

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: P236467

Luminaire Tested: **SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236467
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24056)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal
Description: METALUX SKYBAR LED WAVESTREAM LUMINAIRE
4 BLADES WITH NARROW DISTRIBUTION LENS, ALL BLADES HORIZONTAL
Light Source: (952) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

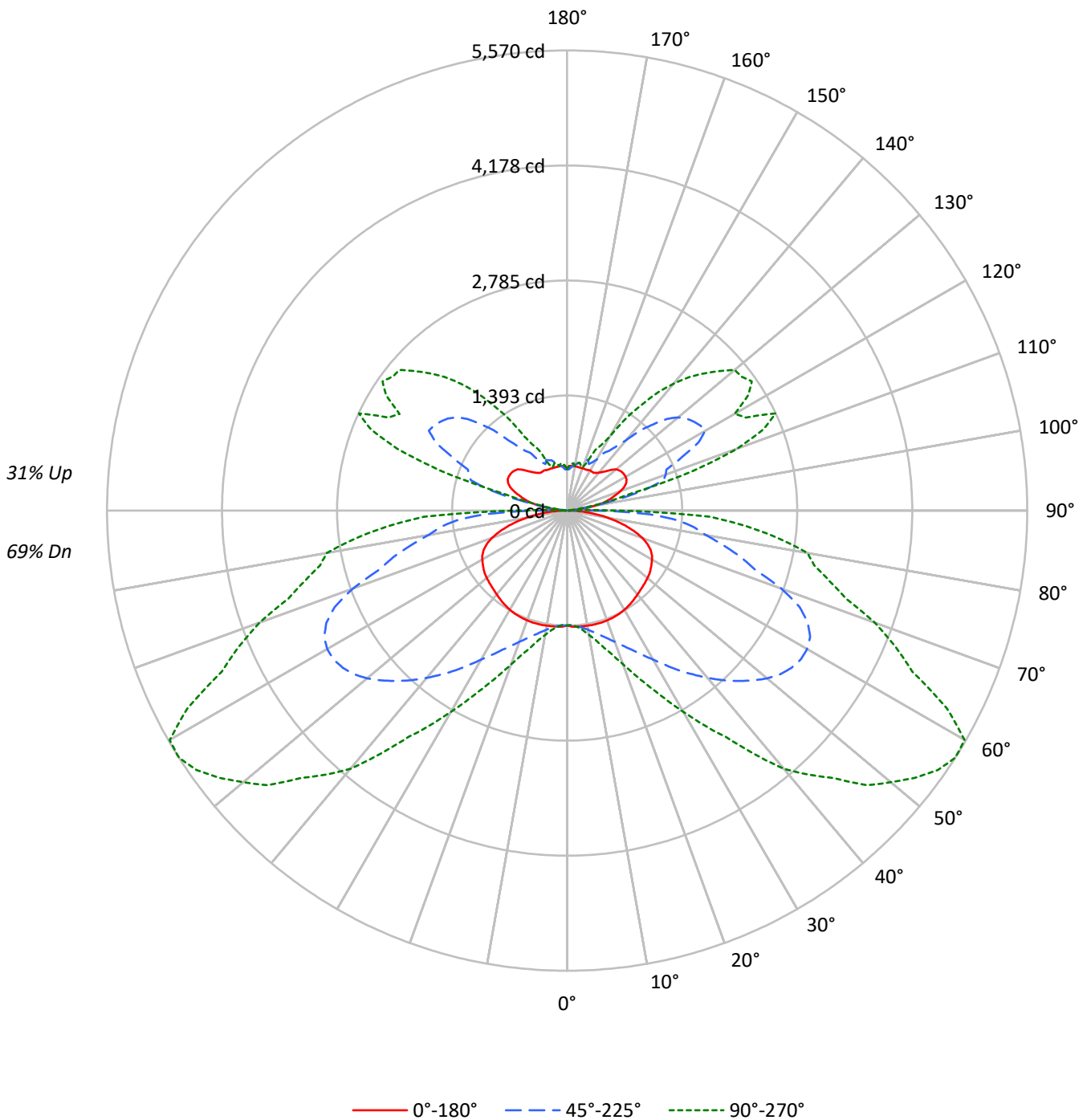
Lumens per Lamp: N/A
Luminaire Lumens: 21273.0 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.49 / 3.46 / 2.71
Luminous Opening: Rectangular (W 1.88' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 206.2
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

