

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: LUMARK

Report Number: P196182

Luminaire Tested: **NAV-AF-06-D-UNV-SL4-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196182
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-SL4-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23161.7 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

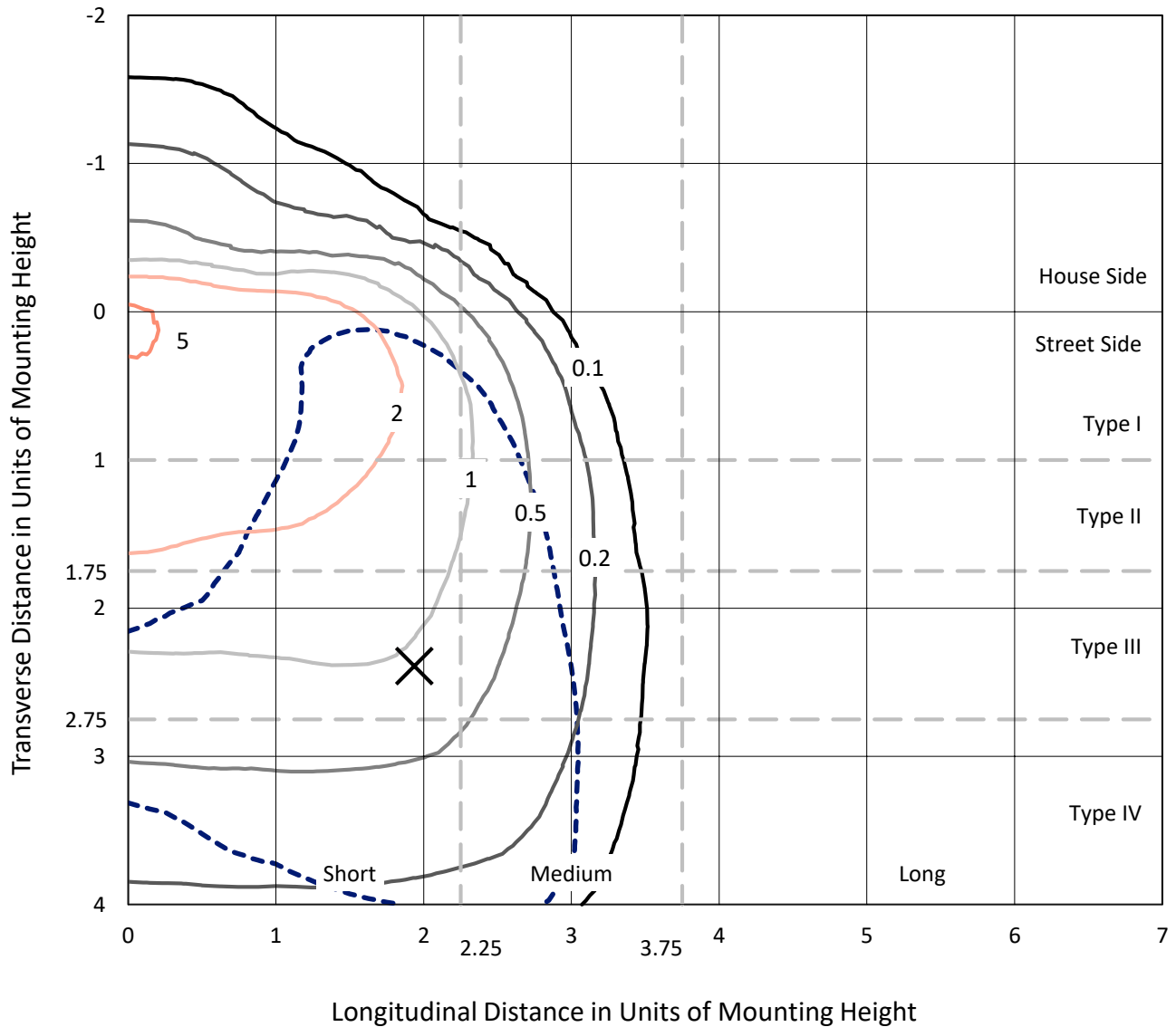
Input Watts (W): 193
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196182
 CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

