

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: P236500

Luminaire Tested: **SKB4-LD5-18-N-UNV-L840-CD2-U outer 2 blades tilted out 20 degrees**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P236500  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24058)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: SKB4-LD5-18-N-UNV-L840-CD2-U outer 2 blades tilted out 20 degrees  
Description: METALUX SKYBAR LED WAVESTREAM LUMINAIRE  
4 BLADES WITH NARROW DISTRIBUTION LENS, OUTER 2 BLADES TILTED OUT 20 DEGREES  
Light Source: (952) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

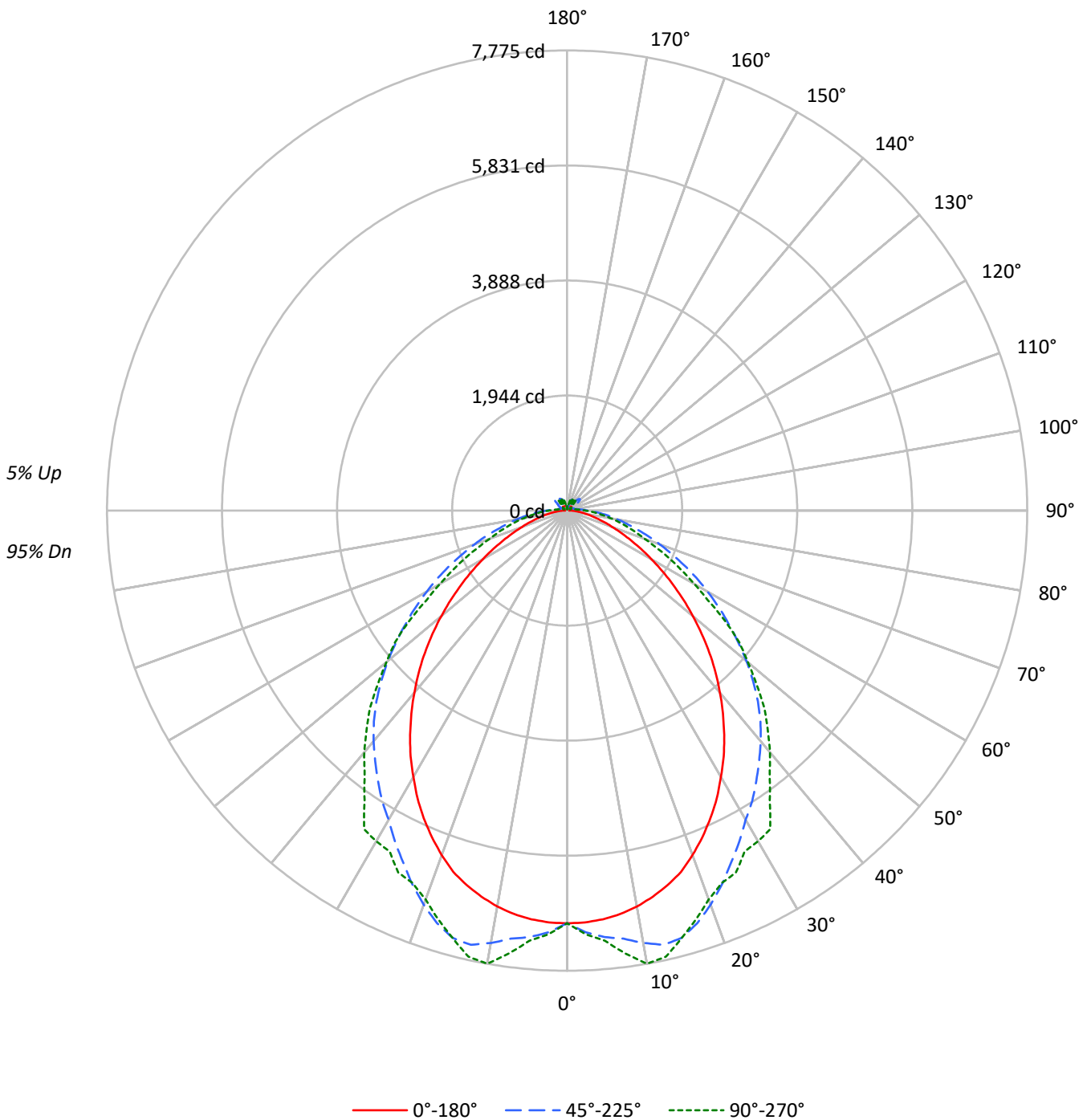
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 19850.0 lumens  
Efficiency: N/A  
Efficacy: 138.4 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.35 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 1.88' x L: 4' x H: 0.21')  
CIE Type: Direct  
  