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CATALOG NUMBER: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal

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	0
RCR																		
0	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	69
1	98	92	87	82	92	87	82	77	77	73	69	68	65	62	59	57	55	50
2	87	77	69	62	81	73	65	59	64	58	53	56	51	47	49	45	42	38
3	78	66	56	49	73	62	53	46	54	47	42	47	42	37	41	37	33	29
4	70	57	47	39	65	53	44	37	47	39	33	41	35	30	35	30	26	23
5	64	49	40	32	59	47	37	31	41	33	27	36	29	24	31	26	21	18
6	58	44	34	27	54	41	32	26	36	29	23	31	25	20	27	22	18	15
7	53	39	29	23	50	37	28	22	32	25	19	28	22	17	24	19	15	12
8	49	35	26	20	46	33	25	19	29	22	17	25	19	15	22	17	13	11
9	46	32	23	17	43	30	22	16	26	19	15	23	17	13	20	15	11	9
10	43	29	20	15	40	27	19	14	24	17	13	21	15	11	18	13	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1994	1994	1994
5°	2031	2023	2037
10°	2062	2134	2226
15°	2105	2322	2548
20°	2161	2583	3025
25°	2225	2948	3714
30°	2299	3450	4657
35°	2379	4138	5857
40°	2482	4954	7647
45°	2630	5920	9298
50°	2834	7055	11421
55°	3087	8297	13700
60°	3403	9626	15946
65°	3779	10919	15662
70°	4059	11573	16611
75°	4169	12074	18227
80°	4125	14075	24405
85°	4039	22064	35891



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.3	0.6
10°-20°	448.5	2.1
20°-30°	876.7	4.1
30°-40°	1495.7	7.0
40°-50°	2283.1	10.7
50°-60°	2985.1	14.0
60°-70°	2990.5	14.1
70°-80°	2241.5	10.5
80°-90°	1308.4	6.2
90°-100°	144.9	0.7
100°-110°	895.2	4.2
110°-120°	1589.3	7.5
120°-130°	1568.0	7.4
130°-140°	1147.1	5.4
140°-150°	626.9	2.9
150°-160°	316.6	1.5
160°-170°	168.0	0.8
170°-180°	51.2	0.2
0°-30°	1461.5	6.9
0°-40°	2957.3	13.9
0°-60°	8225.4	38.7
0°-90°	14765.8	69.4
90°-120°	2629.4	12.4
90°-150°	5971.3	28.1
90°-180°	6507.0	30.6
0°-180°	21273.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1389	1389	1389	1389	1389	
5°	1410	1414	1404	1404	1414	135
15°	1417	1471	1563	1659	1715	402
25°	1405	1547	1862	2212	2346	649
35°	1358	1637	2362	3098	3343	852
45°	1296	1742	2916	4169	4581	1003
55°	1234	1818	3316	4924	5475	1105
65°	1113	1688	3215	4353	4612	1089
75°	752	1257	2177	2961	3287	786
85°	245	547	1340	1967	2180	253
90°	18	81	341	525	614	26
95°	124	79	25	19	18	146
105°	539	681	972	972	809	560
115°	788	1065	1534	2212	2782	768
125°	812	954	1874	2521	2729	724
135°	676	725	1479	2161	2350	530
145°	558	678	882	1336	1552	357
155°	546	624	620	747	810	254
165°	543	579	612	629	597	154
175°	542	535	523	496	567	52
180°	503	503	503	503	503	