Iso-Footcandle Lines of Horizontal Illumination

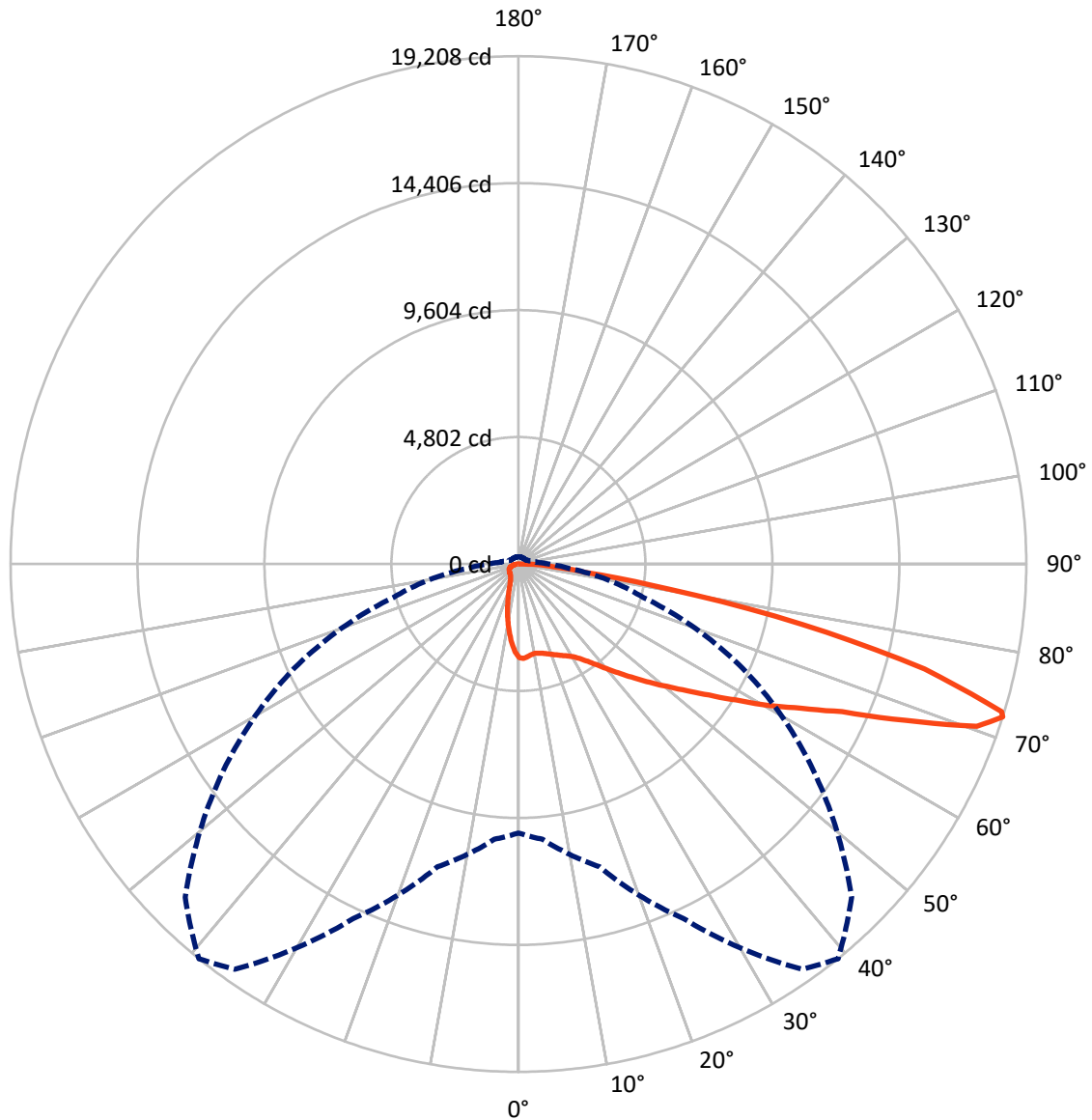
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196182
CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P196182

CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2655.8	0.0	2655.8
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	20505.9	0.0	20505.9
	% Fixture	88.5	0.0	88.5
Total	Lumens	23161.7	0.0	23161.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	304.0	1.3
10°-20°	763.8	3.3
20°-30°	1190.3	5.1
30°-40°	1832.7	7.9
40°-50°	2987.8	12.9
50°-60°	4642.7	20.0
60°-70°	6214.0	26.8
70°-80°	4468.8	19.3
80°-90°	757.6	3.3
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°-90°	23161.7	100.0
0°-180°	23161.7	100.0



