

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: P776463

Luminaire Tested: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776463
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B062-HCD82TRC)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD82TRC-4000lm-4000K
Description: 8 INCH ROUND NARROW SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

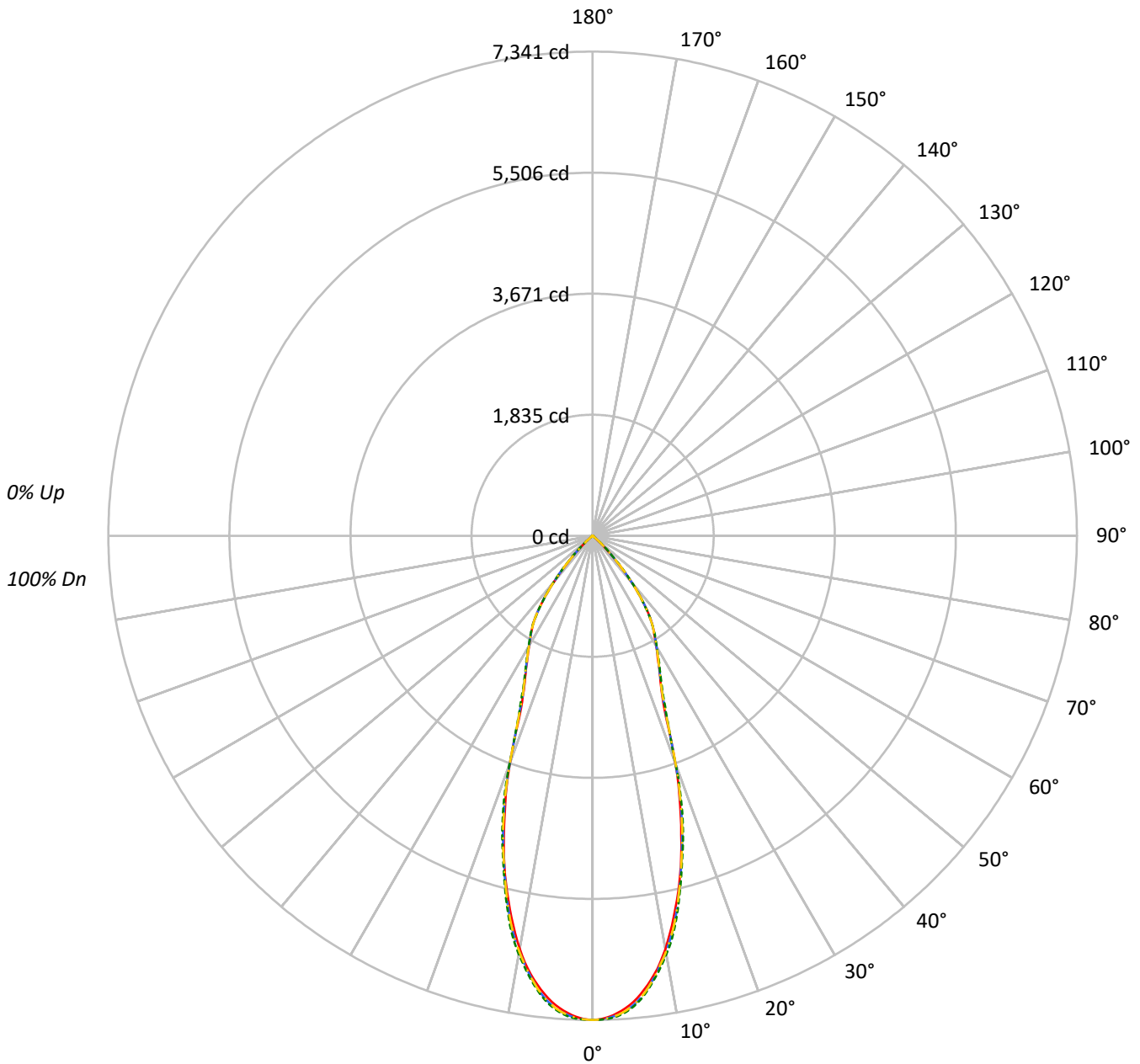
Lumens per Lamp: N/A
Luminaire Lumens: 4482.1 lumens
Efficiency: N/A
Efficacy: 116.4 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 0.66 / 0.66
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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	92	89	101	96	91	88	93	90	87	91	88	85	89	86	84	82																			
4	98	91	86	82	97	90	85	81	88	84	80	86	82	80	84	81	79	77																			
5	94	86	80	76	92	85	80	76	83	79	75	81	78	74	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	75	65	60	56	74	65	60	56	64	59	56	63	59	56	63	59	56	54																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	224050	224050	224050	224050
5°	217357	219557	217357	219557
10°	197078	199729	197078	199729
15°	163413	164826	163413	164826
20°	118997	119497	118997	119497
25°	81983	83125	81983	83125
30°	67919	68631	67919	68631
35°	56696	56424	56696	56424
40°	36287	36786	36287	36786
45°	14689	16131	14689	16131
50°	2755	3064	2755	3064
55°	836	814	836	814
60°	543	543	543	543
65°	376	376	376	376
70°	250	286	250	286
75°	189	189	189	189
80°	141	141	141	141
85°	0	140	0	140