Input Watts (W): 143.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	0
RCR																		
0	118	118	118	118	115	115	115	115	108	108	108	103	103	103	97	97	97	95
1	108	103	99	95	104	100	96	93	95	92	89	90	88	85	86	84	82	79
2	98	90	83	78	95	88	82	77	84	78	74	80	75	72	76	72	69	67
3	90	80	72	65	87	78	70	64	74	68	63	71	65	61	67	63	59	57
4	83	71	62	56	80	69	61	55	66	59	54	63	57	53	61	56	51	49
5	76	64	55	48	74	62	54	48	60	52	47	57	51	46	55	49	45	43
6	70	57	49	43	68	56	48	42	54	47	41	52	45	41	50	44	40	38
7	65	52	44	38	63	51	43	37	49	42	37	47	41	36	46	40	36	34
8	61	48	39	34	59	47	39	34	45	38	33	44	37	33	42	36	32	30
9	57	44	36	30	55	43	36	30	42	35	30	40	34	29	39	33	29	27
10	54	41	33	28	52	40	33	28	39	32	27	37	31	27	36	31	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10006	10006	10006
5°	9941	10315	10410
10°	9810	10593	11113
15°	9600	10772	10790
20°	9283	10385	10265
25°	8862	9855	10160
30°	8359	9371	10048
35°	7819	9033	9704
40°	7212	8687	9142
45°	6560	8292	8608
50°	5834	7757	7857
55°	5089	7148	7056
60°	4337	6558	5979
65°	3622	5922	5205
70°	2982	5297	4472
75°	2449	4692	4116
80°	2059	4347	3773
85°	1740	4173	3651



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	691.5	3.5
10°-20°	2036.3	10.3
20°-30°	2978.0	15.0
30°-40°	3446.7	17.4
40°-50°	3335.9	16.8
50°-60°	2732.4	13.8
60°-70°	1894.6	9.5
70°-80°	1150.9	5.8
80°-90°	591.9	3.0
90°-100°	232.2	1.2
100°-110°	134.9	0.7
110°-120°	131.2	0.7
120°-130°	140.7	0.7
130°-140°	142.8	0.7
140°-150°	107.9	0.5
150°-160°	69.2	0.3
160°-170°	27.2	0.1
170°-180°	5.6	0.0
0°-30°	5705.8	28.7
0°-40°	9152.6	46.1
0°-60°	15220.9	76.7
0°-90°	18858.3	95.0
90°-120°	498.3	2.5
90°-150°	889.8	4.5
90°-180°	992.0	5.0
0°-180°	19850.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6972	6972	6972	6972	6972	
5°	6932	7119	7232	7263	7296	657
15°	6552	7003	7474	7490	7478	1843
25°	5732	6413	6558	6660	6748	2633
35°	4626	5226	5572	5946	5970	2887
45°	3401	3909	4557	4773	4712	2619
55°	2185	2746	3328	3378	3267	1959
65°	1186	1801	2176	2077	1898	1188
75°	527	1143	1211	1134	1050	575
85°	169	630	588	551	503	170
90°	48	373	347	336	306	32
95°	37	240	223	212	190	31
105°	50	207	110	93	79	54
115°	71	281	127	79	60	71
125°	90	215	195	107	77	80
135°	93	227	273	196	124	72
145°	84	163	190	218	230	53
155°	78	42	205	229	218	36
165°	74	56	41	147	148	21
175°	71	69	72	72	69	7
180°	68	68	68	68	68	



TEST NUMBER: P236500

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L840-CD2-U outer 2 blades tilted out 20 degrees

