

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: METALUX

Report Number: P601062

Luminaire Tested: UHBS-24-MV-L850-U-CDL-120V

Issue Date: 8/28/2023

Test Information

Test Method: LM-79-2019
Report Number: P601062
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ()
Test Lab: INNOVATION CENTER
Issue Date: 8/28/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: UHBS-24-MV-L850-U-CDL-120V
Description: UHB Round Select with Clear Reflector with Lens Cover at 120V 24000 LUMEN SETTING AND 5000K
Light Source: -
Ballast/Driver: Electrical Driver

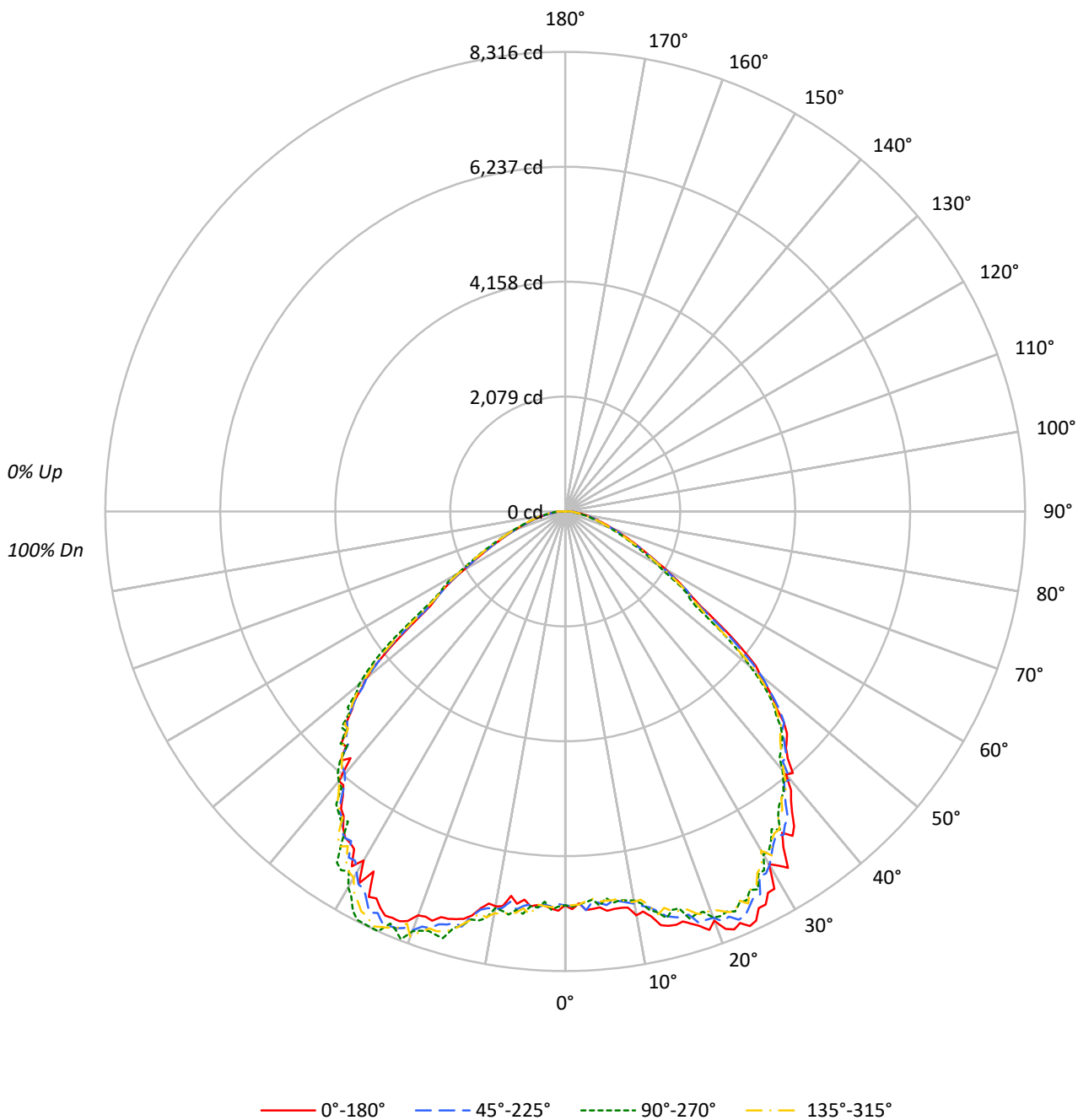
Summary

Lumens per Lamp: 20230 (1 lamp)
Luminaire Lumens: 20230.0 lumens
Efficiency: 100.0%
Efficacy: 133.1 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 1.45 / 1.48
Luminous Opening: Circular (Dia: 1.33' x H: 0')
CIE Type: Direct