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 16131 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	657.7	14.7
10°-20°	1418.5	31.6
20°-30°	1163.6	26.0
30°-40°	915.9	20.4
40°-50°	301.3	6.7
50°-60°	17.6	0.4
60°-70°	5.4	0.1
70°-80°	1.9	0.0
80°-90°	0.3	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°	3239.8	72.3
0°-40°	4155.7	92.7
0°-60°	4474.5	99.8
0°-90°	4482.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4482.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7339	7339	7339	7339	7339	
5°	7092	7164	7092	7164	7092	654
15°	5170	5215	5170	5215	5170	1407
25°	2434	2468	2434	2468	2434	1156
35°	1521	1514	1521	1514	1521	915
45°	340	374	340	374	340	290
55°	16	15	16	15	16	16
65°	5	5	5	5	5	5
75°	2	2	2	2	2	2
85°	0	0	0	0	0	0
90°	0	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°	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6
0.5°	7335.4	7336.2	7339.8	7332.5	7340.6	7332.5	7339.8	7336.2	7335.4	7336.2	7339.8
1°	7327.7	7329.3	7335.0	7328.1	7336.6	7328.1	7335.0	7329.3	7327.7	7329.3	7335.0
1.5°	7314.0	7317.6	7326.1	7320.9	7329.7	7320.9	7326.1	7317.6	7314.0	7317.6	7326.1
2°	7295.9	7300.7	7313.6	7310.0	7322.5	7310.0	7313.6	7300.7	7295.9	7300.7	7313.6
2.5°	7272.5	7280.1	7296.3	7295.5	7309.2	7295.5	7296.3	7280.1	7272.5	7280.1	7296.3
3°	7245.5	7255.6	7275.3	7275.7	7291.4	7275.7	7275.3	7255.6	7245.5	7255.6	7275.3
3.5°	7214.0	7227.3	7249.5	7250.7	7268.5	7250.7	7249.5	7227.3	7214.0	7227.3	7249.5
4°	7179.0	7196.7	7218.9	7220.5	7239.8	7220.5	7218.9	7196.7	7179.0	7196.7	7218.9
4.5°	7138.3	7160.4	7182.2	7185.8	7205.2	7185.8	7182.2	7160.4	7138.3	7160.4	7182.2
5°	7092.3	7120.1	7140.3	7145.5	7164.1	7145.5	7140.3	7120.1	7092.3	7120.1	7140.3
5.5°	7041.1	7074.2	7090.3	7100.4	7116.5	7100.4	7090.3	7074.2	7041.1	7074.2	7090.3
6°	6985.1	7022.2	7035.1	7050.4	7060.5	7050.4	7035.1	7022.2	6985.1	7022.2	7035.1
6.5°	6923.8	6963.7	6972.2	6994.4	6998.0	6994.4	6972.2	6963.7	6923.8	6963.7	6972.2
7°	6859.3	6898.4	6904.1	6934.3	6928.7	6934.3	6904.1	6898.4	6859.3	6898.4	6904.1
7.5°	6790.8	6826.7	6829.1	6868.6	6856.1	6868.6	6829.1	6826.7	6790.8	6826.7	6829.1
8°	6717.5	6749.3	6750.9	6797.3	6777.9	6797.3	6750.9	6749.3	6717.5	6749.3	6750.9
