

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: P236499

Luminaire Tested: **SKB4-LD5-18-N-UNV-L835-CD2-U outer 2 blades tilted out 20 degrees**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236499
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-L835-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) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

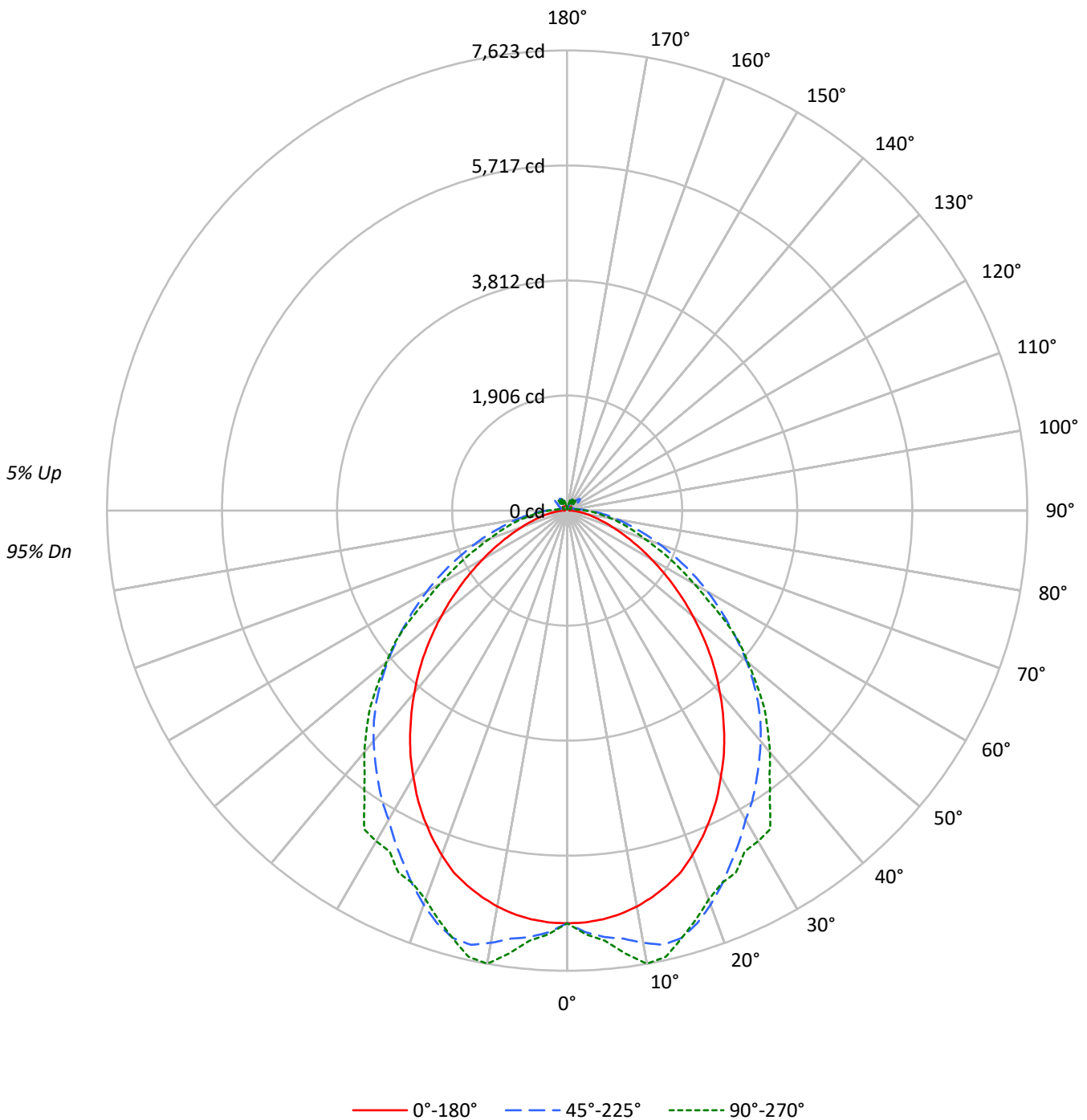
Lumens per Lamp: N/A
Luminaire Lumens: 19461.0 lumens
Efficiency: N/A
Efficacy: 135.7 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.35 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1.88' x L: 4' x H: 0.21')
CIE Type: Direct