Input Watts (W): 152
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: 24 FT

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CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-120V

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75				
3	93	84	76	71	91	82	75	70	79	74	69	77	72	68	74	70	66	64				
4	86	75	67	61	84	74	66	60	71	65	60	69	63	59	67	62	58	56				
5	79	67	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51	49				
6	73	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43				
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38				
8	64	51	43	37	62	50	42	37	49	42	37	47	41	36	46	41	36	34				
9	59	46	39	33	58	46	38	33	45	38	33	44	37	33	43	37	33	31				
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	40	34	30	28				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	55209	55209	55209	55209
5°	55930	55702	55792	55782
10°	58390	56239	57073	57349
15°	62124	59865	61259	62571
20°	64977	64460	64135	66625
25°	69830	66348	67662	70983
30°	65905	64116	65234	70224
35°	67778	63496	66217	64786
40°	62789	61847	64404	64459
45°	62168	60411	60983	61504
50°	55489	52776	56621	58643
55°	40352	37121	40039	43926
60°	32558	29880	32962	34763
65°	25897	23849	26188	27767
70°	21160	19035	21466	22739
75°	17979	15710	18165	19515
80°	16125	13577	16098	17892
85°	17112	14579	17201	19673

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 270°
 Vertical Angle: 89°
 Luminance: 63838 cd/sqm



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 CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-120V

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	685.9	3.4	3.4
10°-20°	2171.9	10.7	10.7
20°-30°	3642.8	18.0	18.0
30°-40°	4325.9	21.4	21.4
40°-50°	4266.4	21.1	21.1
50°-60°	2833.7	14.0	14.0
60°-70°	1429.4	7.1	7.1
70°-80°	645.7	3.2	3.2
80°-90°	228.4	1.1	1.1
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	6500.6	32.1	32.1
0°-40°	10826.5	53.5	53.5
0°-60°	17926.5	88.6	88.6
0°-90°	20230.0	100.0	100.0
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	20230.0	100.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7126	7126	7126	7126	7126	
5°	7191	7162	7174	7172	7191	692
15°	7745	7464	7637	7801	7745	2194
25°	8168	7761	7915	8303	8168	3693
35°	7166	6713	7001	6850	7166	4398
45°	5674	5514	5566	5613	5674	4288
55°	2987	2748	2964	3252	2987	2854
65°	1413	1301	1428	1515	1413	1423
75°	601	525	607	652	601	650
85°	192	164	194	221	192	231
90°	126	121	127	132	126	