8.5°	6637.3	6663.5	6667.5	6719.1	6698.1	6719.1	6667.5	6663.5	6637.3	6663.5	6667.5
9°	6551.8	6572.0	6581.2	6633.6	6613.5	6633.6	6581.2	6572.0	6551.8	6572.0	6581.2
9.5°	6457.5	6472.0	6493.4	6540.9	6530.0	6540.9	6493.4	6472.0	6457.5	6472.0	6493.4
10°	6357.1	6368.0	6401.5	6439.4	6442.6	6439.4	6401.5	6368.0	6357.1	6368.0	6401.5
10.5°	6250.7	6257.6	6306.7	6331.7	6352.7	6331.7	6306.7	6257.6	6250.7	6257.6	6306.7
11°	6142.3	6145.1	6208.4	6219.3	6254.3	6219.3	6208.4	6145.1	6142.3	6145.1	6208.4
11.5°	6029.0	6031.0	6102.4	6103.2	6146.3	6103.2	6102.4	6031.0	6029.0	6031.0	6102.4
12°	5915.0	5916.6	5985.9	5987.9	6030.2	5987.9	5985.9	5916.6	5915.0	5916.6	5985.9
12.5°	5794.9	5804.5	5859.7	5870.6	5900.9	5870.6	5859.7	5804.5	5794.9	5804.5	5859.7
13°	5676.8	5690.9	5729.6	5751.3	5771.1	5751.3	5729.6	5690.9	5676.8	5690.9	5729.6
13.5°	5554.2	5573.6	5593.7	5624.8	5632.0	5624.8	5593.7	5573.6	5554.2	5573.6	5593.7
14°	5430.9	5450.2	5458.3	5492.6	5492.1	5492.6	5458.3	5450.2	5430.9	5450.2	5458.3
14.5°	5302.7	5318.0	5324.1	5358.7	5353.9	5358.7	5324.1	5318.0	5302.7	5318.0	5324.1
15°	5170.1	5179.8	5189.4	5220.9	5214.8	5220.9	5189.4	5179.8	5170.1	5179.8	5189.4
15.5°	5028.2	5033.9	5055.2	5083.4	5084.7	5083.4	5055.2	5033.9	5028.2	5033.9	5055.2
16°	4883.9	4887.6	4919.8	4944.8	4950.8	4944.8	4919.8	4887.6	4883.9	4887.6	4919.8
16.5°	4732.0	4742.9	4781.1	4807.3	4821.9	4807.3	4781.1	4742.9	4732.0	4742.9	4781.1
17°	4584.9	4597.8	4640.1	4671.1	4689.6	4671.1	4640.1	4597.8	4584.9	4597.8	4640.1
17.5°	4436.1	4453.9	4492.1	4530.0	4548.2	4530.0	4492.1	4453.9	4436.1	4453.9	4492.1
18°	4293.0	4305.9	4341.0	4382.1	4397.8	4382.1	4341.0	4305.9	4293.0	4305.9	4341.0
18.5°	4143.9	4156.0	4183.0	4224.1	4236.2	4224.1	4183.0	4156.0	4143.9	4156.0	4183.0
19°	3991.1	3999.2	4020.2	4050.8	4063.3	4050.8	4020.2	3999.2	3991.1	3999.2	4020.2
19.5°	3831.5	3832.3	3848.1	3871.4	3883.1	3871.4	3848.1	3832.3	3831.5	3832.3	3848.1
20°	3662.6	3662.6	3671.1	3684.0	3678.0	3684.0	3671.1	3662.6	3662.6	3662.6	3671.1
20.5°	3496.6	3490.5	3494.2	3493.8	3476.0	3493.8	3494.2	3490.5	3496.6	3490.5	3494.2
21°	3325.7	3321.7	3306.7	3321.7	3316.0	3321.7	3306.7	3321.7	3325.7	3321.7	3306.7

