

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: P236501

Luminaire Tested: **SKB4-LD5-18-N-UNV-L850-CD2-U outer 2 blades tilted out 20 degrees**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236501
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-L850-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) 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

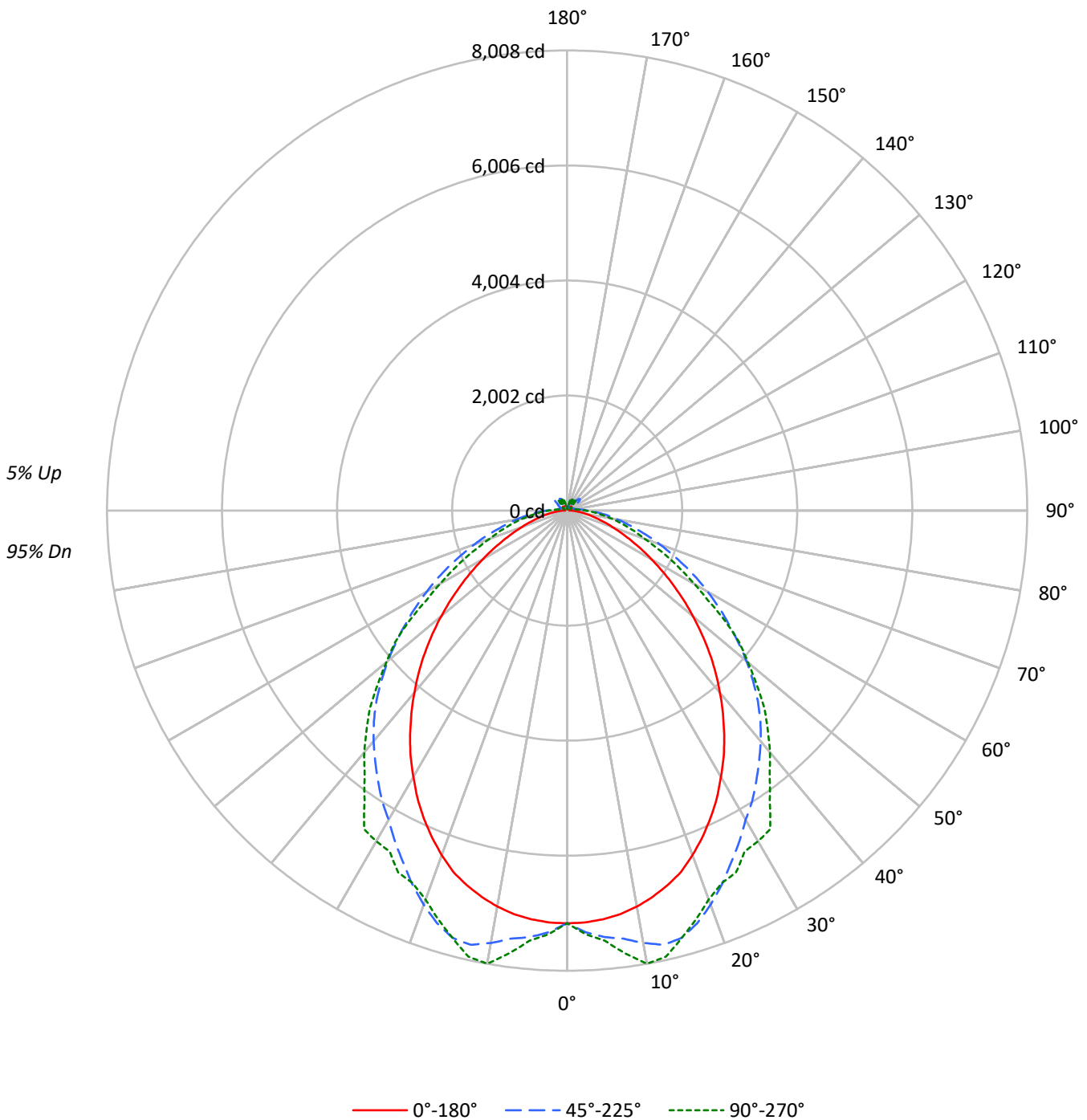
Lumens per Lamp: N/A
Luminaire Lumens: 20445.0 lumens
Efficiency: N/A
Efficacy: 142.6 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.35 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1.88' x L: 4' x H: 0.21')
CIE Type: Direct