TEST NUMBER: P236467

CATALOG NUMBER: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2
2.5°	1406.3	1407.4	1408.4	1408.4	1409.5	1409.5	1402.0	1398.8	1394.5	1389.2	1385.9
5°	1409.5	1409.5	1410.6	1411.6	1413.8	1414.9	1410.6	1408.4	1406.3	1404.1	1403.1
7.5°	1411.6	1412.7	1413.8	1415.9	1423.4	1428.8	1425.6	1427.7	1429.9	1429.9	1432.0
10°	1414.9	1415.9	1419.1	1426.6	1437.3	1449.1	1452.3	1457.7	1462.0	1464.1	1470.6
12.5°	1417.0	1418.1	1424.5	1435.2	1449.1	1464.1	1472.7	1484.5	1496.3	1510.2	1523.0
15°	1417.0	1419.1	1427.7	1441.6	1460.9	1481.3	1497.3	1520.9	1542.3	1562.7	1583.0
17.5°	1417.0	1419.1	1428.8	1449.1	1474.8	1502.7	1529.5	1562.7	1591.6	1620.5	1656.9
20°	1414.9	1417.0	1430.9	1456.6	1487.7	1525.2	1562.7	1604.4	1647.3	1691.2	1738.3
22.5°	1410.6	1414.9	1432.0	1463.1	1501.6	1550.9	1598.0	1654.8	1712.6	1770.4	1835.8
25°	1405.2	1409.5	1432.0	1468.4	1517.7	1576.6	1637.6	1710.5	1783.3	1861.5	1948.2
27.5°	1396.6	1403.1	1429.9	1473.8	1533.7	1604.4	1681.5	1770.4	1865.8	1968.6	2068.2
30°	1387.0	1394.5	1425.6	1477.0	1548.7	1633.3	1727.6	1837.9	1961.1	2082.1	2214.9
32.5°	1373.1	1381.7	1418.1	1480.2	1561.6	1663.3	1775.8	1918.2	2063.9	2217.1	2373.4
35°	1358.1	1368.8	1411.6	1482.3	1575.5	1697.6	1833.6	2003.9	2178.5	2361.7	2539.5
37.5°	1342.0	1354.9	1403.1	1484.5	1591.6	1730.8	1897.9	2089.6	2295.3	2498.8	2713.0
40°	1324.9	1341.0	1393.4	1485.5	1607.6	1769.4	1962.2	2179.6	2406.6	2644.4	2885.4
42.5°	1308.8	1327.0	1383.8	1485.5	1623.7	1806.9	2021.1	2267.4	2521.2	2783.7	3050.3
45°	1296.0	1315.2	1375.2	1485.5	1639.8	1844.3	2078.9	2353.1	2632.6	2916.5	3211.0
47.5°	1283.1	1303.5	1366.7	1484.5	1654.8	1879.7	2133.5	2428.1	2730.1	3043.9	3374.9
50°	1269.2	1291.7	1359.2	1484.5	1668.7	1911.8	2182.8	2492.3	2815.8	3159.6	3518.4
52.5°	1255.3	1277.8	1350.6	1483.4	1682.6	1936.5	2219.2	2539.5	2887.5	3252.8	3635.1
55°	1233.8	1259.6	1336.7	1479.1	1688.0	1947.2	2234.2	2571.6	2933.6	3316.0	3721.9
57.5°	1211.4	1238.1	1318.5	1469.5	1683.7	1940.7	2232.1	2582.3	2952.9	3352.4	3769.0
60°	1185.7	1211.4	1291.7	1449.1	1662.3	1916.1	2218.1	2567.3	2948.6	3353.5	3777.6
62.5°	1156.7	1179.2	1258.5	1417.0	1622.6	1874.3	2176.4	2533.0	2913.3	3316.0	3721.9
65°	1112.8	1133.2	1214.6	1369.9	1562.7	1813.3	2113.2	2464.5	2830.8	3215.3	3592.3
67.5°	1049.6	1070.0	1154.6	1304.5	1488.8	1731.9	2026.4	2361.7	2694.8	3045.0	3362.0
70°	967.2	987.5	1077.5	1215.6	1393.4	1632.3	1908.6	2211.7	2510.5	2758.0	2899.3
72.5°	866.5	890.0	981.1	1108.5	1284.2	1508.0	1762.9	2035.0	2201.0	2384.2	2632.6
75°	751.9	778.7	867.5	986.4	1156.7	1357.0	1593.7	1748.0	1937.5	2177.4	2391.7
77.5°	627.6	660.8	741.2	855.8	1010.0	1194.2	1338.8	1540.2	1734.0	1932.2	2128.2
80°	499.1	536.6	608.4	714.4	851.5	973.6	1143.9	1327.0	1508.0	1703.0	1893.6
82.5°	370.6	408.1	474.5	566.6	664.1	781.9	940.4	1120.3	1319.5	1549.8	1780.1
85°	245.3	277.4	336.3	385.6	482.0	611.6	800.1	991.8	1161.0	1339.9	1512.3
87.5°	128.5	147.8	183.1	253.8	358.8	456.3	583.7	715.5	833.3	989.6	1122.5
90°	18.2	19.3	25.7	34.3	66.4	95.3	155.3	226.0	256.0	340.6	380.2
92.5°	27.8	26.8	22.5	17.1	13.9	13.9	12.9	11.8	10.7	8.6	6.4
95°	124.2	135.0	123.2	106.0	83.5	73.9	54.6	38.6	32.1	24.6	22.5
97.5°	228.1	253.8	254.9	237.8	227.1	208.9	181.0	175.7	168.2	146.7	128.5
100°	343.8	380.2	392.0	378.1	373.8	398.4	392.0	364.2	328.8	301.0	313.8
102.5°	461.6	494.8	518.4	558.0	509.8	544.1	592.3	623.4	645.8	625.5	580.5
105°	538.7	566.6	609.4	666.2	708.0	653.3	699.4	810.8	913.6	972.5	1010.0
107.5°	607.3	626.6	680.1	749.7	827.9	872.9	802.2	877.2	1049.6	1219.9	1344.2
110°	687.6	700.5	729.4	825.8	911.5	1026.1	1051.8	991.8	1076.4	1270.3	1522.0



