

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: HALO COMMERCIAL

Report Number: P776467

Luminaire Tested: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776467
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B063-HCD82TRH)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD82TRH-4000lm-3500K
Description: 8 INCH ROUND NARROW HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4428.2 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.67
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

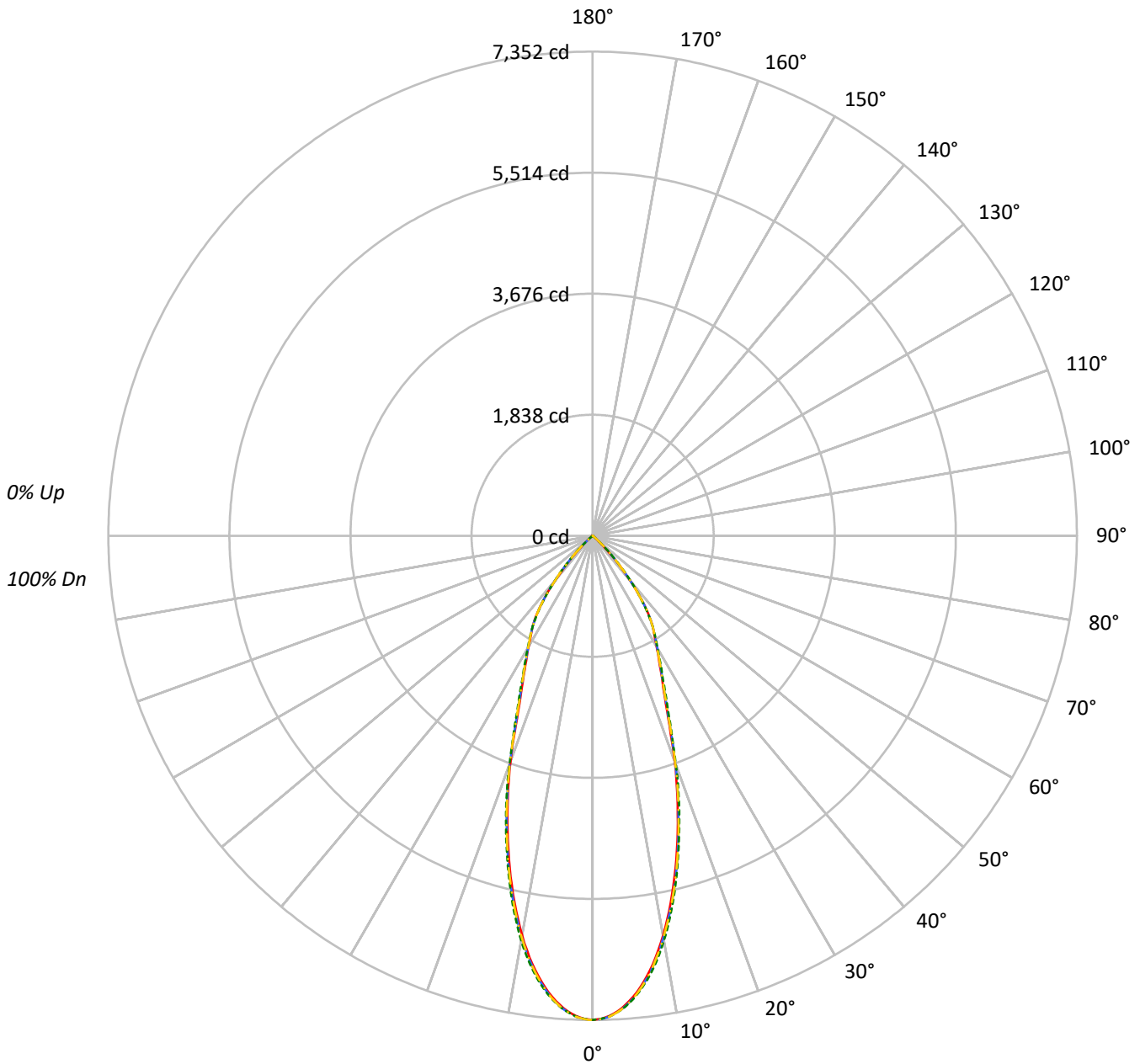
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94																			
2	108	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88																			
3	103	97	93	89	101	96	92	88	93	90	87	91	88	85	89	86	84	82																			
4	98	91	86	82	97	90	85	82	88	84	81	86	82	80	84	81	79	77																			
5	94	86	80	76	92	85	80	76	83	79	75	82	78	75	80	77	74	72																			
6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	69	68																			
7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	65	64																			
8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61																			
9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57																			
10	74	65	60	56	73	65	60	56	64	59	56	63	59	56	63	58	56	54																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	224453	224453	224453	224453
5°	215457	216444	215457	216444
10°	191048	193439	191048	193439
15°	156140	158665	156140	158665
20°	118454	119939	118454	119939
25°	85409	87726	85409	87726
30°	68518	69569	68518	69569
35°	56085	55611	56085	55611
40°	35184	35925	35184	35925
45°	13402	15548	13402	15548
50°	2000	2812	2000	2812
55°	421	442	421	442
60°	269	269	269	269
65°	173	173	173	173
70°	107	143	107	143
75°	94	94	94	94
80°	70	70	70	70
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 15548 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	645.7	14.6
10°-20°	1370.0	30.9
20°-30°	1203.1	27.2
30°-40°	908.6	20.5
40°-50°	286.3	6.5
50°-60°	11.0	0.2
60°-70°	2.7	0.1
70°-80°	0.8	0.0
80°-90°	0.1	0.0
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°	3218.7	72.7
0°-40°	4127.3	93.2
0°-60°	4424.6	99.9
0°-90°	4428.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4428.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7352	7352	7352	7352	7352	
5°	7030	7062	7030	7062	7030	643
15°	4940	5020	4940	5020	4940	1359
25°	2535	2604	2535	2604	2535	1192
35°	1505	1492	1505	1492	1505	907
45°	310	360	310	360	310	271
55°	8	8	8	8	8	9
65°	2	2	2	2	2	3
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8
0.5°	7345.1	7346.6	7350.6	7352.2	7345.1	7352.2	7350.6	7346.6	7345.1	7346.6	7350.6
1°	7335.1	7337.1	7341.1	7343.9	7336.7	7343.9	7341.1	7337.1	7335.1	7337.1	7341.1
1.5°	7318.4	7320.8	7326.0	7329.2	7322.0	7329.2	7326.0	7320.8	7318.4	7320.8	7326.0
2°	7296.2	7298.2	7304.9	7308.9	7302.1	7308.9	7304.9	7298.2	7296.2	7298.2	7304.9
2.5°	7265.6	7269.5	7277.5	7282.3	7275.9	7282.3	7277.5	7269.5	7265.6	7269.5	7277.5