TEST NUMBER: P601062
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CANDELA DISTRIBUTION (FULL):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8	7125.8
1°	7199.8	7115.9	7169.4	7153.1	7156.9	7096.2	7223.7	7093.2	7118.1	7153.0	7260.3
2°	7095.6	7061.4	7098.0	7112.4	7182.0	7050.7	7192.1	7188.6	7114.5	7212.3	7169.2
3°	7218.6	7225.5	7227.4	7081.6	7102.1	7026.0	7141.3	7104.7	7142.0	7073.4	7146.9
4°	7208.4	7073.1	7069.2	7038.0	7092.5	6956.9	7137.7	7096.2	7273.9	7183.5	7179.7
5°	7191.4	7144.8	7075.3	7162.1	7071.7	7101.5	7173.6	7141.8	7135.4	7172.3	7323.3
6°	7265.9	7111.4	7216.0	7032.5	7128.3	7037.0	7064.8	7130.1	7217.1	7319.9	7240.7
7°	7247.4	7081.9	7103.7	7135.2	7134.8	7030.5	7153.6	7235.7	7273.2	7264.8	7380.7
8°	7243.0	7168.2	7073.6	7097.6	7114.7	7018.8	7021.6	7203.2	7061.6	7365.5	7349.8
9°	7257.2	7136.0	7188.0	7125.4	7219.2	7118.8	7230.7	7269.8	7254.3	7313.2	7345.7
10°	7421.8	7224.2	7189.2	7148.5	7230.4	7110.9	7254.5	7234.3	7382.1	7289.5	7514.2
11°	7373.1	7319.1	7217.2	7226.0	7100.9	7207.3	7226.8	7236.6	7387.4	7498.1	7503.4
12°	7490.4	7425.3	7218.5	7376.3	7337.2	7245.8	7340.6	7363.8	7368.1	7571.7	7442.9
13°	7683.1	7555.8	7278.4	7446.4	7613.8	7352.3	7503.2	7406.9	7615.8	7574.5	7613.3
14°	7726.2	7619.8	7472.6	7582.2	7464.6	7317.1	7597.1	7647.1	7837.8	7724.2	7717.2
15°	7745.1	7663.0	7538.1	7463.5	7529.5	7442.2	7637.3	7718.8	7707.8	7800.8	7925.6
16°	7719.0	7659.5	7620.1	7471.6	7539.0	7506.0	7668.6	7730.1	7818.3	8031.1	7923.5
17°	7799.7	7732.5	7518.4	7704.0	7597.1	7463.5	7674.4	7757.0	7864.2	8011.1	8019.2
18°	7889.6	7861.5	7798.2	7661.8	7641.0	7644.3	7786.1	7851.0	7993.8	7980.9	7966.0
19°	8007.2	7920.6	7714.8	7659.3	7802.2	7635.7	7755.4	7872.2	8022.0	8024.1	8024.4
20°	7880.8	7931.4	7715.6	7818.1	7672.8	7671.7	7778.7	8054.9	8072.8	8080.6	8218.8
21°	8089.4	8001.7	7884.8	7842.3	7708.6	7759.4	7939.1	8005.9	8133.9	8291.9	8113.1
22°	8155.5	7902.9	7909.5	7806.8	7772.6	7861.4	7999.2	8020.2	8245.9	8170.7	8217.4
23°	8091.8	8053.4	7997.4	7864.3	7866.9	7874.0	7991.7	8076.2	8214.8	8098.3	8273.9
24°	8213.0	8007.9	8002.4	7752.2	7687.3	7716.7	8006.7	8033.1	8253.3	8316.2	8297.7
25°	8168.5	7889.6	7880.7	7761.1	7797.6	7855.6	7914.9	7930.1	8103.7	8303.3	8376.3
26°	7984.5	7753.9	7780.5	7620.2	7567.4	7669.6	7789.2	7998.9	8147.8	8297.8	8199.8
27°	7981.3	7695.7	7851.7	7675.5	7697.8	7536.0	7829.0	7797.2	8011.4	8291.3	8315.0
28°	7812.0	7527.0	7416.0	7437.2	7470.4	7333.3	7375.6	7563.3	7928.7	8180.9	8049.0
29°	7806.8	7573.5	7404.9	7420.2	7324.9	7345.7	7690.1	7530.0	7900.4	7976.1	8014.9
30°	7366.7	7472.3	7313.7	7166.7	7044.9	7119.2	7291.7	7658.6	7425.1	7849.4	7533.9
31°	7473.7	7346.7	7140.3	7153.3	7242.8	7286.6	7489.4	7336.7	7413.7	7593.7	7733.7
32°	7602.8	7231.8	6966.7	7022.5	6922.4	7128.4	7206.1	7432.5	7337.1	7652.2	7571.2
33°	7242.3	6933.1	7049.7	6853.0	6942.5	6944.5	7146.3	7143.2	7073.1	7579.6	7221.5
34°	7012.3	7191.7	6927.1	6945.9	6874.3	6994.9	7116.9	7056.0	7190.7	7232.9	7421.2
35°	7166.0	6926.4	6930.5	6713.3	6699.7	6711.9	7000.9	7140.5	6974.4	6849.7	7213.9
36°	7042.4	6961.9	6727.6	6578.2	6640.7	6720.9	6815.9	6839.3	6869.3	6905.0	6930.0
37°	6814.8	6595.9	6646.6	6499.7	6513.7	6481.4	6732.8	6882.7	6701.3	6815.3	6839.8
38°	6634.1	6468.8	6411.6	6412.0	6465.4	6476.2	6534.1	6652.8	6480.6	6724.0	6733.8
39°	6489.0	6212.7	6366.5	6265.6	6299.3	6395.7	6371.5	6338.5	6327.4	6429.5	6522.5
40°	6208.1	6281.2	6390.4	6115.0	6100.5	6192.8	6367.8	6164.4	6227.9	6373.2	6416.2
41°	6274.1	6081.4	5900.3	5909.4	5988.1	5995.7	5917.2	6223.9	6047.3	6271.5	6195.5
42°	6014.5	5966.3	6009.8	5827.8	5801.9	5876.4	6068.4	6190.4	5974.2	6091.8	6000.6
43°	5854.9	5860.6	5792.6	5748.5	5645.0	5755.1	5805.3	5737.2	5770.9	5774.1	5852.9
44°	5764.8	5670.1	5705.9	5650.7	5594.0	5602.6	5831.5	5845.6	5567.7	5846.2	5824.7