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CATALOG NUMBER: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	747.6	750.8	742.2	859.0	973.6	1086.0	1243.5	1273.5	1241.3	1300.3	1455.6
115°	788.3	782.9	752.9	848.3	998.2	1132.1	1285.3	1478.0	1529.5	1533.7	1559.4
117.5°	810.8	801.1	773.3	831.1	995.0	1157.8	1314.2	1509.1	1710.5	1794.0	1864.7
120°	818.3	807.6	799.0	796.9	951.1	1153.5	1336.7	1515.5	1720.1	1932.2	2052.1
122.5°	817.2	808.6	820.4	763.7	898.6	1120.3	1329.2	1519.8	1704.0	1912.9	2120.7
125°	811.9	805.4	829.0	757.2	862.2	1045.3	1282.0	1498.4	1683.7	1874.3	2061.8
127.5°	799.0	795.8	825.8	761.5	812.9	967.2	1212.4	1441.6	1640.8	1827.2	2008.2
130°	777.6	777.6	806.5	777.6	759.4	901.8	1090.3	1345.2	1557.3	1753.3	1938.6
132.5°	731.5	736.9	763.7	777.6	728.3	839.7	980.0	1209.2	1424.5	1643.0	1822.9
135°	675.8	686.5	714.4	752.9	697.3	752.9	894.3	1044.3	1279.9	1479.1	1684.8
137.5°	634.1	648.0	675.8	726.2	706.9	709.0	837.6	944.7	1091.4	1319.5	1497.3
140°	598.7	613.7	641.6	696.2	710.1	674.8	741.2	875.0	971.4	1111.7	1317.4
142.5°	574.1	586.9	612.6	663.0	693.0	666.2	695.1	791.5	883.6	978.9	1091.4
145°	558.0	568.7	590.1	630.8	673.7	682.3	656.6	708.0	812.9	881.5	963.9
147.5°	558.0	562.3	575.2	601.9	653.3	676.9	657.6	668.3	711.2	826.8	871.8
150°	561.2	562.3	574.1	591.2	633.0	667.3	682.3	636.2	667.3	709.0	786.1
152.5°	551.6	556.9	578.4	596.6	623.4	657.6	667.3	667.3	627.6	659.8	687.6
155°	546.2	550.5	573.0	590.1	608.4	639.4	656.6	666.2	659.8	620.1	640.5
157.5°	545.2	547.3	564.4	581.6	598.7	618.0	643.7	653.3	657.6	661.9	636.2
160°	544.1	545.2	560.2	574.1	590.1	603.0	621.2	641.6	645.8	648.0	664.1
162.5°	543.0	544.1	555.9	570.9	581.6	593.4	603.0	618.0	630.8	638.3	641.6
165°	543.0	543.0	551.6	566.6	575.2	583.7	591.2	597.6	600.9	611.6	621.2
167.5°	543.0	543.0	547.3	558.0	569.8	573.0	577.3	582.7	581.6	581.6	581.6
170°	544.1	544.1	544.1	549.4	559.1	565.5	565.5	566.6	563.4	560.2	553.7
172.5°	543.0	542.0	542.0	542.0	545.2	548.4	551.6	552.7	547.3	542.0	533.4
175°	542.0	540.9	538.7	536.6	536.6	533.4	531.2	529.1	524.8	522.7	516.2
177.5°	540.9	539.8	537.7	534.5	532.3	527.0	521.6	515.2	505.5	499.1	489.5
180°	503.4	503.4	503.4	503.4	503.4	503.4	503.4	503.4	503.4	503.4	503.4