3°	7231.0	7235.0	7244.5	7250.5	7244.5	7250.5	7244.5	7235.0	7231.0	7235.0	7244.5
3.5°	7189.6	7194.4	7205.1	7212.7	7208.3	7212.7	7205.1	7194.4	7189.6	7194.4	7205.1
4°	7141.6	7147.5	7160.2	7169.4	7165.4	7169.4	7160.2	7147.5	7141.6	7147.5	7160.2
4.5°	7088.7	7094.3	7109.4	7120.5	7116.5	7120.5	7109.4	7094.3	7088.7	7094.3	7109.4
5°	7030.3	7036.2	7052.9	7066.0	7062.5	7066.0	7052.9	7036.2	7030.3	7036.2	7052.9
5.5°	6965.9	6972.2	6989.7	7004.8	7003.2	7004.8	6989.7	6972.2	6965.9	6972.2	6989.7
6°	6895.5	6902.3	6921.4	6938.9	6939.2	6938.9	6921.4	6902.3	6895.5	6902.3	6921.4
6.5°	6822.0	6827.6	6848.6	6868.1	6869.3	6868.1	6848.6	6827.6	6822.0	6827.6	6848.6
7°	6741.7	6748.1	6769.9	6791.8	6796.2	6791.8	6769.9	6748.1	6741.7	6748.1	6769.9
7.5°	6657.4	6662.6	6685.3	6708.3	6714.7	6708.3	6685.3	6662.6	6657.4	6662.6	6685.3
8°	6566.8	6572.8	6596.6	6621.7	6629.6	6621.7	6596.6	6572.8	6566.8	6572.8	6596.6
8.5°	6473.0	6478.2	6502.0	6530.3	6539.4	6530.3	6502.0	6478.2	6473.0	6478.2	6502.0
9°	6372.5	6379.2	6404.3	6434.5	6444.8	6434.5	6404.3	6379.2	6372.5	6379.2	6404.3
9.5°	6269.9	6277.1	6300.9	6332.7	6344.6	6332.7	6300.9	6277.1	6269.9	6277.1	6300.9
10°	6162.6	6170.6	6195.2	6229.8	6239.7	6229.8	6195.2	6170.6	6162.6	6170.6	6195.2
10.5°	6051.7	6059.7	6085.1	6121.7	6131.2	6121.7	6085.1	6059.7	6051.7	6059.7	6085.1
11°	5933.3	5946.0	5971.8	6010.0	6018.3	6010.0	5971.8	5946.0	5933.3	5946.0	5971.8
11.5°	5819.2	5829.5	5855.4	5892.3	5902.3	5892.3	5855.4	5829.5	5819.2	5829.5	5855.4
12°	5698.0	5710.3	5736.9	5774.3	5783.4	5774.3	5736.9	5710.3	5698.0	5710.3	5736.9
12.5°	5576.4	5589.1	5616.1	5651.5	5659.4	5651.5	5616.1	5589.1	5576.4	5589.1	5616.1
13°	5451.6	5465.9	5494.9	5530.3	5536.6	5530.3	5494.9	5465.9	5451.6	5465.9	5494.9
13.5°	5326.8	5341.1	5371.3	5402.3	5411.4	5402.3	5371.3	5341.1	5326.8	5341.1	5371.3
14°	5198.8	5214.3	5244.9	5273.1	5283.0	5273.1	5244.9	5214.3	5198.8	5214.3	5244.9
14.5°	5069.6	5085.5	5116.5	5143.1	5151.5	5143.1	5116.5	5085.5	5069.6	5085.5	5116.5
15°	4940.0	4956.3	4986.9	5014.0	5019.9	5014.0	4986.9	4956.3	4940.0	4956.3	4986.9
15.5°	4810.1	4826.0	4856.6	4882.4	4891.5	4882.4	4856.6	4826.0	4810.1	4826.0	4856.6
16°	4680.9	4694.8	4725.4	4751.2	4762.0	4751.2	4725.4	4694.8	4680.9	4694.8	4725.4
16.5°	4553.3	4565.2	4595.8	4620.9	4632.4	4620.9	4595.8	4565.2	4553.3	4565.2	4595.8
17°	4422.1	4435.3	4463.1	4492.5	4501.2	4492.5	4463.1	4435.3	4422.1	4435.3	4463.1
17.5°	4291.4	4304.5	4332.3	4362.1	4372.5	4362.1	4332.3	4304.5	4291.4	4304.5	4332.3
18°	4163.0	4172.9	4202.7	4231.8	4242.1	4231.8	4202.7	4172.9	4163.0	4172.9	4202.7
18.5°	4034.6	4044.5	4071.2	4099.4	4110.5	4099.4	4071.2	4044.5	4034.6	4044.5	4071.2
19°	3905.8	3915.4	3941.6	3965.5	3978.2	3965.5	3941.6	3915.4	3905.8	3915.4	3941.6
19.5°	3777.1	3787.4	3808.9	3829.1	3839.1	3829.1	3808.9	3787.4	3777.1	3787.4	3808.9
20°	3645.9	3654.6	3671.7	3691.2	3691.6	3691.2	3671.7	3654.6	3645.9	3654.6	3671.7
20.5°	3513.1	3518.7	3537.0	3555.3	3552.9	3555.3	3537.0	3518.7	3513.1	3518.7	3537.0
21°	3377.6	3386.8	3404.2	3422.1	3421.7	3422.1	3404.2	3386.8	3377.6	3386.8	3404.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	3000.8	3011.9	3027.8	3056.9	3069.6	3056.9	3027.8	3011.9	3000.8	3011.9	3027.8