Input Watts (W): 143.4
Input Voltage (V): 120
Input Current (A_{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: 25 FT

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CATALOG NUMBER: SKB4-LD5-18-N-UNV-L850-CD2-U outer 2 blades tilted out 20 degrees

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°	10306	10306	10306
5°	10239	10624	10722
10°	10104	10911	11446
15°	9888	11095	11113
20°	9562	10696	10573
25°	9127	10150	10464
30°	8609	9652	10349
35°	8054	9303	9995
40°	7429	8947	9416
45°	6757	8540	8866
50°	6009	7990	8093
55°	5242	7362	7267
60°	4467	6755	6158
65°	3730	6100	5361
70°	3072	5456	4607
75°	2522	4833	4239
80°	2121	4478	3886
85°	1792	4297	3761



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	712.2	3.5
10°-20°	2097.4	10.3
20°-30°	3067.3	15.0
30°-40°	3550.1	17.4
40°-50°	3435.9	16.8
50°-60°	2814.3	13.8
60°-70°	1951.3	9.5
70°-80°	1185.4	5.8
80°-90°	609.7	3.0
90°-100°	239.2	1.2
100°-110°	139.0	0.7
110°-120°	135.1	0.7
120°-130°	145.0	0.7
130°-140°	147.1	0.7
140°-150°	111.1	0.5
150°-160°	71.3	0.3
160°-170°	28.0	0.1
170°-180°	5.7	0.0
0°-30°	5876.9	28.7
0°-40°	9426.9	46.1
0°-60°	15677.1	76.7
0°-90°	19423.6	95.0
90°-120°	513.3	2.5
90°-150°	916.4	4.5
90°-180°	1021.0	5.0
0°-180°	20445.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7181	7181	7181	7181	7181	
5°	7140	7333	7449	7481	7514	677
15°	6748	7213	7698	7714	7702	1898
25°	5904	6605	6754	6859	6950	2712
35°	4764	5382	5739	6124	6148	2974
45°	3502	4026	4693	4916	4854	2697
55°	2251	2828	3427	3479	3365	2018
65°	1221	1855	2241	2139	1955	1224
75°	543	1177	1247	1168	1082	592
85°	174	649	605	567	518	175
90°	50	384	357	346	315	33
95°	38	247	230	218	196	32
105°	51	213	113	96	81	55
115°	74	290	131	81	62	73
125°	93	222	201	110	79	83
135°	96	234	281	202	128	74
145°	86	168	196	224	237	55
155°	80	43	211	236	224	37
165°	76	58	42	151	153	22
175°	73	72	74	74	71	7
180°	70	70	70	70	70	



TEST NUMBER: P236501

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L850-CD2-U outer 2 blades tilted out 20 degrees