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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	5673.8	5500.1	5625.8	5513.5	5486.3	5575.4	5565.7	5637.4	5512.9	5613.2	5559.4
46°	5495.1	5457.0	5545.1	5305.8	5293.4	5422.7	5500.6	5513.9	5451.9	5624.1	5549.7
47°	5228.7	5312.9	5328.4	5166.8	5192.4	5232.6	5275.7	5343.1	5262.4	5327.2	5310.0
48°	5057.0	5123.8	5073.5	4953.2	4891.4	5068.3	5145.3	5159.2	5070.9	5294.6	5191.6
49°	4842.9	4814.4	4898.1	4689.0	4712.3	4810.6	4869.1	4947.4	4779.8	5001.9	5031.0
50°	4603.6	4637.0	4638.3	4378.5	4381.9	4578.2	4697.5	4728.9	4630.2	4865.3	4781.8
51°	4434.1	4314.8	4387.4	4080.0	3939.7	4294.7	4413.7	4438.8	4318.3	4619.1	4509.4
52°	4093.1	3890.6	4072.1	3718.5	3627.6	3851.0	4050.9	4193.4	4084.7	4344.3	4233.4
53°	3742.1	3603.4	3659.0	3316.0	3265.9	3502.6	3677.0	3813.4	3740.9	4012.6	3858.5
54°	3363.8	3214.7	3291.5	2916.0	3030.3	3158.5	3284.0	3431.0	3284.5	3621.0	3496.0
55°	2987.3	2901.7	2926.5	2748.1	2843.8	2927.7	2964.1	3049.0	2950.6	3251.9	3135.2
56°	2784.8	2709.9	2756.0	2665.8	2687.7	2784.1	2814.7	2856.5	2765.2	2921.9	2878.3
57°	2608.5	2594.7	2627.5	2490.0	2511.8	2626.8	2681.3	2694.8	2627.9	2716.7	2705.3
58°	2444.5	2425.5	2426.9	2252.8	2324.1	2407.7	2504.9	2556.7	2489.0	2596.9	2566.3
59°	2268.0	2225.3	2243.5	2059.2	2136.9	2218.4	2327.3	2367.0	2301.7	2455.4	2430.7
60°	2101.1	2045.5	2065.5	1928.3	1969.7	2062.3	2127.2	2167.6	2104.8	2243.4	2238.8
61°	1929.4	1881.3	1907.2	1793.7	1836.1	1893.5	1962.9	2011.1	1935.8	2067.4	2073.9
62°	1781.6	1736.5	1767.4	1644.7	1706.9	1753.5	1819.0	1877.9	1789.5	1915.7	1910.8
63°	1636.1	1610.6	1638.1	1515.0	1558.4	1611.6	1673.2	1744.4	1642.2	1795.2	1770.6
64°	1519.8	1478.2	1507.4	1387.6	1441.4	1506.5	1536.8	1597.5	1516.1	1657.7	1632.7
65°	1412.6	1345.8	1359.4	1300.9	1324.4	1385.4	1428.5	1473.5	1409.7	1514.6	1506.1
66°	1299.2	1238.0	1245.5	1204.5	1217.0	1274.8	1320.6	1356.1	1303.6	1403.1	1395.8
67°	1199.2	1148.3	1158.2	1098.0	1116.3	1162.5	1219.3	1253.6	1207.5	1292.1	1287.4
68°	1098.5	1058.7	1083.1	1007.1	1018.0	1062.7	1122.4	1147.8	1112.2	1190.6	1182.3
69°	1015.2	973.4	995.7	920.3	931.6	970.2	1027.6	1054.0	1015.0	1093.9	1087.8
70°	934.1	891.6	911.0	840.3	854.8	889.4	947.6	970.1	929.3	1003.8	1009.0
71°	864.4	823.9	833.2	771.3	790.3	826.3	871.6	891.3	854.5	926.8	931.0
72°	790.7	760.5	777.0	702.9	721.4	757.6	796.2	815.6	783.4	850.1	855.2
73°	723.6	688.1	712.0	641.8	656.5	689.7	721.5	745.0	721.2	779.8	783.5
74°	659.6	628.8	641.4	580.2	595.8	623.3	662.1	679.8	660.0	713.4	720.1
75°	600.6	576.2	577.9	524.8	535.3	564.4	606.8	614.9	599.0	651.9	657.6
76°	544.0	521.9	526.8	471.2	481.9	513.2	552.8	556.8	540.7	597.0	596.4
77°	491.3	470.9	478.4	424.3	432.7	464.0	500.9	505.4	486.1	542.9	544.8
78°	445.1	423.5	432.1	380.7	388.7	417.7	448.8	458.6	435.7	490.2	498.0
79°	401.9	377.0	391.4	342.0	347.4	372.0	404.0	413.2	393.1	444.2	451.4
80°	361.4	336.3	350.9	304.3	307.1	329.4	360.8	369.8	352.2	401.0	406.8
81°	323.5	298.5	312.7	266.6	273.3	292.9	322.1	330.2	316.0	358.2	362.9
82°	285.5	265.5	274.5	233.1	239.9	256.4	283.0	293.3	282.7	321.1	323.4
83°	250.2	232.3	239.5	204.0	209.4	224.7	247.9	256.3	247.4	284.8	283.9
84°	217.6	203.3	208.4	181.4	186.1	198.2	217.9	223.9	216.9	251.5	250.1
85°	192.5	181.9	185.3	164.0	167.7	177.3	193.5	197.6	191.5	221.3	219.3
86°	173.3	164.7	166.8	149.4	152.3	160.6	174.1	177.0	172.0	196.1	193.9
87°	157.1	149.5	151.5	137.0	140.1	147.2	159.1	159.9	155.1	175.8	173.8
88°	143.5	137.1	138.8	127.4	130.3	135.1	144.2	146.2	142.0	159.8	157.4
89°	132.0	127.8	128.6	124.2	126.7	128.0	132.5	134.3	131.1	143.8	143.5