23°	2892.3	2900.7	2919.7	2944.4	2958.7	2944.4	2919.7	2900.7	2892.3	2900.7	2919.7
23.5°	2785.0	2805.7	2820.8	2841.0	2855.0	2841.0	2820.8	2805.7	2785.0	2805.7	2820.8
24°	2700.7	2708.7	2729.8	2751.6	2769.9	2751.6	2729.8	2708.7	2700.7	2708.7	2729.8
24.5°	2613.7	2623.2	2643.9	2665.8	2687.6	2665.8	2643.9	2623.2	2613.7	2623.2	2643.9
25°	2535.4	2545.3	2564.8	2583.5	2604.2	2583.5	2564.8	2545.3	2535.4	2545.3	2564.8
25.5°	2468.2	2472.6	2488.5	2504.4	2522.3	2504.4	2488.5	2472.6	2468.2	2472.6	2488.5
26°	2401.8	2405.8	2416.2	2431.3	2442.0	2431.3	2416.2	2405.8	2401.8	2405.8	2416.2
26.5°	2333.1	2339.1	2351.4	2364.5	2371.2	2364.5	2351.4	2339.1	2333.1	2339.1	2351.4
27°	2266.7	2273.9	2289.8	2304.1	2310.8	2304.1	2289.8	2273.9	2266.7	2273.9	2289.8
27.5°	2205.9	2212.7	2228.2	2243.3	2252.8	2243.3	2228.2	2212.7	2205.9	2212.7	2228.2
28°	2149.9	2155.4	2168.1	2182.1	2190.0	2182.1	2168.1	2155.4	2149.9	2155.4	2168.1
28.5°	2096.6	2101.4	2112.1	2123.6	2132.4	2123.6	2112.1	2101.4	2096.6	2101.4	2112.1
29°	2044.9	2048.9	2059.2	2070.4	2075.9	2070.4	2059.2	2048.9	2044.9	2048.9	2059.2
29.5°	1993.3	1997.6	2008.0	2018.3	2023.5	2018.3	2008.0	1997.6	1993.3	1997.6	2008.0
30°	1943.6	1947.6	1957.5	1967.4	1973.4	1967.4	1957.5	1947.6	1943.6	1947.6	1957.5
30.5°	1895.5	1898.7	1909.0	1918.9	1924.9	1918.9	1909.0	1898.7	1895.5	1898.7	1909.0
31°	1848.2	1853.4	1862.5	1872.8	1878.0	1872.8	1862.5	1853.4	1848.2	1853.4	1862.5
31.5°	1804.9	1808.0	1818.0	1827.5	1833.9	1827.5	1818.0	1808.0	1804.9	1808.0	1818.0
32°	1761.9	1765.9	1775.1	1784.2	1789.8	1784.2	1775.1	1765.9	1761.9	1765.9	1775.1
32.5°	1722.2	1726.2	1734.5	1740.9	1744.1	1740.9	1734.5	1726.2	1722.2	1726.2	1734.5
33°	1685.2	1687.2	1692.4	1695.6	1695.2	1695.6	1692.4	1687.2	1685.2	1687.2	1692.4
33.5°	1647.1	1646.7	1647.1	1647.1	1646.3	1647.1	1647.1	1646.7	1647.1	1646.7	1647.1
34°	1604.5	1601.8	1598.6	1603.0	1594.2	1603.0	1598.6	1601.8	1604.5	1601.8	1598.6
34.5°	1555.7	1554.9	1554.1	1550.9	1542.9	1550.9	1554.1	1554.9	1555.7	1554.9	1554.1
35°	1504.8	1501.2	1501.2	1498.0	1492.1	1498.0	1501.2	1501.2	1504.8	1501.2	1501.2
35.5°	1452.3	1447.9	1447.9	1442.4	1438.8	1442.4	1447.9	1447.9	1452.3	1447.9	1447.9
36°	1394.7	1392.3	1393.5	1384.4	1383.6	1384.4	1393.5	1392.3	1394.7	1392.3	1393.5
36.5°	1335.1	1334.7	1334.7	1325.9	1324.3	1325.9	1334.7	1334.7	1335.1	1334.7	1334.7
37°	1273.5	1273.5	1273.9	1267.1	1264.3	1267.1	1273.9	1273.5	1273.5	1273.5	1273.9
37.5°	1211.9	1210.7	1215.8	1207.5	1205.5	1207.5	1215.8	1210.7	1211.9	1210.7	1215.8
38°	1149.1	1146.3	1147.9	1145.5	1145.9	1145.5	1147.9	1146.3	1149.1	1146.3	1147.9
38.5°	1083.5	1081.1	1080.3	1083.9	1085.1	1083.9	1080.3	1081.1	1083.5	1081.1	1080.3
39°	1017.1	1015.9	1013.9	1021.9	1022.3	1021.9	1013.9	1015.9	1017.1	1015.9	1013.9
39.5°	949.5	949.5	949.5	959.5	961.9	959.5	949.5	949.5	949.5	949.5	949.5
40°	882.8	884.7	888.7	897.5	901.4	897.5	888.7	884.7	882.8	884.7	888.7
40.5°	817.2	819.6	828.3	835.1	842.2	835.1	828.3	819.6	817.2	819.6	828.3