Input Watts (W): 143.4
Input Voltage (V): 120
Input Current (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

TEST NUMBER: P236499

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L835-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°	9810	9810	9810
5°	9747	10113	10205
10°	9617	10386	10895
15°	9412	10561	10578
20°	9101	10182	10064
25°	8688	9661	9961
30°	8195	9187	9851
35°	7666	8856	9514
40°	7071	8517	8963
45°	6432	8129	8439
50°	5720	7605	7703
55°	4989	7008	6918
60°	4252	6430	5862
65°	3551	5806	5103
70°	2924	5193	4385
75°	2401	4600	4035
80°	2019	4262	3699
85°	1706	4091	3580



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	678.0	3.5
10°-20°	1996.4	10.3
20°-30°	2919.7	15.0
30°-40°	3379.2	17.4
40°-50°	3270.6	16.8
50°-60°	2678.8	13.8
60°-70°	1857.4	9.5
70°-80°	1128.4	5.8
80°-90°	580.3	3.0
90°-100°	227.7	1.2
100°-110°	132.3	0.7
110°-120°	128.6	0.7
120°-130°	138.0	0.7
130°-140°	140.0	0.7
140°-150°	105.8	0.5
150°-160°	67.8	0.3
160°-170°	26.7	0.1
170°-180°	5.5	0.0
0°-30°	5594.0	28.7
0°-40°	8973.2	46.1
0°-60°	14922.6	76.7
0°-90°	18488.8	95.0
90°-120°	488.6	2.5
90°-150°	872.3	4.5
90°-180°	972.0	5.0
0°-180°	19461.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6836	6836	6836	6836	6836	
5°	6796	6980	7090	7121	7153	644
15°	6423	6866	7327	7343	7331	1807
25°	5620	6287	6429	6529	6616	2582
35°	4535	5123	5463	5830	5852	2831
45°	3334	3833	4467	4679	4620	2567
55°	2142	2692	3262	3312	3203	1921
65°	1162	1765	2133	2036	1861	1165
75°	517	1120	1187	1112	1030	563
85°	165	617	576	540	494	167
90°	47	366	340	330	300	32
95°	36	235	219	208	186	31
105°	49	203	108	91	77	53
115°	70	276	124	77	59	70
125°	88	211	191	105	76	79
135°	91	223	268	192	122	71
145°	82	160	186	213	226	52
155°	76	41	201	225	213	36
165°	72	55	40	144	146	21
175°	69	68	71	71	68	7
180°	67	67	67	67	67	



TEST NUMBER: P236499

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L835-CD2-U outer 2 blades tilted out 20 degrees