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1
2.5°	7174.5	7169.6	7196.8	7229.9	7263.8	7258.0	7285.3	7320.0	7321.7	7344.0	7352.3
5°	7139.8	7146.4	7205.1	7269.6	7327.5	7338.2	7377.9	7422.6	7427.5	7449.0	7456.5
7.5°	7082.7	7105.1	7196.0	7280.4	7347.3	7356.4	7388.7	7443.2	7468.9	7515.2	7555.7
10°	6996.8	7043.1	7155.5	7238.2	7301.0	7330.0	7396.1	7488.7	7549.1	7639.2	7715.3
12.5°	6883.5	6946.3	7065.4	7149.7	7239.8	7304.3	7406.9	7543.3	7635.1	7740.1	7818.6
15°	6747.9	6827.3	6940.5	7044.7	7164.6	7261.3	7393.6	7552.4	7637.6	7697.9	7730.2
17.5°	6592.4	6673.5	6789.2	6916.5	7057.1	7178.7	7324.2	7463.9	7508.6	7527.6	7532.5
20°	6379.1	6486.6	6611.4	6757.0	6915.7	7056.3	7182.8	7293.6	7297.7	7297.7	7296.9
22.5°	6149.2	6271.6	6406.4	6566.8	6746.2	6887.6	6987.7	7067.9	7046.4	7039.7	7022.4
25°	5903.7	6027.7	6172.4	6350.2	6544.5	6666.0	6733.0	6789.2	6767.7	6754.5	6757.8
27.5°	5641.6	5763.9	5919.4	6110.4	6296.4	6394.0	6449.4	6499.0	6475.0	6489.9	6501.5
30°	5351.3	5483.6	5634.9	5841.7	6013.6	6080.6	6136.0	6187.3	6174.0	6212.1	6314.6
32.5°	5069.4	5186.8	5346.4	5547.3	5697.0	5749.0	5819.3	5862.3	5871.4	5993.0	6082.3
35°	4764.3	4880.0	5040.4	5231.4	5354.6	5410.0	5494.4	5525.8	5634.9	5739.1	5848.3
37.5°	4452.6	4563.4	4721.3	4900.7	5008.2	5069.4	5151.2	5259.6	5365.4	5489.4	5614.3
40°	4138.4	4239.2	4391.4	4553.4	4657.6	4736.2	4837.0	4985.0	5096.7	5238.1	5359.6
42.5°	3823.3	3918.4	4052.4	4196.2	4311.2	4386.4	4557.6	4698.1	4832.9	4979.3	5092.5
45°	3502.5	3577.8	3714.2	3848.1	3977.9	4074.7	4265.7	4413.7	4565.0	4693.2	4794.9
47.5°	3177.6	3247.8	3378.5	3510.8	3648.9	3785.3	3967.2	4133.4	4274.0	4388.9	4484.8
50°	2858.4	2923.7	3047.7	3191.6	3324.7	3489.3	3677.0	3844.0	3968.9	4070.6	4152.4
52.5°	2549.2	2607.9	2728.6	2879.1	3026.2	3194.1	3384.3	3546.3	3661.3	3747.3	3825.8
55°	2250.7	2312.7	2427.6	2575.6	2744.3	2912.1	3101.5	3248.7	3342.9	3427.3	3500.9
57.5°	1965.4	2025.8	2144.8	2293.7	2473.1	2643.4	2825.3	2958.4	3041.1	3122.2	3183.3
60°	1696.7	1758.7	1882.7	2038.2	2220.9	2390.4	2560.7	2676.5	2751.7	2823.7	2866.7
62.5°	1447.8	1509.8	1642.9	1808.3	1987.7	2153.9	2305.2	2402.8	2473.1	2531.8	2554.1
65°	1221.2	1285.7	1423.0	1596.6	1775.2	1934.0	2068.8	2147.3	2201.9	2240.7	2247.4
67.5°	1017.0	1091.4	1227.0	1413.9	1585.9	1732.2	1848.0	1906.7	1947.2	1963.8	1967.9
70°	836.8	915.3	1060.0	1248.5	1418.9	1551.2	1636.3	1676.8	1703.3	1712.4	1719.8
72.5°	685.5	763.2	921.9	1104.7	1271.7	1378.3	1442.8	1468.5	1483.4	1475.9	1464.3
75°	543.2	633.4	802.0	983.1	1136.1	1217.9	1260.9	1279.1	1267.6	1246.9	1244.4
77.5°	432.4	520.9	698.7	877.3	1007.1	1068.3	1096.4	1090.6	1074.9	1059.2	1060.8
80°	332.4	424.2	609.4	775.6	880.6	931.0	934.3	926.1	911.2	896.3	896.3
82.5°	247.2	345.6	532.5	671.4	761.5	790.5	789.6	778.9	759.9	742.5	738.4
85°	173.6	277.0	445.7	567.2	639.2	658.2	652.4	639.2	624.3	605.2	601.1
87.5°	112.5	216.6	363.0	457.2	511.8	524.2	516.8	502.7	492.0	476.3	473.8
90°	49.6	151.3	269.6	338.2	380.3	388.6	382.8	373.7	368.8	357.2	357.2
92.5°	32.2	105.0	198.4	261.3	301.8	314.2	308.4	300.1	294.4	285.3	282.8
95°	38.0	83.5	148.0	200.1	240.6	253.0	250.5	244.7	239.0	229.9	225.7
97.5°	41.3	80.2	142.2	177.8	200.9	213.3	209.2	202.6	195.1	185.2	180.3
100°	45.5	82.7	157.1	184.4	196.0	191.0	179.4	172.0	162.9	151.3	146.4
102.5°	50.4	81.9	167.8	203.4	205.9	192.7	171.2	151.3	140.6	129.0	122.4
105°	51.3	78.6	162.1	234.0	224.9	201.7	176.1	153.0	132.3	113.3	106.7
107.5°	52.9	75.2	153.0	246.4	255.5	220.8	181.9	157.1	134.8	112.5	100.0
110°	65.3	75.2	149.7	233.2	278.6	244.7	203.4	161.2	133.9	118.2	102.5