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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
90°	126.0	123.6	124.3	120.8	123.5	124.2	126.8	127.2	125.7	132.0	131.7



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CANDELA DISTRIBUTION (continued):

	330°	360°
0°	7125.8	7125.8
1°	7032.3	7199.8
2°	7158.9	7095.6
3°	7154.1	7218.6
4°	7085.0	7208.4
5°	7318.9	7191.4
6°	7204.2	7265.9
7°	7247.4	7247.4
8°	7327.6	7243.0
9°	7383.9	7257.2
10°	7253.2	7421.8
11°	7459.3	7373.1
12°	7422.1	7490.4
13°	7545.1	7683.1
14°	7686.5	7726.2
15°	7754.7	7745.1
16°	7873.2	7719.0
17°	7863.4	7799.7
18°	7902.1	7889.6
19°	8047.0	8007.2
20°	8167.2	7880.8
21°	7862.1	8089.4
22°	8034.0	8155.5
23°	8087.2	8091.8
24°	8158.1	8213.0
25°	8181.6	8168.5
26°	8098.5	7984.5
27°	7932.6	7981.3
28°	7935.6	7812.0
29°	7740.6	7806.8
30°	7767.6	7366.7
31°	7469.4	7473.7
32°	7381.6	7602.8
33°	7220.1	7242.3
34°	7213.8	7012.3
35°	7091.4	7166.0
36°	6769.3	7042.4
37°	6710.3	6814.8
38°	6644.9	6634.1
39°	6485.5	6489.0
40°	6307.5	6208.1
41°	6124.2	6274.1
42°	6058.4	6014.5
43°	5968.0	5854.9
44°	5711.7	5764.8



TEST NUMBER: P601062
CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-120V

CANDELA DISTRIBUTION (continued):

	330°	360°
45°	5551.1	5673.8
46°	5544.9	5495.1
47°	5302.8	5228.7
48°	5153.6	5057.0
49°	4920.3	4842.9
50°	4722.6	4603.6
51°	4460.6	4434.1
52°	4189.7	4093.1
53°	3813.6	3742.1
54°	3432.0	3363.8
55°	3048.9	2987.3
56°	2813.1	2784.8
57°	2654.0	2608.5
58°	2534.9	2444.5
59°	2357.9	2268.0
60°	2162.3	2101.1
61°	2015.1	1929.4
62°	1867.5	1781.6
63°	1736.6	1636.1
64°	1603.0	1519.8
65°	1473.3	1412.6
66°	1368.0	1299.2
67°	1255.4	1199.2
68°	1159.5	1098.5
69°	1073.1	1015.2
70°	988.7	934.1
71°	907.6	864.4
72°	831.1	790.7
73°	761.0	723.6
74°	696.3	659.6
75°	639.0	600.6
76°	579.8	544.0
77°	526.5	491.3
78°	481.0	445.1
79°	430.7	401.9
80°	389.6	361.4
81°	345.7	323.5
82°	307.2	285.5
83°	271.6	250.2
84°	239.2	217.6
85°	209.3	192.5
86°	186.8	173.3
87°	168.5	157.1
88°	151.8	143.5
89°	139.0	132.0



TEST NUMBER: P601062
CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-120V

CANDELA DISTRIBUTION (continued):

	330°	360°
90°	129.7	126.0

(END OF REPORT)