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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°	2847.6	2866.6	2892.4	2923.4	2909.7	2923.4	2892.4	2866.6	2847.6	2866.6	2892.4
23°	2736.0	2748.9	2775.5	2817.8	2818.2	2817.8	2775.5	2748.9	2736.0	2748.9	2775.5
23.5°	2653.8	2651.8	2668.7	2709.4	2714.6	2709.4	2668.7	2651.8	2653.8	2651.8	2668.7
24°	2565.5	2574.4	2584.8	2617.9	2620.3	2617.9	2584.8	2574.4	2565.5	2574.4	2584.8
24.5°	2497.8	2502.2	2511.5	2532.5	2532.5	2532.5	2511.5	2502.2	2497.8	2502.2	2511.5
25°	2433.7	2439.3	2449.0	2468.4	2467.6	2468.4	2449.0	2439.3	2433.7	2439.3	2449.0
25.5°	2374.0	2376.9	2386.9	2405.1	2406.3	2405.1	2386.9	2376.9	2374.0	2376.9	2386.9
26°	2316.4	2318.8	2326.1	2339.8	2341.8	2339.8	2326.1	2318.8	2316.4	2318.8	2326.1
26.5°	2262.0	2262.8	2271.3	2283.8	2285.0	2283.8	2271.3	2262.8	2262.0	2262.8	2271.3
27°	2206.8	2209.2	2218.1	2233.8	2237.8	2233.8	2218.1	2209.2	2206.8	2209.2	2218.1
27.5°	2154.8	2158.0	2166.5	2181.8	2187.4	2181.8	2166.5	2158.0	2154.8	2158.0	2166.5
28°	2105.6	2108.8	2116.9	2128.2	2133.4	2128.2	2116.9	2108.8	2105.6	2108.8	2116.9
28.5°	2060.1	2061.7	2069.3	2078.2	2082.6	2078.2	2069.3	2061.7	2060.1	2061.7	2069.3
29°	2014.9	2016.1	2023.4	2031.0	2035.9	2031.0	2023.4	2016.1	2014.9	2016.1	2023.4
29.5°	1970.2	1972.6	1978.6	1987.1	1991.1	1987.1	1978.6	1972.6	1970.2	1972.6	1978.6
30°	1926.6	1929.1	1934.7	1942.8	1946.8	1942.8	1934.7	1929.1	1926.6	1929.1	1934.7
30.5°	1884.3	1886.3	1892.0	1899.6	1902.5	1899.6	1892.0	1886.3	1884.3	1886.3	1892.0
31°	1842.8	1844.8	1850.1	1858.1	1862.2	1858.1	1850.1	1844.8	1842.8	1844.8	1850.1
31.5°	1802.9	1804.9	1810.6	1817.8	1820.6	1817.8	1810.6	1804.9	1802.9	1804.9	1810.6
32°	1764.6	1766.2	1771.5	1778.7	1781.5	1778.7	1771.5	1766.2	1764.6	1766.2	1771.5
32.5°	1727.9	1729.5	1733.2	1740.0	1742.4	1740.0	1733.2	1729.5	1727.9	1729.5	1733.2
33°	1692.5	1693.3	1695.3	1698.5	1700.9	1698.5	1695.3	1693.3	1692.5	1693.3	1695.3
33.5°	1655.8	1655.8	1655.0	1653.4	1657.0	1653.4	1655.0	1655.8	1655.8	1655.8	1655.0
34°	1614.3	1612.7	1611.9	1606.6	1614.7	1606.6	1611.9	1612.7	1614.3	1612.7	1611.9
34.5°	1569.5	1565.9	1565.5	1558.6	1564.7	1558.6	1565.5	1565.9	1569.5	1565.9	1565.5
35°	1521.2	1516.3	1516.3	1509.9	1513.9	1509.9	1516.3	1516.3	1521.2	1516.3	1516.3
35.5°	1468.4	1466.3	1463.9	1458.3	1460.7	1458.3	1463.9	1466.3	1468.4	1466.3	1463.9
36°	1413.5	1412.7	1408.3	1405.1	1405.5	1405.1	1408.3	1412.7	1413.5	1412.7	1408.3
36.5°	1355.5	1357.1	1350.7	1348.7	1346.2	1348.7	1350.7	1357.1	1355.5	1357.1	1350.7
37°	1293.0	1297.9	1292.2	1291.0	1287.8	1291.0	1292.2	1297.9	1293.0	1297.9	1292.2
37.5°	1231.0	1234.6	1233.0	1231.0	1229.7	1231.0	1233.0	1234.6	1231.0	1234.6	1233.0
38°	1168.9	1171.7	1169.7	1171.3	1170.1	1171.3	1169.7	1171.7	1168.9	1171.7	1169.7
38.5°	1106.8	1105.2	1106.0	1106.4	1109.6	1106.4	1106.0	1105.2	1106.8	1105.2	1106.0
39°	1043.5	1039.9	1041.9	1041.9	1048.4	1041.9	1041.9	1039.9	1043.5	1039.9	1041.9
39.5°	977.0	975.0	977.8	980.3	985.1	980.3	977.8	975.0	977.0	975.0	977.8
40°	910.5	912.1	915.8	919.4	923.0	919.4	915.8	912.1	910.5	912.1	915.8
40.5°	844.4	848.4	852.1	860.9	860.5	860.9	852.1	848.4	844.4	848.4	852.1