41°	752.4	756.0	767.5	774.6	782.2	774.6	767.5	756.0	752.4	756.0	767.5
41.5°	687.6	693.6	707.1	715.0	723.8	715.0	707.1	693.6	687.6	693.6	707.1
42°	625.6	632.4	648.3	657.4	665.7	657.4	648.3	632.4	625.6	632.4	648.3
42.5°	565.6	573.1	591.0	602.9	610.5	602.9	591.0	573.1	565.6	573.1	591.0
43°	507.2	517.9	536.2	549.7	556.0	549.7	536.2	517.9	507.2	517.9	536.2
43.5°	452.3	465.0	482.9	497.6	503.2	497.6	482.9	465.0	452.3	465.0	482.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	310.4	317.2	333.5	352.9	360.1	352.9	333.5	317.2	310.4	317.2	333.5
45.5°	267.5	274.2	290.5	310.0	318.0	310.0	290.5	274.2	267.5	274.2	290.5
46°	226.2	234.5	251.2	271.1	283.8	271.1	251.2	234.5	226.2	234.5	251.2
46.5°	191.2	197.5	216.6	235.3	249.6	235.3	216.6	197.5	191.2	197.5	216.6
47°	160.2	167.3	184.0	201.1	215.4	201.1	184.0	167.3	160.2	167.3	184.0
47.5°	132.8	138.7	153.0	167.7	181.2	167.7	153.0	138.7	132.8	138.7	153.0
48°	110.1	113.7	125.6	137.5	147.1	137.5	125.6	113.7	110.1	113.7	125.6
48.5°	89.0	93.4	101.4	112.1	120.4	112.1	101.4	93.4	89.0	93.4	101.4
49°	69.6	74.3	82.7	89.4	96.6	89.4	82.7	74.3	69.6	74.3	82.7
49.5°	54.5	58.0	65.2	71.5	76.7	71.5	65.2	58.0	54.5	58.0	65.2
50°	42.1	44.5	49.7	55.2	59.2	55.2	49.7	44.5	42.1	44.5	49.7
50.5°	31.4	31.8	37.8	43.3	46.1	43.3	37.8	31.8	31.4	31.8	37.8
51°	21.9	23.5	28.2	34.2	39.0	34.2	28.2	23.5	21.9	23.5	28.2
51.5°	14.3	17.5	21.9	25.8	32.2	25.8	21.9	17.5	14.3	17.5	21.9
52°	12.3	13.1	16.3	19.9	25.0	19.9	16.3	13.1	12.3	13.1	16.3
52.5°	11.1	11.5	11.9	15.1	18.3	15.1	11.9	11.5	11.1	11.5	11.9
53°	10.3	10.7	10.7	11.5	11.5	11.5	10.7	10.7	10.3	10.7	10.7
53.5°	9.5	9.9	10.3	10.3	9.9	10.3	10.3	9.9	9.5	9.9	10.3
54°	9.1	9.1	9.5	9.5	9.1	9.5	9.5	9.1	9.1	9.1	9.5
54.5°	8.3	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.3	8.7	8.7
55°	7.9	8.3	8.3	8.3	8.3	8.3	8.3	8.3	7.9	8.3	8.3
55.5°	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.6	7.6	7.6	7.9
56°	7.2	7.2	7.6	7.6	7.6	7.6	7.6	7.2	7.2	7.2	7.6
56.5°	6.8	6.8	7.2	7.2	6.8	7.2	7.2	6.8	6.8	6.8	7.2
57°	6.4	6.4	6.8	6.8	6.4	6.8	6.8	6.4	6.4	6.4	6.8
57.5°	6.0	6.0	6.4	6.4	6.4	6.4	6.4	6.0	6.0	6.0	6.4
58°	5.6	5.6	6.0	6.0	6.0	6.0	6.0	5.6	5.6	5.6	6.0
58.5°	5.2	5.2	5.6	5.6	5.6	5.6	5.6	5.2	5.2	5.2	5.6
59°	4.8	5.2	5.2	5.2	5.2	5.2	5.2	5.2	4.8	5.2	5.2
59.5°	4.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.4	4.8	4.8
60°	4.4	4.4	4.8	4.8	4.4	4.8	4.8	4.4	4.4	4.4	4.8
60.5°	4.0	4.0	4.4	4.4	4.4	4.4	4.4	4.0	4.0	4.0	4.4
61°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
61.5°	3.6	3.6	4.0	4.0	4.0	4.0	4.0	3.6	3.6	3.6	4.0
62°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
62.5°	3.2	3.2	3.6	3.6	3.6	3.6	3.6	3.2	3.2	3.2	3.6
63°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
63.5°	2.8	2.8	3.2	3.2	3.2	3.2	3.2	2.8	2.8	2.8	3.2
64°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
64.5°	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.4	2.8	2.8
65°	2.4	2.4	2.8	2.8	2.4	2.8	2.8	2.4	2.4	2.4	2.8
65.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
66°	2.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.4	2.4