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2
2.5°	6965.7	6960.9	6987.4	7019.5	7052.4	7046.8	7073.3	7107.0	7108.6	7130.3	7138.3
5°	6932.0	6938.4	6995.4	7058.0	7114.2	7124.7	7163.2	7206.6	7211.4	7232.3	7239.5
7.5°	6876.6	6898.3	6986.6	7068.5	7133.5	7142.3	7173.6	7226.6	7251.5	7296.5	7335.8
10°	6793.1	6838.1	6947.3	7027.5	7088.6	7116.7	7180.9	7270.8	7329.4	7416.9	7490.7
12.5°	6683.1	6744.2	6859.8	6941.6	7029.1	7091.8	7191.3	7323.8	7412.9	7514.8	7591.1
15°	6551.5	6628.6	6738.5	6839.7	6956.1	7050.0	7178.5	7332.6	7415.3	7473.9	7505.2
17.5°	6400.6	6479.2	6591.6	6715.3	6851.7	6969.7	7111.0	7246.7	7290.1	7308.5	7313.3
20°	6193.5	6297.8	6419.0	6560.3	6714.5	6850.9	6973.8	7081.3	7085.3	7085.3	7084.5
22.5°	5970.3	6089.1	6219.9	6375.7	6549.9	6687.2	6784.3	6862.2	6841.3	6834.9	6818.0
25°	5731.9	5852.3	5992.8	6165.4	6354.0	6472.0	6537.0	6591.6	6570.8	6557.9	6561.1
27.5°	5477.4	5596.2	5747.1	5932.5	6113.2	6207.9	6261.7	6309.9	6286.6	6301.0	6312.3
30°	5195.6	5324.0	5471.0	5671.6	5838.6	5903.6	5957.4	6007.2	5994.4	6031.3	6130.8
32.5°	4921.8	5035.8	5190.8	5385.9	5531.2	5581.7	5650.0	5691.7	5700.5	5818.6	5905.3
35°	4625.6	4738.0	4893.8	5079.2	5198.8	5252.6	5334.5	5365.0	5471.0	5572.1	5678.1
37.5°	4323.0	4430.5	4583.9	4758.1	4862.4	4921.8	5001.3	5106.5	5209.2	5329.7	5450.9
40°	4017.9	4115.9	4263.6	4420.9	4522.1	4598.3	4696.3	4840.0	4948.3	5085.6	5203.6
42.5°	3712.1	3804.4	3934.4	4074.1	4185.7	4258.8	4424.9	4561.4	4692.3	4834.3	4944.3
45°	3400.6	3473.6	3606.1	3736.1	3862.2	3956.1	4141.5	4285.2	4432.2	4556.6	4655.3
47.5°	3085.1	3153.3	3280.2	3408.6	3542.7	3675.1	3851.7	4013.1	4149.6	4261.2	4354.3
50°	2775.2	2838.6	2959.0	3098.7	3228.0	3387.7	3570.0	3732.1	3853.3	3952.1	4031.6
52.5°	2475.0	2532.0	2649.2	2795.3	2938.2	3101.1	3285.8	3443.1	3554.7	3638.2	3714.5
55°	2185.2	2245.4	2357.0	2500.7	2664.4	2827.4	3011.2	3154.1	3245.6	3327.5	3399.0
57.5°	1908.2	1966.8	2082.4	2226.9	2401.1	2566.5	2743.1	2872.3	2952.6	3031.3	3090.7
60°	1647.3	1707.5	1827.9	1978.9	2156.3	2320.8	2486.2	2598.6	2671.7	2741.5	2783.2
62.5°	1405.7	1465.9	1595.1	1755.7	1929.9	2091.2	2238.2	2332.9	2401.1	2458.1	2479.8
65°	1185.7	1248.3	1381.6	1550.2	1723.6	1877.7	2008.6	2084.8	2137.8	2175.5	2182.0
67.5°	987.4	1059.7	1191.3	1372.8	1539.7	1681.8	1794.2	1851.2	1890.5	1906.6	1910.6
70°	812.4	888.7	1029.2	1212.2	1377.6	1506.0	1588.7	1628.0	1653.7	1662.6	1669.8
72.5°	665.5	741.0	895.1	1072.5	1234.7	1338.2	1400.9	1425.7	1440.2	1433.0	1421.7
75°	527.4	614.9	778.7	954.5	1103.0	1182.5	1224.2	1241.9	1230.7	1210.6	1208.2
77.5°	419.9	505.8	678.3	851.8	977.8	1037.2	1064.5	1058.9	1043.6	1028.4	1030.0
80°	322.7	411.8	591.6	753.0	855.0	903.9	907.1	899.1	884.7	870.2	870.2
82.5°	240.0	335.6	517.0	651.9	739.4	767.5	766.7	756.2	737.8	720.9	716.9
85°	168.6	268.9	432.7	550.7	620.5	639.0	633.4	620.5	606.1	587.6	583.6
87.5°	109.2	210.3	352.4	443.9	496.9	509.0	501.7	488.1	477.7	462.4	460.0
90°	48.2	146.9	261.7	328.3	369.3	377.3	371.7	362.9	358.0	346.8	346.8
92.5°	31.3	102.0	192.7	253.7	293.0	305.1	299.4	291.4	285.8	277.0	274.6
95°	36.9	81.1	143.7	194.3	233.6	245.7	243.2	237.6	232.0	223.2	219.2
97.5°	40.1	77.9	138.1	172.6	195.1	207.1	203.1	196.7	189.5	179.8	175.0
100°	44.2	80.3	152.5	179.0	190.3	185.4	174.2	167.0	158.1	146.9	142.1
102.5°	49.0	79.5	163.0	197.5	199.9	187.0	166.2	146.9	136.5	125.2	118.8
105°	49.8	76.3	157.3	227.2	218.4	195.9	171.0	148.5	128.4	110.0	103.6
107.5°	51.4	73.1	148.5	239.2	248.1	214.3	176.6	152.5	130.9	109.2	97.1
110°	63.4	73.1	145.3	226.4	270.5	237.6	197.5	156.5	130.1	114.8	99.5