41°	780.3	784.8	790.0	800.5	798.9	800.5	790.0	784.8	780.3	784.8	790.0
41.5°	715.8	721.5	728.3	740.8	738.0	740.8	728.3	721.5	715.8	721.5	728.3
42°	654.6	660.2	669.5	682.0	680.0	682.0	669.5	660.2	654.6	660.2	669.5
42.5°	595.3	600.6	612.7	625.6	624.3	625.6	612.7	600.6	595.3	600.6	612.7
43°	538.1	544.9	557.4	571.9	570.7	571.9	557.4	544.9	538.1	544.9	557.4
43.5°	486.9	490.5	503.0	517.1	518.3	517.1	503.0	490.5	486.9	490.5	503.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	340.2	341.8	355.5	368.4	373.6	368.4	355.5	341.8	340.2	341.8	355.5
45.5°	293.4	297.1	312.4	323.7	330.5	323.7	312.4	297.1	293.4	297.1	312.4
46°	252.3	255.1	271.7	284.6	291.8	284.6	271.7	255.1	252.3	255.1	271.7
46.5°	215.2	220.1	233.0	249.1	257.6	249.1	233.0	220.1	215.2	220.1	233.0
47°	181.4	187.0	197.1	215.2	223.3	215.2	197.1	187.0	181.4	187.0	197.1
47.5°	152.4	158.0	167.3	183.0	189.0	183.0	167.3	158.0	152.4	158.0	167.3
48°	126.2	133.0	139.5	153.6	154.8	153.6	139.5	133.0	126.2	133.0	139.5
48.5°	104.0	110.0	115.3	127.4	125.4	127.4	115.3	110.0	104.0	110.0	115.3
49°	86.3	89.9	93.5	104.8	101.6	104.8	93.5	89.9	86.3	89.9	93.5
49.5°	72.1	73.4	77.4	84.2	80.6	84.2	77.4	73.4	72.1	73.4	77.4
50°	58.0	57.6	62.1	68.5	64.5	68.5	62.1	57.6	58.0	57.6	62.1
50.5°	43.9	45.5	48.0	54.4	50.8	54.4	48.0	45.5	43.9	45.5	48.0
51°	33.9	34.7	39.1	43.5	40.3	43.5	39.1	34.7	33.9	34.7	39.1
51.5°	25.4	28.6	31.0	36.3	35.9	36.3	31.0	28.6	25.4	28.6	31.0
52°	22.2	23.8	26.2	28.6	31.4	28.6	26.2	23.8	22.2	23.8	26.2
52.5°	20.2	20.6	22.6	24.2	26.6	24.2	22.6	20.6	20.2	20.6	22.6
53°	18.9	19.3	19.3	21.0	22.2	21.0	19.3	19.3	18.9	19.3	19.3
53.5°	18.1	18.1	18.5	18.1	17.7	18.1	18.5	18.1	18.1	18.1	18.5
54°	17.3	17.3	17.3	17.3	16.9	17.3	17.3	17.3	17.3	17.3	17.3
54.5°	16.5	16.5	16.5	16.5	16.1	16.5	16.5	16.5	16.5	16.5	16.5
55°	15.7	15.7	15.7	15.7	15.3	15.7	15.7	15.7	15.7	15.7	15.7
55.5°	14.9	14.9	14.9	14.9	14.5	14.9	14.9	14.9	14.9	14.9	14.9
56°	14.1	14.1	14.1	14.1	13.7	14.1	14.1	14.1	14.1	14.1	14.1
56.5°	13.3	13.3	13.7	13.3	12.9	13.3	13.7	13.3	13.3	13.3	13.7
57°	12.5	12.5	12.9	12.5	12.5	12.5	12.9	12.5	12.5	12.5	12.9
57.5°	11.7	12.1	12.1	11.7	11.7	11.7	12.1	12.1	11.7	12.1	12.1
58°	11.3	11.3	11.3	11.3	10.9	11.3	11.3	11.3	11.3	11.3	11.3
58.5°	10.5	10.9	10.9	10.5	10.5	10.5	10.9	10.9	10.5	10.9	10.9
59°	10.1	10.1	10.1	10.1	9.7	10.1	10.1	10.1	10.1	10.1	10.1
59.5°	9.3	9.7	9.7	9.7	9.3	9.7	9.7	9.7	9.3	9.7	9.7
60°	8.9	8.9	9.3	8.9	8.9	8.9	9.3	8.9	8.9	8.9	9.3
60.5°	8.5	8.5	8.9	8.5	8.5	8.5	8.9	8.5	8.5	8.5	8.9
61°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
61.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
62°	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
62.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
63°	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
63.5°	6.0	6.0	6.4	6.0	6.0	6.0	6.4	6.0	6.0	6.0	6.4
64°	5.6	5.6	6.0	6.0	5.6	6.0	6.0	5.6	5.6	5.6	6.0
64.5°	5.2	5.6	5.6	5.6	5.2	5.6	5.6	5.6	5.2	5.6	5.6
65°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
65.5°	4.8	4.8	5.2	4.8	4.8	4.8	5.2	4.8	4.8	4.8	5.2
66°	4.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.4	4.8	4.8