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5
2.5°	6829.2	6824.5	6850.5	6882.0	6914.2	6908.7	6934.7	6967.7	6969.3	6990.6	6998.4
5°	6796.2	6802.5	6858.3	6919.7	6974.8	6985.1	7022.8	7065.3	7070.1	7090.5	7097.6
7.5°	6741.9	6763.1	6849.7	6930.0	6993.7	7002.4	7033.1	7085.0	7109.4	7153.5	7192.1
10°	6660.0	6704.1	6811.1	6889.8	6949.6	6977.2	7040.2	7128.3	7185.8	7271.5	7344.0
12.5°	6552.2	6612.0	6725.3	6805.6	6891.4	6952.8	7050.4	7180.2	7267.6	7367.6	7442.3
15°	6423.1	6498.7	6606.5	6705.7	6819.8	6911.9	7037.8	7188.9	7270.0	7327.4	7358.1
17.5°	6275.1	6352.3	6462.5	6583.7	6717.5	6833.2	6971.7	7104.7	7147.2	7165.3	7170.0
20°	6072.1	6174.4	6293.2	6431.8	6582.9	6716.7	6837.1	6942.6	6946.5	6946.5	6945.7
22.5°	5853.3	5969.8	6098.1	6250.7	6421.5	6556.1	6651.3	6727.7	6707.2	6700.9	6684.4
25°	5619.5	5737.6	5875.3	6044.5	6229.5	6345.2	6408.9	6462.5	6442.0	6429.4	6432.5
27.5°	5370.0	5486.5	5634.5	5816.3	5993.4	6086.2	6139.0	6186.2	6163.4	6177.5	6188.6
30°	5093.8	5219.7	5363.7	5560.5	5724.2	5788.0	5840.7	5889.5	5876.9	5913.1	6010.7
32.5°	4825.4	4937.2	5089.1	5280.3	5422.8	5472.3	5539.2	5580.2	5588.8	5704.5	5789.5
35°	4535.0	4645.2	4797.8	4979.7	5096.9	5149.7	5229.9	5259.8	5363.7	5462.9	5566.8
37.5°	4238.3	4343.7	4494.0	4664.8	4767.2	4825.4	4903.3	5006.4	5107.2	5225.2	5344.1
40°	3939.2	4035.2	4180.0	4334.3	4433.4	4508.2	4604.2	4745.1	4851.4	4986.0	5101.6
42.5°	3639.3	3729.8	3857.3	3994.3	4103.7	4175.3	4338.2	4472.0	4600.3	4739.6	4847.4
45°	3333.9	3405.6	3535.4	3662.9	3786.5	3878.6	4060.4	4201.3	4345.3	4467.3	4564.1
47.5°	3024.6	3091.5	3215.9	3341.8	3473.2	3603.1	3776.3	3934.5	4068.3	4177.7	4269.0
50°	2720.8	2783.0	2901.1	3038.0	3164.7	3321.3	3500.0	3659.0	3777.8	3874.6	3952.6
52.5°	2426.5	2482.4	2597.3	2740.5	2880.6	3040.4	3221.4	3375.7	3485.1	3566.9	3641.7
55°	2142.3	2201.4	2310.8	2451.7	2612.2	2772.0	2952.2	3092.3	3182.0	3262.3	3332.4
57.5°	1870.8	1928.3	2041.6	2183.3	2354.1	2516.2	2689.3	2816.1	2894.8	2971.9	3030.1
60°	1615.0	1674.1	1792.1	1940.1	2114.0	2275.4	2437.5	2547.7	2619.3	2687.8	2728.7
62.5°	1378.1	1437.2	1563.9	1721.3	1892.1	2050.3	2194.3	2287.2	2354.1	2409.9	2431.2
65°	1162.5	1223.9	1354.5	1519.8	1689.8	1840.9	1969.2	2044.0	2095.9	2132.9	2139.2
67.5°	968.1	1038.9	1168.0	1345.9	1509.6	1648.9	1759.1	1814.9	1853.5	1869.2	1873.2
70°	796.5	871.3	1009.0	1188.4	1350.6	1476.5	1557.6	1596.1	1621.3	1630.0	1637.1
72.5°	652.5	726.4	877.6	1051.5	1210.5	1312.0	1373.4	1397.8	1412.0	1404.9	1393.9
75°	517.1	602.9	763.4	935.8	1081.4	1159.3	1200.2	1217.6	1206.5	1186.9	1184.5
77.5°	411.6	495.8	665.1	835.1	958.6	1016.9	1043.6	1038.1	1023.2	1008.2	1009.8
80°	316.4	403.8	580.1	738.3	838.2	886.2	889.4	881.5	867.3	853.2	853.2
82.5°	235.3	329.0	506.9	639.1	724.9	752.4	751.6	741.4	723.3	706.8	702.8
85°	165.3	263.7	424.2	539.9	608.4	626.5	621.0	608.4	594.2	576.1	572.2
87.5°	107.0	206.2	345.5	435.2	487.2	499.0	491.9	478.5	468.3	453.3	451.0
90°	47.2	144.0	256.6	321.9	362.0	369.9	364.4	355.7	351.0	340.0	340.0
92.5°	30.7	100.0	188.9	248.7	287.3	299.1	293.6	285.7	280.2	271.5	269.2
95°	36.2	79.5	140.9	190.5	229.0	240.8	238.5	233.0	227.5	218.8	214.9
97.5°	39.4	76.3	135.4	169.2	191.3	203.1	199.1	192.8	185.7	176.3	171.6
100°	43.3	78.7	149.5	175.5	186.5	181.8	170.8	163.7	155.0	144.0	139.3
102.5°	48.0	77.9	159.8	193.6	196.0	183.4	162.9	144.0	133.8	122.8	116.5
105°	48.8	74.8	154.3	222.7	214.1	192.0	167.6	145.6	125.9	107.8	101.5
107.5°	50.4	71.6	145.6	234.5	243.2	210.1	173.2	149.5	128.3	107.0	95.2
110°	62.2	71.6	142.5	221.9	265.2	233.0	193.6	153.5	127.5	112.5	97.6