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CATALOG NUMBER: SKB4-LD5-18-N-UNV-L840-CD2-U outer 2 blades tilted out 20 degrees

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.4	62.6	142.1	201.5	287.4	268.9	220.8	179.8	138.1	109.2	101.2
115°	71.4	56.2	138.9	179.0	272.1	290.6	245.7	202.3	160.6	126.8	97.1
117.5°	76.3	54.6	139.7	188.7	244.8	313.9	267.3	224.0	183.0	146.9	118.0
120°	80.3	53.0	140.5	197.5	203.1	295.4	303.5	242.4	199.9	167.0	137.3
122.5°	85.9	54.6	131.7	194.3	191.9	264.9	314.7	280.2	215.1	181.4	153.3
125°	89.9	57.8	110.0	191.9	220.0	210.3	295.4	317.1	258.5	195.1	164.6
127.5°	93.9	61.0	86.7	189.5	232.8	180.6	259.3	303.5	294.6	243.2	179.8
130°	96.3	64.2	68.2	190.3	227.2	215.9	194.3	277.0	300.2	280.2	233.6
132.5°	95.5	68.2	49.0	179.8	220.0	246.5	168.6	231.2	281.0	290.6	276.2
135°	93.1	72.3	34.5	148.5	213.5	240.8	208.7	150.1	244.8	272.9	280.2
137.5°	91.5	80.3	32.9	112.4	213.5	230.4	248.1	170.2	168.6	238.4	260.9
140°	89.1	85.9	32.1	80.3	199.9	220.8	242.4	234.4	148.5	162.2	228.0
142.5°	86.7	88.3	33.7	53.8	163.0	215.1	228.8	242.4	200.7	138.9	148.5
145°	83.5	87.5	36.9	26.5	116.4	209.5	215.9	231.2	239.2	190.3	136.5
147.5°	82.7	85.9	42.5	24.1	80.3	172.6	213.5	218.4	231.2	236.0	199.1
150°	81.1	83.5	55.4	25.7	51.4	129.2	199.9	209.5	218.4	228.8	232.8
152.5°	79.5	81.1	69.8	29.7	27.3	86.7	161.4	210.3	207.9	215.1	224.8
155°	77.9	78.7	78.7	35.3	27.3	56.2	110.0	172.6	209.5	204.7	211.1
157.5°	77.1	77.1	84.3	49.0	28.1	25.7	77.1	122.8	170.2	200.7	207.9
160°	76.3	76.3	82.7	67.4	32.9	27.3	30.5	81.9	115.6	158.1	186.2
162.5°	74.7	74.7	77.1	77.9	49.8	28.9	26.5	29.7	73.9	95.5	134.1
165°	73.9	73.9	74.7	82.7	70.6	41.7	28.1	26.5	24.9	40.9	79.5
167.5°	73.1	72.3	73.1	76.3	81.1	67.4	44.2	29.7	25.7	24.9	23.3
170°	72.3	71.4	71.4	72.3	75.5	80.3	70.6	57.8	38.5	28.9	24.9
172.5°	71.4	70.6	70.6	70.6	70.6	72.3	77.1	78.7	71.4	65.0	54.6
175°	70.6	70.6	70.6	70.6	69.8	69.0	69.0	69.8	71.4	72.3	75.5
177.5°	69.8	69.8	69.8	69.8	69.8	69.0	68.2	68.2	67.4	66.6	65.8
180°	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2	6972.2
2.5°	7135.9	7142.3	7143.9	7150.4	7146.4	7166.4	7168.0	7164.0
5°	7237.9	7254.7	7256.3	7270.0	7272.4	7290.1	7298.9	7295.7
7.5°	7372.7	7419.3	7450.6	7486.7	7501.2	7536.5	7549.4	7548.5
10°	7557.4	7621.6	7668.2	7705.9	7725.2	7753.3	7770.1	7774.9