TEST NUMBER: P776463

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
68°	3.6	3.6	4.0	4.0	3.6	4.0	4.0	3.6	3.6	3.6	4.0
68.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
69°	3.2	3.2	3.6	3.6	3.2	3.6	3.6	3.2	3.2	3.2	3.6
69.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
70°	2.8	2.8	3.2	3.2	3.2	3.2	3.2	2.8	2.8	2.8	3.2
70.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
71°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
71.5°	2.4	2.4	2.8	2.8	2.4	2.8	2.8	2.4	2.4	2.4	2.8
72°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
72.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
73°	2.0	2.0	2.0	2.4	2.0	2.4	2.0	2.0	2.0	2.0	2.0
73.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
74°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
74.5°	1.6	1.6	2.0	2.0	1.6	2.0	2.0	1.6	1.6	1.6	2.0
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
76°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
76.5°	1.2	1.2	1.2	1.6	1.2	1.6	1.2	1.2	1.2	1.2	1.2
77°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	0.8	0.8	1.2	1.2	0.8	1.2	1.2	0.8	0.8	0.8	1.2
79°	0.8	0.8	0.8	1.2	0.8	1.2	0.8	0.8	0.8	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.4	0.4	0.8	0.8	0.4	0.8	0.8	0.4	0.4	0.4	0.8
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.0	0.0	0.4	0.4	0.0	0.4	0.4	0.0	0.0	0.0	0.4
85.5°	0.0	0.0	0.0	0.4	0.0	0.4	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: P776463
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

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: P776463

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	7338.6	7338.6	7338.6	7338.6	7338.6	7338.6
0.5°	7332.5	7340.6	7332.5	7339.8	7336.2	7335.4
1°	7328.1	7336.6	7328.1	7335.0	7329.3	7327.7
1.5°	7320.9	7329.7	7320.9	7326.1	7317.6	7314.0
2°	7310.0	7322.5	7310.0	7313.6	7300.7	7295.9
2.5°	7295.5	7309.2	7295.5	7296.3	7280.1	7272.5
3°	7275.7	7291.4	7275.7	7275.3	7255.6	7245.5
3.5°	7250.7	7268.5	7250.7	7249.5	7227.3	7214.0
4°	7220.5	7239.8	7220.5	7218.9	7196.7	7179.0
4.5°	7185.8	7205.2	7185.8	7182.2	7160.4	7138.3
5°	7145.5	7164.1	7145.5	7140.3	7120.1	7092.3
5.5°	7100.4	7116.5	7100.4	7090.3	7074.2	7041.1
6°	7050.4	7060.5	7050.4	7035.1	7022.2	6985.1
6.5°	6994.4	6998.0	6994.4	6972.2	6963.7	6923.8
7°	6934.3	6928.7	6934.3	6904.1	6898.4	6859.3
7.5°	6868.6	6856.1	6868.6	6829.1	6826.7	6790.8
8°	6797.3	6777.9	6797.3	6750.9	6749.3	6717.5
8.5°	6719.1	6698.1	6719.1	6667.5	6663.5	6637.3
9°	6633.6	6613.5	6633.6	6581.2	6572.0	6551.8
9.5°	6540.9	6530.0	6540.9	6493.4	6472.0	6457.5
10°	6439.4	6442.6	6439.4	6401.5	6368.0	6357.1
10.5°	6331.7	6352.7	6331.7	6306.7	6257.6	6250.7
11°	6219.3	6254.3	6219.3	6208.4	6145.1	6142.3
11.5°	6103.2	6146.3	6103.2	6102.4	6031.0	6029.0
12°	5987.9	6030.2	5987.9	5985.9	5916.6	5915.0
12.5°	5870.6	5900.9	5870.6	5859.7	5804.5	5794.9
13°	5751.3	5771.1	5751.3	5729.6	5690.9	5676.8
13.5°	5624.8	5632.0	5624.8	5593.7	5573.6	5554.2
14°	5492.6	5492.1	5492.6	5458.3	5450.2	5430.9
14.5°	5358.7	5353.9	5358.7	5324.1	5318.0	5302.7
15°	5220.9	5214.8	5220.9	5189.4	5179.8	5170.1
15.5°	5083.4	5084.7	5083.4	5055.2	5033.9	5028.2
16°	4944.8	4950.8	4944.8	4919.8	4887.6	4883.9
16.5°	4807.3	4821.9	4807.3	4781.1	4742.9	4732.0
17°	4671.1	4689.6	4671.1	4640.1	4597.8	4584.9
17.5°	4530.0	4548.2	4530.0	4492.1	4453.9	4436.1
18°	4382.1	4397.8	4382.1	4341.0	4305.9	4293.0
18.5°	4224.1	4236.2	4224.1	4183.0	4156.0	4143.9
19°	4050.8	4063.3	4050.8	4020.2	3999.2	3991.1
19.5°	3871.4	3883.1	3871.4	3848.1	3832.3	3831.5
20°	3684.0	3678.0	3684.0	3671.1	3662.6	3662.6
20.5°	3493.8	3476.0	3493.8	3494.2	3490.5	3496.6
21°	3321.7	3316.0	3321.7	3306.7	3321.7	3325.7