TEST NUMBER: P236467

CATALOG NUMBER: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2	1389.2
2.5°	1381.7	1377.4	1377.4	1379.5	1382.7	1382.7	1382.7	1387.0
5°	1400.9	1399.9	1402.0	1406.3	1409.5	1409.5	1408.4	1413.8
7.5°	1434.1	1435.2	1439.5	1447.0	1452.3	1453.4	1453.4	1459.8
10°	1478.0	1484.5	1496.3	1507.0	1515.5	1518.7	1520.9	1527.3
12.5°	1537.0	1547.7	1562.7	1578.7	1591.6	1598.0	1601.2	1605.5
15°	1605.5	1625.9	1648.3	1669.8	1688.0	1698.7	1704.0	1714.7
17.5°	1690.1	1718.0	1745.8	1777.9	1802.6	1817.6	1826.1	1832.6
20°	1784.4	1828.3	1870.1	1912.9	1945.0	1964.3	1973.9	1980.4
22.5°	1901.1	1958.9	2012.5	2066.1	2103.5	2134.6	2148.5	2152.8
25°	2028.6	2103.5	2177.4	2246.0	2297.4	2324.2	2339.2	2345.6
27.5°	2178.5	2276.0	2359.5	2436.6	2494.5	2538.4	2558.7	2567.3
30°	2346.7	2458.1	2563.0	2661.6	2728.0	2775.1	2800.8	2810.4
32.5°	2527.7	2670.1	2789.0	2892.9	2985.0	3035.4	3067.5	3077.1
35°	2729.0	2885.4	3033.2	3162.8	3260.3	3314.9	3333.1	3342.7
37.5°	2921.8	3115.7	3280.6	3420.9	3544.1	3633.0	3685.5	3706.9
40°	3124.3	3336.3	3524.8	3709.0	3882.6	4000.4	4061.4	4081.8
42.5°	3316.0	3560.2	3793.7	4010.0	4181.4	4267.1	4316.3	4335.6
45°	3514.1	3794.7	4057.1	4281.0	4436.3	4513.4	4563.7	4580.9
47.5°	3706.9	4015.4	4301.3	4527.3	4707.3	4826.1	4895.8	4920.4
50°	3877.2	4214.6	4514.5	4765.1	4940.7	5032.9	5088.6	5115.3
52.5°	4021.8	4374.2	4688.0	4922.5	5100.3	5212.8	5283.5	5311.3
55°	4115.0	4484.5	4799.4	5048.9	5238.5	5360.6	5438.8	5475.2
57.5°	4171.7	4543.4	4860.4	5115.3	5314.5	5443.1	5524.5	5569.5
60°	4167.5	4527.3	4842.2	5092.8	5282.4	5416.3	5503.0	5555.5
62.5°	4095.7	4427.7	4712.6	4921.5	5076.8	5132.5	5141.0	5180.7
65°	3925.4	4180.3	4315.3	4390.2	4490.9	4549.8	4573.4	4611.9
67.5°	3514.1	3649.1	3831.1	3996.1	4141.7	4221.0	4268.1	4299.2
70°	3105.0	3334.2	3534.5	3696.2	3814.0	3896.5	3920.0	3958.6
72.5°	2852.2	3049.3	3218.5	3350.2	3452.0	3514.1	3522.7	3536.6
75°	2568.4	2723.7	2887.5	3034.3	3152.1	3220.6	3266.7	3287.0
77.5°	2314.5	2485.9	2648.7	2796.5	2922.9	2997.9	3045.0	3062.1
80°	2085.3	2298.5	2499.8	2664.8	2802.9	2903.6	2939.0	2952.9
82.5°	1980.4	2159.2	2314.5	2427.0	2522.3	2572.7	2584.4	2586.6
85°	1670.8	1800.4	1918.2	2015.7	2104.6	2161.4	2182.8	2179.6
87.5°	1253.1	1359.2	1467.3	1559.4	1650.5	1714.7	1738.3	1736.2
90°	448.8	448.8	508.7	542.0	635.1	694.0	673.7	613.7
92.5°	4.3	4.3	3.2	2.1	2.1	1.1	1.1	1.1
95°	20.3	20.3	19.3	19.3	19.3	18.2	18.2	18.2
97.5°	103.9	93.2	78.2	68.5	55.7	48.2	47.1	45.0
100°	314.9	309.5	293.5	283.8	269.9	259.2	256.0	256.0
102.5°	522.7	473.4	460.6	471.3	483.0	487.3	487.3	490.5
105°	1030.3	1025.0	998.2	946.8	885.8	830.1	809.7	808.6
107.5°	1434.1	1514.5	1571.2	1598.0	1611.9	1601.2	1598.0	1610.9
110°	1711.5	1863.6	1991.1	2080.0	2138.9	2156.0	2168.9	2184.9