12.5°	7638.5	7677.0	7689.8	7694.7	7699.5	7705.9	7714.7	7718.7
15°	7512.4	7518.0	7502.0	7477.9	7473.1	7469.1	7475.5	7477.9
17.5°	7300.5	7293.3	7274.0	7258.7	7247.5	7241.1	7237.1	7241.9
20°	7066.9	7042.8	7013.1	7004.3	6997.0	6989.8	6987.4	6993.0
22.5°	6800.4	6787.5	6768.2	6773.9	6782.7	6797.1	6806.8	6814.0
25°	6550.7	6570.8	6626.2	6692.8	6724.1	6737.7	6740.1	6748.2
27.5°	6393.3	6439.1	6476.8	6506.5	6502.5	6497.7	6496.1	6494.5
30°	6202.3	6240.0	6285.8	6342.0	6382.9	6418.2	6440.7	6451.9
32.5°	5987.9	6055.4	6138.1	6236.0	6298.6	6350.8	6381.3	6383.7
35°	5768.8	5836.2	5916.5	5975.9	5979.9	5987.9	5976.7	5969.5
37.5°	5531.2	5595.4	5652.4	5691.7	5671.6	5654.0	5625.9	5619.5
40°	5283.1	5337.7	5378.6	5403.5	5376.2	5354.5	5340.1	5334.5
42.5°	5008.5	5051.9	5079.2	5082.4	5044.7	5027.0	5020.6	5012.6
45°	4710.7	4746.0	4773.3	4772.5	4744.4	4731.6	4724.4	4712.3
47.5°	4395.2	4437.8	4468.3	4455.4	4413.7	4388.0	4363.9	4335.8
50°	4077.3	4109.4	4117.5	4107.0	4050.0	4017.1	4000.3	3985.0
52.5°	3753.8	3774.7	3751.4	3743.4	3697.6	3688.8	3684.8	3671.9
55°	3425.5	3428.7	3389.3	3366.1	3308.3	3293.0	3286.6	3267.3
57.5°	3096.3	3082.7	3034.5	3001.6	2937.4	2888.4	2851.5	2820.2
60°	2772.8	2742.3	2700.6	2662.0	2596.2	2545.6	2510.3	2483.8
62.5°	2454.1	2422.0	2380.2	2342.5	2275.9	2224.5	2197.2	2177.9
65°	2167.5	2138.6	2094.5	2059.1	1996.5	1947.5	1917.8	1897.8
67.5°	1890.5	1872.1	1831.9	1780.6	1713.1	1670.6	1643.3	1623.2
70°	1634.5	1607.2	1564.6	1516.5	1461.9	1428.1	1408.9	1391.2
72.5°	1396.0	1363.1	1333.4	1299.7	1260.4	1233.1	1217.8	1213.0
75°	1191.3	1170.5	1146.4	1122.3	1091.8	1068.5	1053.2	1050.0
77.5°	1018.7	1002.7	983.4	964.1	935.2	914.4	900.7	894.3
80°	858.2	842.9	824.5	806.0	780.3	761.8	749.8	744.2
82.5°	709.7	694.4	680.0	666.3	649.4	630.2	619.7	616.5
85°	576.4	565.2	555.5	545.9	531.4	516.2	506.6	503.3
87.5°	457.6	453.6	446.3	439.9	428.7	415.8	407.8	404.6
90°	345.2	342.0	338.8	334.0	325.1	314.7	308.3	305.9
92.5°	272.9	270.5	268.1	264.1	257.7	248.9	242.4	240.0
95°	218.4	216.8	213.5	210.3	204.7	199.1	193.5	190.3
97.5°	172.6	171.8	169.4	167.8	164.6	158.1	153.3	150.1
100°	138.1	136.5	134.9	132.5	129.2	123.6	120.4	117.2
102.5°	114.8	113.2	110.8	108.4	105.2	101.2	97.1	94.7
105°	97.9	95.5	93.9	91.5	88.3	84.3	80.3	78.7
107.5°	86.7	85.9	81.9	79.5	75.5	73.1	69.8	66.6
110°	89.1	85.1	74.7	69.0	66.6	67.4	64.2	61.0