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
68°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	2.0
68.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
69°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
69.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.6
70.5°	1.2	1.2	1.2	1.6	1.2	1.6	1.2	1.2	1.2	1.2	1.2
71°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
71.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	1.2	1.2
73°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
73.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
77°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4
82.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
83°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	7351.8	7351.8	7351.8	7351.8	7351.8	7351.8
0.5°	7352.2	7345.1	7352.2	7350.6	7346.6	7345.1
1°	7343.9	7336.7	7343.9	7341.1	7337.1	7335.1
1.5°	7329.2	7322.0	7329.2	7326.0	7320.8	7318.4
2°	7308.9	7302.1	7308.9	7304.9	7298.2	7296.2
2.5°	7282.3	7275.9	7282.3	7277.5	7269.5	7265.6
3°	7250.5	7244.5	7250.5	7244.5	7235.0	7231.0
3.5°	7212.7	7208.3	7212.7	7205.1	7194.4	7189.6
4°	7169.4	7165.4	7169.4	7160.2	7147.5	7141.6
4.5°	7120.5	7116.5	7120.5	7109.4	7094.3	7088.7
5°	7066.0	7062.5	7066.0	7052.9	7036.2	7030.3
5.5°	7004.8	7003.2	7004.8	6989.7	6972.2	6965.9
6°	6938.9	6939.2	6938.9	6921.4	6902.3	6895.5
6.5°	6868.1	6869.3	6868.1	6848.6	6827.6	6822.0
7°	6791.8	6796.2	6791.8	6769.9	6748.1	6741.7
7.5°	6708.3	6714.7	6708.3	6685.3	6662.6	6657.4
8°	6621.7	6629.6	6621.7	6596.6	6572.8	6566.8
8.5°	6530.3	6539.4	6530.3	6502.0	6478.2	6473.0
9°	6434.5	6444.8	6434.5	6404.3	6379.2	6372.5
9.5°	6332.7	6344.6	6332.7	6300.9	6277.1	6269.9
10°	6229.8	6239.7	6229.8	6195.2	6170.6	6162.6
10.5°	6121.7	6131.2	6121.7	6085.1	6059.7	6051.7
11°	6010.0	6018.3	6010.0	5971.8	5946.0	5933.3
11.5°	5892.3	5902.3	5892.3	5855.4	5829.5	5819.2
12°	5774.3	5783.4	5774.3	5736.9	5710.3	5698.0
12.5°	5651.5	5659.4	5651.5	5616.1	5589.1	5576.4
13°	5530.3	5536.6	5530.3	5494.9	5465.9	5451.6
13.5°	5402.3	5411.4	5402.3	5371.3	5341.1	5326.8
14°	5273.1	5283.0	5273.1	5244.9	5214.3	5198.8
14.5°	5143.1	5151.5	5143.1	5116.5	5085.5	5069.6
15°	5014.0	5019.9	5014.0	4986.9	4956.3	4940.0
15.5°	4882.4	4891.5	4882.4	4856.6	4826.0	4810.1
16°	4751.2	4762.0	4751.2	4725.4	4694.8	4680.9
16.5°	4620.9	4632.4	4620.9	4595.8	4565.2	4553.3
17°	4492.5	4501.2	4492.5	4463.1	4435.3	4422.1
17.5°	4362.1	4372.5	4362.1	4332.3	4304.5	4291.4
18°	4231.8	4242.1	4231.8	4202.7	4172.9	4163.0
18.5°	4099.4	4110.5	4099.4	4071.2	4044.5	4034.6
19°	3965.5	3978.2	3965.5	3941.6	3915.4	3905.8
19.5°	3829.1	3839.1	3829.1	3808.9	3787.4	3777.1
20°	3691.2	3691.6	3691.2	3671.7	3654.6	3645.9
20.5°	3555.3	3552.9	3555.3	3537.0	3518.7	3513.1
21°	3422.1	3421.7	3422.1	3404.2	3386.8	3377.6