TEST NUMBER: P236499

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L835-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°	66.1	61.4	139.3	197.5	281.8	263.7	216.4	176.3	135.4	107.0	99.2
115°	70.0	55.1	136.2	175.5	266.8	284.9	240.8	198.3	157.4	124.4	95.2
117.5°	74.8	53.5	136.9	185.0	240.0	307.7	262.1	219.6	179.4	144.0	115.7
120°	78.7	51.9	137.7	193.6	199.1	289.6	297.5	237.7	196.0	163.7	134.6
122.5°	84.2	53.5	129.1	190.5	188.1	259.7	308.5	274.7	210.9	177.9	150.3
125°	88.1	56.7	107.8	188.1	215.7	206.2	289.6	310.9	253.4	191.3	161.3
127.5°	92.1	59.8	85.0	185.7	228.2	177.1	254.2	297.5	288.8	238.5	176.3
130°	94.4	63.0	66.9	186.5	222.7	211.7	190.5	271.5	294.4	274.7	229.0
132.5°	93.7	66.9	48.0	176.3	215.7	241.6	165.3	226.7	275.5	284.9	270.7
135°	91.3	70.8	33.8	145.6	209.4	236.1	204.6	147.2	240.0	267.6	274.7
137.5°	89.7	78.7	32.3	110.2	209.4	225.9	243.2	166.9	165.3	233.8	255.8
140°	87.4	84.2	31.5	78.7	196.0	216.4	237.7	229.8	145.6	159.0	223.5
142.5°	85.0	86.6	33.1	52.7	159.8	210.9	224.3	237.7	196.8	136.2	145.6
145°	81.9	85.8	36.2	26.0	114.1	205.4	211.7	226.7	234.5	186.5	133.8
147.5°	81.1	84.2	41.7	23.6	78.7	169.2	209.4	214.1	226.7	231.4	195.2
150°	79.5	81.9	54.3	25.2	50.4	126.7	196.0	205.4	214.1	224.3	228.2
152.5°	77.9	79.5	68.5	29.1	26.8	85.0	158.2	206.2	203.8	210.9	220.4
155°	76.3	77.1	77.1	34.6	26.8	55.1	107.8	169.2	205.4	200.7	207.0
157.5°	75.6	75.6	82.6	48.0	27.5	25.2	75.6	120.4	166.9	196.8	203.8
160°	74.8	74.8	81.1	66.1	32.3	26.8	29.9	80.3	113.3	155.0	182.6
162.5°	73.2	73.2	75.6	76.3	48.8	28.3	26.0	29.1	72.4	93.7	131.4
165°	72.4	72.4	73.2	81.1	69.3	40.9	27.5	26.0	24.4	40.1	77.9
167.5°	71.6	70.8	71.6	74.8	79.5	66.1	43.3	29.1	25.2	24.4	22.8
170°	70.8	70.0	70.0	70.8	74.0	78.7	69.3	56.7	37.8	28.3	24.4
172.5°	70.0	69.3	69.3	69.3	69.3	70.8	75.6	77.1	70.0	63.8	53.5
175°	69.3	69.3	69.3	69.3	68.5	67.7	67.7	68.5	70.0	70.8	74.0
177.5°	68.5	68.5	68.5	68.5	68.5	67.7	66.9	66.9	66.1	65.3	64.5
180°	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9