TEST NUMBER: P236501

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L850-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°	69.5	64.5	146.4	207.5	296.0	277.0	227.4	185.2	142.2	112.5	104.2
115°	73.6	57.9	143.0	184.4	280.3	299.3	253.0	208.4	165.4	130.6	100.0
117.5°	78.6	56.2	143.9	194.3	252.2	323.3	275.3	230.7	188.5	151.3	121.5
120°	82.7	54.6	144.7	203.4	209.2	304.3	312.5	249.7	205.9	172.0	141.4
122.5°	88.5	56.2	135.6	200.1	197.6	272.9	324.1	288.6	221.6	186.9	157.9
125°	92.6	59.5	113.3	197.6	226.6	216.6	304.3	326.6	266.2	200.9	169.5
127.5°	96.7	62.8	89.3	195.1	239.8	186.0	267.1	312.5	303.5	250.5	185.2
130°	99.2	66.1	70.3	196.0	234.0	222.4	200.1	285.3	309.2	288.6	240.6
132.5°	98.4	70.3	50.4	185.2	226.6	253.8	173.6	238.1	289.4	299.3	284.4
135°	95.9	74.4	35.6	153.0	219.9	248.1	215.0	154.6	252.2	281.1	288.6
137.5°	94.3	82.7	33.9	115.8	219.9	237.3	255.5	175.3	173.6	245.6	268.7
140°	91.8	88.5	33.1	82.7	205.9	227.4	249.7	241.4	153.0	167.0	234.8
142.5°	89.3	91.0	34.7	55.4	167.8	221.6	235.7	249.7	206.7	143.0	153.0
145°	86.0	90.1	38.0	27.3	119.9	215.8	222.4	238.1	246.4	196.0	140.6
147.5°	85.2	88.5	43.8	24.8	82.7	177.8	219.9	224.9	238.1	243.1	205.1
150°	83.5	86.0	57.1	26.5	52.9	133.1	205.9	215.8	224.9	235.7	239.8
152.5°	81.9	83.5	71.9	30.6	28.1	89.3	166.2	216.6	214.2	221.6	231.5
155°	80.2	81.0	81.0	36.4	28.1	57.9	113.3	177.8	215.8	210.8	217.5
157.5°	79.4	79.4	86.8	50.4	28.9	26.5	79.4	126.5	175.3	206.7	214.2
160°	78.6	78.6	85.2	69.5	33.9	28.1	31.4	84.3	119.1	162.9	191.8
162.5°	76.9	76.9	79.4	80.2	51.3	29.8	27.3	30.6	76.1	98.4	138.1
165°	76.1	76.1	76.9	85.2	72.8	43.0	28.9	27.3	25.6	42.2	81.9
167.5°	75.2	74.4	75.2	78.6	83.5	69.5	45.5	30.6	26.5	25.6	24.0
170°	74.4	73.6	73.6	74.4	77.7	82.7	72.8	59.5	39.7	29.8	25.6
172.5°	73.6	72.8	72.8	72.8	72.8	74.4	79.4	81.0	73.6	67.0	56.2
175°	72.8	72.8	72.8	72.8	71.9	71.1	71.1	71.9	73.6	74.4	77.7
177.5°	71.9	71.9	71.9	71.9	71.9	71.1	70.3	70.3	69.5	68.6	67.8
180°	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1	7181.1
2.5°	7349.8	7356.4	7358.1	7364.7	7360.6	7381.2	7382.9	7378.8
5°	7454.8	7472.2	7473.8	7487.9	7490.4	7508.6	7517.7	7514.4
7.5°	7593.7	7641.7	7673.9	7711.1	7726.0	7762.4	7775.6	7774.8
10°	7783.9	7850.1	7898.0	7936.9	7956.7	7985.7	8003.0	8008.0
12.5°	7867.4	7907.1	7920.3	7925.3	7930.3	7936.9	7946.0	7950.1
