2	1345.8	1513.7	1680.1	1733.9
65°	1145.4	1203.2	1375.9	1545.4	1609.6
67.5°	998.9	1068.6	1242.0	1419.5	1487.6
70°	854.7	926.0	1117.7	1302.2	1370.4
72.5°	718.5	799.2	992.5	1181.0	1250.8
75°	579.8	659.8	879.3	1074.1	1136.7
77.5°	449.1	542.6	768.4	964.8	1038.5
80°	324.0	430.1	668.5	861.0	938.7
82.5°	213.1	334.3	575.9	766.8	836.5
85°	113.3	254.3	488.7	678.8	747.0
87.5°	44.4	188.5	415.9	598.8	667.0
90°	17.4	140.2	351.7	525.2	590.1
92.5°	17.4	109.3	299.4	465.8	526.8
95°	19.0	91.9	258.2	412.7	470.5
97.5°	20.6	83.2	225.8	366.0	417.4
100°	23.8	80.0	201.2	327.9	374.7
102.5°	27.7	80.0	181.4	293.1	337.4
105°	32.5	81.6	168.7	266.2	305.8
107.5°	36.4	83.2	160.0	244.0	279.6
110°	41.2	85.5	155.3	227.3	258.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	45.9	87.1	152.1	215.5	242.4
115°	50.7	87.9	150.5	206.0	228.9
117.5°	55.4	89.5	148.9	199.6	219.4
120°	60.2	90.3	147.3	194.9	212.3
122.5°	64.2	90.3	145.7	190.1	206.0
125°	67.3	91.1	143.4	185.4	200.4
127.5°	69.7	91.9	141.8	180.6	194.1
130°	72.1	91.1	139.4	175.9	188.5
132.5°	73.7	90.3	136.2	171.1	183.0
135°	74.5	89.5	133.1	165.6	176.6
137.5°	75.3	88.7	128.3	160.0	170.3
140°	75.3	87.9	122.8	153.7	163.2
142.5°	76.0	86.3	117.2	147.3	156.0
145°	77.6	85.5	111.7	141.0	148.9
147.5°	79.2	84.0	106.9	133.9	141.0
150°	80.8	84.0	102.2	127.5	133.9
152.5°	81.6	84.0	97.4	122.0	126.7
155°	83.2	84.0	92.7	116.4	119.6
157.5°	84.0	84.0	89.5	109.3	112.5
160°	84.8	84.8	86.3	101.4	106.1
162.5°	86.3	84.8	84.8	93.5	99.8
165°	86.3	84.8	83.2	87.1	94.3
167.5°	87.1	85.5	82.4	82.4	89.5
170°	87.1	85.5	82.4	78.4	82.4
172.5°	87.1	85.5	82.4	75.3	76.8
175°	87.1	85.5	82.4	72.1	72.9
177.5°	87.1	85.5	81.6	69.7	72.9
180°	80.8	80.8	80.8	80.8	80.8

(END OF REPORT)