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CATALOG NUMBER: SKB4-LD5-18-N-UNV-L835-CD2-U outer 2 blades tilted out 20 degrees

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5	6835.5
2.5°	6996.1	7002.4	7003.9	7010.2	7006.3	7026.0	7027.6	7023.6
5°	7096.0	7112.6	7114.1	7127.5	7129.9	7147.2	7155.8	7152.7
7.5°	7228.3	7273.9	7304.6	7340.0	7354.2	7388.8	7401.4	7400.6
10°	7409.3	7472.2	7517.9	7554.9	7573.8	7601.3	7617.8	7622.6
12.5°	7488.8	7526.5	7539.1	7543.9	7548.6	7554.9	7563.5	7567.5
15°	7365.2	7370.7	7355.0	7331.4	7326.6	7322.7	7329.0	7331.4
17.5°	7157.4	7150.3	7131.4	7116.5	7105.5	7099.2	7095.2	7100.0
20°	6928.4	6904.8	6875.7	6867.0	6859.9	6852.8	6850.5	6856.0
22.5°	6667.1	6654.5	6635.6	6641.1	6649.8	6663.9	6673.4	6680.5
25°	6422.3	6442.0	6496.3	6561.6	6592.3	6605.7	6608.1	6615.9
27.5°	6268.1	6312.9	6349.9	6379.0	6375.1	6370.4	6368.8	6367.2
30°	6080.7	6117.7	6162.6	6217.7	6257.8	6292.5	6314.5	6325.5
32.5°	5870.6	5936.7	6017.8	6113.8	6175.2	6226.3	6256.2	6258.6
35°	5655.7	5721.8	5800.5	5858.8	5862.7	5870.6	5859.6	5852.5
37.5°	5422.8	5485.7	5541.6	5580.2	5560.5	5543.2	5515.6	5509.3
40°	5179.6	5233.1	5273.2	5297.6	5270.9	5249.6	5235.4	5229.9
42.5°	4910.4	4952.9	4979.7	4982.8	4945.8	4928.5	4922.2	4914.3
45°	4618.4	4653.0	4679.8	4679.0	4651.5	4638.9	4631.8	4620.0
47.5°	4309.1	4350.8	4380.7	4368.1	4327.2	4302.0	4278.4	4250.8
50°	3997.4	4028.9	4036.8	4026.5	3970.7	3938.4	3921.9	3906.9
52.5°	3680.2	3700.7	3677.9	3670.0	3625.1	3616.5	3612.6	3600.0
55°	3358.3	3361.5	3322.9	3300.1	3243.4	3228.5	3222.2	3203.3
57.5°	3035.6	3022.3	2975.0	2942.8	2879.8	2831.8	2795.6	2764.9
60°	2718.5	2688.6	2647.6	2609.9	2545.3	2495.7	2461.1	2435.1
62.5°	2406.0	2374.5	2333.6	2296.6	2231.3	2180.9	2154.2	2135.3
65°	2125.0	2096.7	2053.4	2018.8	1957.4	1909.4	1880.3	1860.6
67.5°	1853.5	1835.4	1796.0	1745.7	1679.6	1637.8	1611.1	1591.4
70°	1602.4	1575.7	1534.0	1486.7	1433.2	1400.2	1381.3	1364.0
72.5°	1368.7	1336.4	1307.3	1274.2	1235.7	1208.9	1194.0	1189.2
75°	1168.0	1147.5	1123.9	1100.3	1070.4	1047.6	1032.6	1029.5
77.5°	998.8	983.0	964.1	945.2	916.9	896.4	883.1	876.8
80°	841.4	826.4	808.3	790.2	765.0	746.9	735.1	729.6
82.5°	695.8	680.8	666.6	653.3	636.7	617.8	607.6	604.5
85°	565.1	554.1	544.6	535.2	521.0	506.1	496.6	493.5
87.5°	448.6	444.7	437.6	431.3	420.3	407.7	399.8	396.7
90°	338.4	335.3	332.1	327.4	318.8	308.5	302.2	299.9
92.5°	267.6	265.2	262.9	258.9	252.6	244.0	237.7	235.3
95°	214.1	212.5	209.4	206.2	200.7	195.2	189.7	186.5
97.5°	169.2	168.4	166.1	164.5	161.3	155.0	150.3	147.2
100°	135.4	133.8	132.2	129.9	126.7	121.2	118.1	114.9
102.5°	112.5	111.0	108.6	106.3	103.1	99.2	95.2	92.9
105°	96.0	93.7	92.1	89.7	86.6	82.6	78.7	77.1
107.5°	85.0	84.2	80.3	77.9	74.0	71.6	68.5	65.3
110°	87.4	83.4	73.2	67.7	65.3	66.1	63.0	59.8