TEST NUMBER: P776463

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2923.4	2909.7	2923.4	2892.4	2866.6	2847.6
23°	2817.8	2818.2	2817.8	2775.5	2748.9	2736.0
23.5°	2709.4	2714.6	2709.4	2668.7	2651.8	2653.8
24°	2617.9	2620.3	2617.9	2584.8	2574.4	2565.5
24.5°	2532.5	2532.5	2532.5	2511.5	2502.2	2497.8
25°	2468.4	2467.6	2468.4	2449.0	2439.3	2433.7
25.5°	2405.1	2406.3	2405.1	2386.9	2376.9	2374.0
26°	2339.8	2341.8	2339.8	2326.1	2318.8	2316.4
26.5°	2283.8	2285.0	2283.8	2271.3	2262.8	2262.0
27°	2233.8	2237.8	2233.8	2218.1	2209.2	2206.8
27.5°	2181.8	2187.4	2181.8	2166.5	2158.0	2154.8
28°	2128.2	2133.4	2128.2	2116.9	2108.8	2105.6
28.5°	2078.2	2082.6	2078.2	2069.3	2061.7	2060.1
29°	2031.0	2035.9	2031.0	2023.4	2016.1	2014.9
29.5°	1987.1	1991.1	1987.1	1978.6	1972.6	1970.2
30°	1942.8	1946.8	1942.8	1934.7	1929.1	1926.6
30.5°	1899.6	1902.5	1899.6	1892.0	1886.3	1884.3
31°	1858.1	1862.2	1858.1	1850.1	1844.8	1842.8
31.5°	1817.8	1820.6	1817.8	1810.6	1804.9	1802.9
32°	1778.7	1781.5	1778.7	1771.5	1766.2	1764.6
32.5°	1740.0	1742.4	1740.0	1733.2	1729.5	1727.9
33°	1698.5	1700.9	1698.5	1695.3	1693.3	1692.5
33.5°	1653.4	1657.0	1653.4	1655.0	1655.8	1655.8
34°	1606.6	1614.7	1606.6	1611.9	1612.7	1614.3
34.5°	1558.6	1564.7	1558.6	1565.5	1565.9	1569.5
35°	1509.9	1513.9	1509.9	1516.3	1516.3	1521.2
35.5°	1458.3	1460.7	1458.3	1463.9	1466.3	1468.4
36°	1405.1	1405.5	1405.1	1408.3	1412.7	1413.5
36.5°	1348.7	1346.2	1348.7	1350.7	1357.1	1355.5
37°	1291.0	1287.8	1291.0	1292.2	1297.9	1293.0
37.5°	1231.0	1229.7	1231.0	1233.0	1234.6	1231.0
38°	1171.3	1170.1	1171.3	1169.7	1171.7	1168.9
38.5°	1106.4	1109.6	1106.4	1106.0	1105.2	1106.8
39°	1041.9	1048.4	1041.9	1041.9	1039.9	1043.5
39.5°	980.3	985.1	980.3	977.8	975.0	977.0
40°	919.4	923.0	919.4	915.8	912.1	910.5
40.5°	860.9	860.5	860.9	852.1	848.4	844.4
41°	800.5	798.9	800.5	790.0	784.8	780.3
41.5°	740.8	738.0	740.8	728.3	721.5	715.8
42°	682.0	680.0	682.0	669.5	660.2	654.6
42.5°	625.6	624.3	625.6	612.7	600.6	595.3
43°	571.9	570.7	571.9	557.4	544.9	538.1
43.5°	517.1	518.3	517.1	503.0	490.5	486.9