TEST NUMBER: P236500

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L840-CD2-U outer 2 blades tilted out 20 degrees

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	93.1	84.3	77.1	74.7	73.1	70.6	63.4	60.2
115°	85.1	83.5	81.1	76.3	73.1	68.2	63.4	60.2
117.5°	93.1	77.9	70.6	68.2	68.2	68.2	65.0	61.8
120°	112.4	95.5	80.3	69.8	64.2	60.2	55.4	52.2
122.5°	130.1	110.8	96.3	86.7	80.3	73.1	67.4	63.4
125°	142.9	126.0	111.6	102.0	94.7	86.7	81.1	77.1
127.5°	152.5	136.5	123.6	115.6	108.4	101.2	95.5	91.5
130°	174.2	146.1	134.1	126.0	118.8	113.2	107.6	104.4
132.5°	225.6	191.9	150.9	135.7	126.8	122.0	117.2	111.6
135°	278.6	226.4	207.9	184.6	154.1	138.1	129.2	124.4
137.5°	267.3	272.1	264.9	216.8	201.5	193.5	187.0	183.8
140°	248.1	258.5	262.5	264.1	262.5	256.9	244.0	230.4
142.5°	211.9	232.8	244.8	248.9	249.7	248.9	246.5	243.2
145°	118.0	185.4	211.1	224.0	231.2	232.8	232.8	230.4
147.5°	142.9	119.6	116.4	171.0	193.5	203.1	203.9	204.7
150°	226.4	165.4	136.5	119.6	110.0	102.0	100.3	100.3
152.5°	229.6	230.4	225.6	182.2	150.1	133.3	124.4	119.6
155°	217.6	224.0	228.8	229.6	228.8	226.4	222.4	217.6
157.5°	206.3	209.5	215.9	218.4	219.2	219.2	216.8	215.1
160°	208.7	210.3	204.7	206.3	206.3	207.1	204.7	203.9
162.5°	162.2	181.4	195.9	205.5	210.3	207.1	203.1	199.1
165°	94.7	115.6	140.5	153.3	162.2	167.8	161.4	148.5
167.5°	28.9	50.6	73.9	83.5	88.3	88.3	81.1	77.9
170°	24.1	23.3	22.5	22.5	21.7	20.9	18.5	20.9
172.5°	44.2	36.9	29.7	28.1	27.3	24.1	22.5	20.1
175°	75.5	73.1	72.3	72.3	73.1	73.1	73.1	69.0
177.5°	65.0	65.0	67.4	69.0	71.4	73.9	69.8	67.4
180°	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2

(END OF REPORT)