15°	7737.6	7743.4	7726.9	7702.1	7697.1	7693.0	7699.6	7702.1
17.5°	7519.3	7511.9	7492.0	7476.3	7464.7	7458.1	7454.0	7459.0
20°	7278.7	7253.9	7223.3	7214.2	7206.8	7199.3	7196.8	7202.6
22.5°	7004.2	6991.0	6971.1	6976.9	6986.0	7000.9	7010.8	7018.3
25°	6747.0	6767.7	6824.8	6893.4	6925.6	6939.7	6942.2	6950.5
27.5°	6585.0	6632.1	6671.0	6701.6	6697.4	6692.5	6690.8	6689.2
30°	6388.2	6427.1	6474.2	6532.1	6574.2	6610.6	6633.8	6645.3
32.5°	6167.4	6236.9	6322.0	6422.9	6487.4	6541.2	6572.6	6575.1
35°	5941.7	6011.2	6093.8	6155.0	6159.2	6167.4	6155.9	6148.4
37.5°	5697.0	5763.1	5821.8	5862.3	5841.7	5823.5	5794.5	5787.9
40°	5441.5	5497.7	5539.9	5565.5	5537.4	5515.0	5500.2	5494.4
42.5°	5158.7	5203.3	5231.4	5234.7	5195.9	5177.7	5171.1	5162.8
45°	4851.9	4888.3	4916.4	4915.6	4886.6	4873.4	4866.0	4853.6
47.5°	4527.0	4570.8	4602.2	4589.0	4546.0	4519.5	4494.7	4465.8
50°	4199.5	4232.6	4240.9	4230.1	4171.4	4137.5	4120.2	4104.5
52.5°	3866.3	3887.8	3863.8	3855.6	3808.4	3799.3	3795.2	3782.0
55°	3528.1	3531.5	3490.9	3467.0	3407.4	3391.7	3385.1	3365.3
57.5°	3189.1	3175.1	3125.5	3091.6	3025.4	2975.0	2936.9	2904.7
60°	2855.9	2824.5	2781.5	2741.8	2674.0	2621.9	2585.5	2558.3
62.5°	2527.7	2494.6	2451.6	2412.7	2344.1	2291.2	2263.1	2243.2
65°	2232.5	2202.7	2157.2	2120.9	2056.4	2005.9	1975.3	1954.7
67.5°	1947.2	1928.2	1886.9	1833.9	1764.5	1720.7	1692.5	1671.9
70°	1683.5	1655.3	1611.5	1561.9	1505.7	1471.0	1451.1	1432.9
72.5°	1437.9	1404.0	1373.4	1338.7	1298.1	1270.0	1254.3	1249.4
75°	1227.0	1205.5	1180.7	1155.9	1124.5	1100.5	1084.8	1081.5
77.5°	1049.3	1032.7	1012.9	993.0	963.3	941.8	927.7	921.1
80°	883.9	868.2	849.2	830.2	803.7	784.7	772.3	766.5
82.5°	730.9	715.2	700.3	686.3	668.9	649.1	638.3	635.0
85°	593.7	582.1	572.2	562.3	547.4	531.7	521.7	518.4
87.5°	471.3	467.2	459.7	453.1	441.5	428.3	420.0	416.7
90°	355.5	352.2	348.9	344.0	334.9	324.1	317.5	315.0
92.5°	281.1	278.6	276.2	272.0	265.4	256.3	249.7	247.2
95°	224.9	223.2	219.9	216.6	210.8	205.1	199.3	196.0
97.5°	177.8	176.9	174.5	172.8	169.5	162.9	157.9	154.6
100°	142.2	140.6	138.9	136.4	133.1	127.3	124.0	120.7
102.5°	118.2	116.6	114.1	111.6	108.3	104.2	100.0	97.6
105°	100.9	98.4	96.7	94.3	91.0	86.8	82.7	81.0
107.5°	89.3	88.5	84.3	81.9	77.7	75.2	71.9	68.6
110°	91.8	87.6	76.9	71.1	68.6	69.5	66.1	62.8