TEST NUMBER: P776463

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	368.4	373.6	368.4	355.5	341.8	340.2
45.5°	323.7	330.5	323.7	312.4	297.1	293.4
46°	284.6	291.8	284.6	271.7	255.1	252.3
46.5°	249.1	257.6	249.1	233.0	220.1	215.2
47°	215.2	223.3	215.2	197.1	187.0	181.4
47.5°	183.0	189.0	183.0	167.3	158.0	152.4
48°	153.6	154.8	153.6	139.5	133.0	126.2
48.5°	127.4	125.4	127.4	115.3	110.0	104.0
49°	104.8	101.6	104.8	93.5	89.9	86.3
49.5°	84.2	80.6	84.2	77.4	73.4	72.1
50°	68.5	64.5	68.5	62.1	57.6	58.0
50.5°	54.4	50.8	54.4	48.0	45.5	43.9
51°	43.5	40.3	43.5	39.1	34.7	33.9
51.5°	36.3	35.9	36.3	31.0	28.6	25.4
52°	28.6	31.4	28.6	26.2	23.8	22.2
52.5°	24.2	26.6	24.2	22.6	20.6	20.2
53°	21.0	22.2	21.0	19.3	19.3	18.9
53.5°	18.1	17.7	18.1	18.5	18.1	18.1
54°	17.3	16.9	17.3	17.3	17.3	17.3
54.5°	16.5	16.1	16.5	16.5	16.5	16.5
55°	15.7	15.3	15.7	15.7	15.7	15.7
55.5°	14.9	14.5	14.9	14.9	14.9	14.9
56°	14.1	13.7	14.1	14.1	14.1	14.1
56.5°	13.3	12.9	13.3	13.7	13.3	13.3
57°	12.5	12.5	12.5	12.9	12.5	12.5
57.5°	11.7	11.7	11.7	12.1	12.1	11.7
58°	11.3	10.9	11.3	11.3	11.3	11.3
58.5°	10.5	10.5	10.5	10.9	10.9	10.5
59°	10.1	9.7	10.1	10.1	10.1	10.1
59.5°	9.7	9.3	9.7	9.7	9.7	9.3
60°	8.9	8.9	8.9	9.3	8.9	8.9
60.5°	8.5	8.5	8.5	8.9	8.5	8.5
61°	8.1	8.1	8.1	8.1	8.1	8.1
61.5°	7.7	7.7	7.7	7.7	7.7	7.7
62°	7.3	7.3	7.3	7.3	7.3	7.3
62.5°	6.9	6.9	6.9	6.9	6.9	6.9
63°	6.4	6.4	6.4	6.4	6.4	6.4
63.5°	6.0	6.0	6.0	6.4	6.0	6.0
64°	6.0	5.6	6.0	6.0	5.6	5.6
64.5°	5.6	5.2	5.6	5.6	5.6	5.2
65°	5.2	5.2	5.2	5.2	5.2	5.2
65.5°	4.8	4.8	4.8	5.2	4.8	4.8
66°	4.8	4.8	4.8	4.8	4.8	4.4



TEST NUMBER: P776463

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.0	4.0	4.0	4.0	4.0	4.0
68°	4.0	3.6	4.0	4.0	3.6	3.6
68.5°	3.6	3.6	3.6	3.6	3.6	3.6
69°	3.6	3.2	3.6	3.6	3.2	3.2
69.5°	3.2	3.2	3.2	3.2	3.2	3.2
70°	3.2	3.2	3.2	3.2	2.8	2.8
70.5°	2.8	2.8	2.8	2.8	2.8	2.8
71°	2.8	2.8	2.8	2.8	2.8	2.8
71.5°	2.8	2.4	2.8	2.8	2.4	2.4
72°	2.4	2.4	2.4	2.4	2.4	2.4
72.5°	2.4	2.4	2.4	2.4	2.4	2.4
73°	2.4	2.0	2.4	2.0	2.0	2.0
73.5°	2.0	2.0	2.0	2.0	2.0	2.0
74°	2.0	2.0	2.0	2.0	2.0	2.0
74.5°	2.0	2.0	2.0	2.0	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6
75.5°	1.6	1.6	1.6	1.6	1.6	1.6
76°	1.6	1.6	1.6	1.6	1.6	1.6
76.5°	1.6	1.6	1.6	1.2	1.2	1.2
77°	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2
78°	1.2	1.2	1.2	1.2	1.2	1.2
78.5°	1.2	1.2	1.2	1.2	0.8	0.8
79°	1.2	0.8	1.2	0.8	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.8	0.8
80°	0.8	0.8	0.8	0.8	0.8	0.8
80.5°	0.8	0.8	0.8	0.8	0.8	0.8
81°	0.8	0.8	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.0
85.5°	0.4	0.4	0.4	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: P776463
CATALOG NUMBER: HCDJBL3040CSD-HCD82TRC-4000lm-4000K

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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Cooper Lighting Solutions Photometric Lab
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Scaled Data Report





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

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Scaled Data Report





21.5°	3151.6	3149.5	3155.2	3172.9	3170.5	3172.9	3155.2	3149.5	3151.6	3149.5	3155.2
22°	2974.6	3002.8	3016.1	3039.5	3036.7	3039.5	3016.1	3002.8	2974.6	3002.8	3016.1



44°	436.5	439.7	451.0	465.1	466.7	465.1	451.0	439.7	436.5	439.7	451.0
44.5°	387.7	389.8	400.6	415.2	419.2	415.2	400.6	389.8	387.7	389.8	400.6



66.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
67°	4.0	4.0	4.4	4.4	4.0	4.4	4.4	4.0	4.0	4.0	4.4



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°	3172.9	3170.5	3172.9	3155.2	3149.5	3151.6
22°	3039.5	3036.7	3039.5	3016.1	3002.8	2974.6



44°	465.1	466.7	465.1	451.0	439.7	436.5
44.5°	415.2	419.2	415.2	400.6	389.8	387.7

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66.5°	4.4	4.4	4.4	4.4	4.4	4.4
67°	4.4	4.0	4.4	4.4	4.0	4.0

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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)