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3056.9	3069.6	3056.9	3027.8	3011.9	3000.8
23°	2944.4	2958.7	2944.4	2919.7	2900.7	2892.3
23.5°	2841.0	2855.0	2841.0	2820.8	2805.7	2785.0
24°	2751.6	2769.9	2751.6	2729.8	2708.7	2700.7
24.5°	2665.8	2687.6	2665.8	2643.9	2623.2	2613.7
25°	2583.5	2604.2	2583.5	2564.8	2545.3	2535.4
25.5°	2504.4	2522.3	2504.4	2488.5	2472.6	2468.2
26°	2431.3	2442.0	2431.3	2416.2	2405.8	2401.8
26.5°	2364.5	2371.2	2364.5	2351.4	2339.1	2333.1
27°	2304.1	2310.8	2304.1	2289.8	2273.9	2266.7
27.5°	2243.3	2252.8	2243.3	2228.2	2212.7	2205.9
28°	2182.1	2190.0	2182.1	2168.1	2155.4	2149.9
28.5°	2123.6	2132.4	2123.6	2112.1	2101.4	2096.6
29°	2070.4	2075.9	2070.4	2059.2	2048.9	2044.9
29.5°	2018.3	2023.5	2018.3	2008.0	1997.6	1993.3
30°	1967.4	1973.4	1967.4	1957.5	1947.6	1943.6
30.5°	1918.9	1924.9	1918.9	1909.0	1898.7	1895.5
31°	1872.8	1878.0	1872.8	1862.5	1853.4	1848.2
31.5°	1827.5	1833.9	1827.5	1818.0	1808.0	1804.9
32°	1784.2	1789.8	1784.2	1775.1	1765.9	1761.9
32.5°	1740.9	1744.1	1740.9	1734.5	1726.2	1722.2
33°	1695.6	1695.2	1695.6	1692.4	1687.2	1685.2
33.5°	1647.1	1646.3	1647.1	1647.1	1646.7	1647.1
34°	1603.0	1594.2	1603.0	1598.6	1601.8	1604.5
34.5°	1550.9	1542.9	1550.9	1554.1	1554.9	1555.7
35°	1498.0	1492.1	1498.0	1501.2	1501.2	1504.8
35.5°	1442.4	1438.8	1442.4	1447.9	1447.9	1452.3
36°	1384.4	1383.6	1384.4	1393.5	1392.3	1394.7
36.5°	1325.9	1324.3	1325.9	1334.7	1334.7	1335.1
37°	1267.1	1264.3	1267.1	1273.9	1273.5	1273.5
37.5°	1207.5	1205.5	1207.5	1215.8	1210.7	1211.9
38°	1145.5	1145.9	1145.5	1147.9	1146.3	1149.1
38.5°	1083.9	1085.1	1083.9	1080.3	1081.1	1083.5
39°	1021.9	1022.3	1021.9	1013.9	1015.9	1017.1
39.5°	959.5	961.9	959.5	949.5	949.5	949.5
40°	897.5	901.4	897.5	888.7	884.7	882.8
40.5°	835.1	842.2	835.1	828.3	819.6	817.2
41°	774.6	782.2	774.6	767.5	756.0	752.4
41.5°	715.0	723.8	715.0	707.1	693.6	687.6
42°	657.4	665.7	657.4	648.3	632.4	625.6
42.5°	602.9	610.5	602.9	591.0	573.1	565.6
43°	549.7	556.0	549.7	536.2	517.9	507.2
43.5°	497.6	503.2	497.6	482.9	465.0	452.3