TEST NUMBER: P236501

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L850-CD2-U outer 2 blades tilted out 20 degrees

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	95.9	86.8	79.4	76.9	75.2	72.8	65.3	62.0
115°	87.6	86.0	83.5	78.6	75.2	70.3	65.3	62.0
117.5°	95.9	80.2	72.8	70.3	70.3	70.3	67.0	63.7
120°	115.8	98.4	82.7	71.9	66.1	62.0	57.1	53.7
122.5°	133.9	114.1	99.2	89.3	82.7	75.2	69.5	65.3
125°	147.2	129.8	114.9	105.0	97.6	89.3	83.5	79.4
127.5°	157.1	140.6	127.3	119.1	111.6	104.2	98.4	94.3
130°	179.4	150.5	138.1	129.8	122.4	116.6	110.8	107.5
132.5°	232.3	197.6	155.4	139.7	130.6	125.7	120.7	114.9
135°	286.9	233.2	214.2	190.2	158.8	142.2	133.1	128.2
137.5°	275.3	280.3	272.9	223.2	207.5	199.3	192.7	189.3
140°	255.5	266.2	270.4	272.0	270.4	264.6	251.4	237.3
142.5°	218.3	239.8	252.2	256.3	257.1	256.3	253.8	250.5
145°	121.5	191.0	217.5	230.7	238.1	239.8	239.8	237.3
147.5°	147.2	123.2	119.9	176.1	199.3	209.2	210.0	210.8
150°	233.2	170.3	140.6	123.2	113.3	105.0	103.4	103.4
152.5°	236.5	237.3	232.3	187.7	154.6	137.3	128.2	123.2
155°	224.1	230.7	235.7	236.5	235.7	233.2	229.0	224.1
157.5°	212.5	215.8	222.4	224.9	225.7	225.7	223.2	221.6
160°	215.0	216.6	210.8	212.5	212.5	213.3	210.8	210.0
162.5°	167.0	186.9	201.7	211.7	216.6	213.3	209.2	205.1
165°	97.6	119.1	144.7	157.9	167.0	172.8	166.2	153.0
167.5°	29.8	52.1	76.1	86.0	91.0	91.0	83.5	80.2
170°	24.8	24.0	23.2	23.2	22.3	21.5	19.0	21.5
172.5°	45.5	38.0	30.6	28.9	28.1	24.8	23.2	20.7
175°	77.7	75.2	74.4	74.4	75.2	75.2	75.2	71.1
177.5°	67.0	67.0	69.5	71.1	73.6	76.1	71.9	69.5
180°	70.3	70.3	70.3	70.3	70.3	70.3	70.3	70.3

(END OF REPORT)