TEST NUMBER: P236499

CATALOG NUMBER: SKB4-LD5-18-N-UNV-L835-CD2-U outer 2 blades tilted out 20 degrees

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	91.3	82.6	75.6	73.2	71.6	69.3	62.2	59.0
115°	83.4	81.9	79.5	74.8	71.6	66.9	62.2	59.0
117.5°	91.3	76.3	69.3	66.9	66.9	66.9	63.8	60.6
120°	110.2	93.7	78.7	68.5	63.0	59.0	54.3	51.2
122.5°	127.5	108.6	94.4	85.0	78.7	71.6	66.1	62.2
125°	140.1	123.6	109.4	100.0	92.9	85.0	79.5	75.6
127.5°	149.5	133.8	121.2	113.3	106.3	99.2	93.7	89.7
130°	170.8	143.2	131.4	123.6	116.5	111.0	105.5	102.3
132.5°	221.2	188.1	148.0	133.0	124.4	119.6	114.9	109.4
135°	273.1	221.9	203.8	181.0	151.1	135.4	126.7	122.0
137.5°	262.1	266.8	259.7	212.5	197.5	189.7	183.4	180.2
140°	243.2	253.4	257.4	258.9	257.4	251.9	239.3	225.9
142.5°	207.8	228.2	240.0	244.0	244.8	244.0	241.6	238.5
145°	115.7	181.8	207.0	219.6	226.7	228.2	228.2	225.9
147.5°	140.1	117.3	114.1	167.6	189.7	199.1	199.9	200.7
150°	221.9	162.1	133.8	117.3	107.8	100.0	98.4	98.4
152.5°	225.1	225.9	221.2	178.7	147.2	130.7	122.0	117.3
155°	213.3	219.6	224.3	225.1	224.3	221.9	218.0	213.3
157.5°	202.3	205.4	211.7	214.1	214.9	214.9	212.5	210.9
160°	204.6	206.2	200.7	202.3	202.3	203.1	200.7	199.9
162.5°	159.0	177.9	192.0	201.5	206.2	203.1	199.1	195.2
165°	92.9	113.3	137.7	150.3	159.0	164.5	158.2	145.6
167.5°	28.3	49.6	72.4	81.9	86.6	86.6	79.5	76.3
170°	23.6	22.8	22.0	22.0	21.3	20.5	18.1	20.5
172.5°	43.3	36.2	29.1	27.5	26.8	23.6	22.0	19.7
175°	74.0	71.6	70.8	70.8	71.6	71.6	71.6	67.7
177.5°	63.8	63.8	66.1	67.7	70.0	72.4	68.5	66.1
180°	66.9	66.9	66.9	66.9	66.9	66.9	66.9	66.9

(END OF REPORT)