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	352.9	360.1	352.9	333.5	317.2	310.4
45.5°	310.0	318.0	310.0	290.5	274.2	267.5
46°	271.1	283.8	271.1	251.2	234.5	226.2
46.5°	235.3	249.6	235.3	216.6	197.5	191.2
47°	201.1	215.4	201.1	184.0	167.3	160.2
47.5°	167.7	181.2	167.7	153.0	138.7	132.8
48°	137.5	147.1	137.5	125.6	113.7	110.1
48.5°	112.1	120.4	112.1	101.4	93.4	89.0
49°	89.4	96.6	89.4	82.7	74.3	69.6
49.5°	71.5	76.7	71.5	65.2	58.0	54.5
50°	55.2	59.2	55.2	49.7	44.5	42.1
50.5°	43.3	46.1	43.3	37.8	31.8	31.4
51°	34.2	39.0	34.2	28.2	23.5	21.9
51.5°	25.8	32.2	25.8	21.9	17.5	14.3
52°	19.9	25.0	19.9	16.3	13.1	12.3
52.5°	15.1	18.3	15.1	11.9	11.5	11.1
53°	11.5	11.5	11.5	10.7	10.7	10.3
53.5°	10.3	9.9	10.3	10.3	9.9	9.5
54°	9.5	9.1	9.5	9.5	9.1	9.1
54.5°	8.7	8.7	8.7	8.7	8.7	8.3
55°	8.3	8.3	8.3	8.3	8.3	7.9
55.5°	7.9	7.9	7.9	7.9	7.6	7.6
56°	7.6	7.6	7.6	7.6	7.2	7.2
56.5°	7.2	6.8	7.2	7.2	6.8	6.8
57°	6.8	6.4	6.8	6.8	6.4	6.4
57.5°	6.4	6.4	6.4	6.4	6.0	6.0
58°	6.0	6.0	6.0	6.0	5.6	5.6
58.5°	5.6	5.6	5.6	5.6	5.2	5.2
59°	5.2	5.2	5.2	5.2	5.2	4.8
59.5°	4.8	4.8	4.8	4.8	4.8	4.4
60°	4.8	4.4	4.8	4.8	4.4	4.4
60.5°	4.4	4.4	4.4	4.4	4.0	4.0
61°	4.0	4.0	4.0	4.0	4.0	4.0
61.5°	4.0	4.0	4.0	4.0	3.6	3.6
62°	3.6	3.6	3.6	3.6	3.6	3.6
62.5°	3.6	3.6	3.6	3.6	3.2	3.2
63°	3.2	3.2	3.2	3.2	3.2	3.2
63.5°	3.2	3.2	3.2	3.2	2.8	2.8
64°	2.8	2.8	2.8	2.8	2.8	2.8
64.5°	2.8	2.8	2.8	2.8	2.8	2.4
65°	2.8	2.4	2.8	2.8	2.4	2.4
65.5°	2.4	2.4	2.4	2.4	2.4	2.4
66°	2.4	2.4	2.4	2.4	2.4	2.0