TEST NUMBER: P236467

CATALOG NUMBER: SKB4-LD5-24-N-UNV-L840-CD4-U all blades horizontal

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1712.6	1993.2	2235.3	2383.1	2483.8	2527.7	2553.4	2571.6
115°	1674.0	1839.0	2097.1	2327.4	2536.2	2674.4	2748.3	2781.5
117.5°	1858.3	1908.6	2028.6	2142.1	2256.7	2352.0	2413.1	2438.8
120°	2116.4	2180.7	2192.4	2228.9	2291.0	2313.5	2327.4	2341.3
122.5°	2255.6	2312.4	2390.6	2468.8	2513.8	2550.2	2576.9	2596.2
125°	2276.0	2398.1	2498.8	2543.7	2569.4	2614.4	2690.5	2729.0
127.5°	2180.7	2355.2	2517.0	2572.7	2631.6	2644.4	2656.2	2661.6
130°	2103.5	2257.8	2376.7	2496.6	2596.2	2640.1	2647.6	2647.6
132.5°	2002.9	2132.5	2267.4	2365.9	2421.6	2462.3	2488.0	2498.8
135°	1843.3	1993.2	2116.4	2205.3	2284.5	2324.2	2341.3	2349.9
137.5°	1673.0	1811.1	1931.1	2048.9	2131.4	2174.2	2190.3	2194.6
140°	1469.5	1601.2	1736.2	1844.3	1918.2	1972.9	1999.6	2003.9
142.5°	1266.0	1402.0	1505.9	1601.2	1689.0	1757.6	1794.0	1803.6
145°	1045.3	1158.9	1287.4	1383.8	1460.9	1509.1	1540.2	1552.0
147.5°	931.8	995.0	1050.7	1122.5	1198.5	1269.2	1312.0	1321.7
150°	852.6	889.0	931.8	972.5	1004.6	1023.9	1038.9	1030.3
152.5°	735.8	837.6	857.9	874.0	886.8	901.8	893.3	893.3
155°	661.9	686.5	728.3	765.8	835.4	816.1	811.9	809.7
157.5°	615.9	626.6	644.8	650.1	646.9	641.6	644.8	637.3
160°	650.1	625.5	592.3	591.2	575.2	566.6	562.3	558.0
162.5°	642.6	649.1	649.1	633.0	608.4	581.6	565.5	560.2
165°	627.6	629.8	631.9	625.5	619.1	605.1	597.6	596.6
167.5°	585.9	596.6	605.1	612.6	618.0	609.4	594.4	590.1
170°	550.5	551.6	553.7	562.3	575.2	578.4	569.8	545.2
172.5°	524.8	521.6	520.5	528.0	545.2	559.1	564.4	578.4
175°	505.5	495.9	492.7	500.2	518.4	538.7	561.2	566.6
177.5°	476.6	464.8	458.4	465.9	483.0	509.8	536.6	539.8
180°	503.4	503.4	503.4	503.4	503.4	503.4	503.4	503.4

(END OF REPORT)