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	2.0	2.0	2.0	2.0	2.0	2.0
68°	2.0	2.0	2.0	2.0	1.6	1.6
68.5°	1.6	1.6	1.6	1.6	1.6	1.6
69°	1.6	1.6	1.6	1.6	1.6	1.6
69.5°	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.2	1.2
70.5°	1.6	1.2	1.6	1.2	1.2	1.2
71°	1.2	1.2	1.2	1.2	1.2	1.2
71.5°	1.2	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	0.8
73°	1.2	1.2	1.2	1.2	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.4	0.4
77°	0.8	0.8	0.8	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.0
82.5°	0.4	0.4	0.4	0.4	0.0	0.0
83°	0.4	0.4	0.4	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776467

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - · 135°-315°

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Scaled Data Report



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Scaled Data Report





21.5°	3237.3	3256.8	3276.3	3294.5	3299.3	3294.5	3276.3	3256.8	3237.3	3256.8	3276.3
22°	3115.3	3128.0	3150.7	3169.3	3178.9	3169.3	3150.7	3128.0	3115.3	3128.0	3150.7



44°	402.6	413.8	431.6	446.7	452.7	446.7	431.6	413.8	402.6	413.8	431.6
44.5°	355.7	364.5	381.2	397.5	404.6	397.5	381.2	364.5	355.7	364.5	381.2



66.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	3294.5	3299.3	3294.5	3276.3	3256.8	3237.3
22°	3169.3	3178.9	3169.3	3150.7	3128.0	3115.3

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44°	446.7	452.7	446.7	431.6	413.8	402.6
44.5°	397.5	404.6	397.5	381.2	364.5	355.7

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66.5°	2.0	2.0	2.0	2.0	2.0	2.0
67°	2.0	2.0	2.0	2.0	2.0	2.0

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)