REPORT NUMBER: P196182

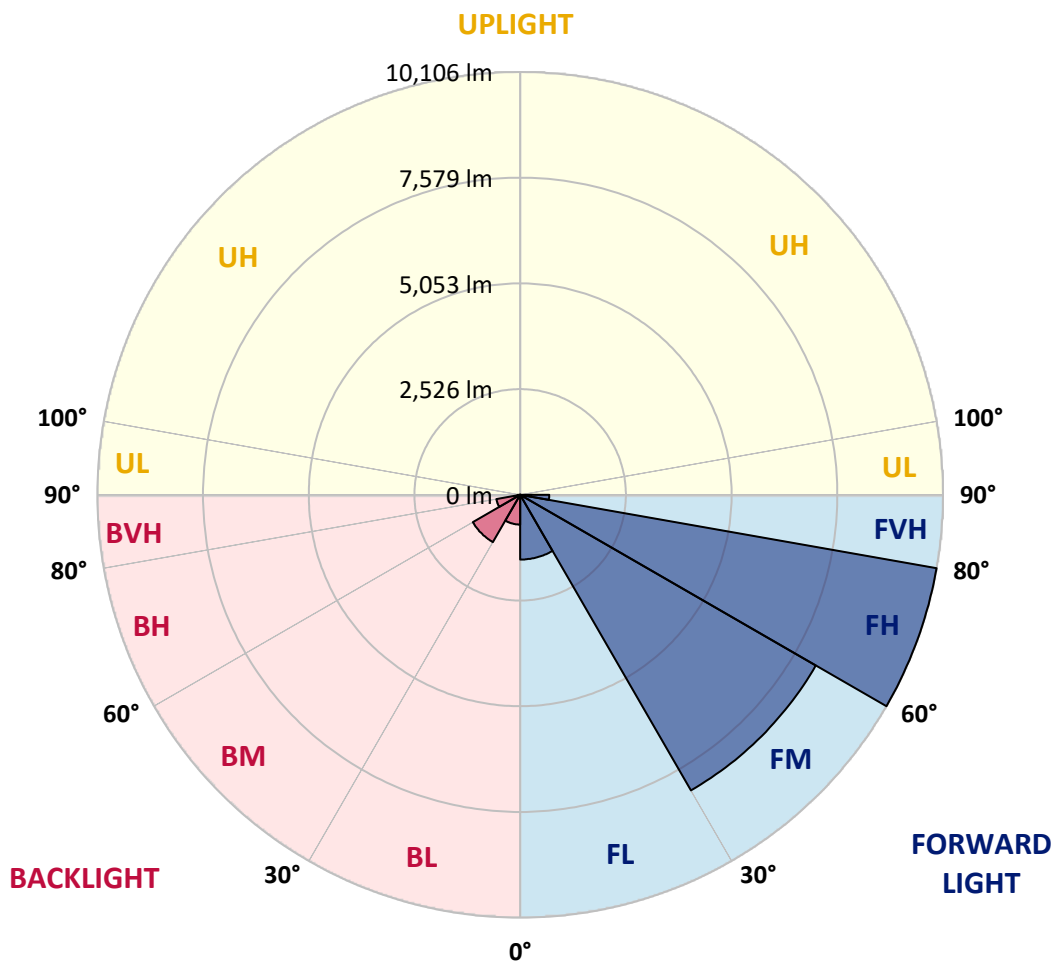
CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1547.2	6.7			
FM	(30°-60°)	8158.0	35.2			
FH	(60°-80°)	10105.8	43.6			G4/12000
FVH	(80°-90°)	694.9	3.0			G4/750
BL	(0°-30°)	711.0	3.1	B2/1000		
BM	(30°-60°)	1305.2	5.6	B2/2500		
BH	(60°-80°)	577.0	2.5	B2/1000		G2/1000
BVH	(80°-90°)	62.6	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





REPORT NUMBER: P196182

CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2
2.5°	3613.4	3614.9	3610.3	3596.3	3583.8	3577.7	3566.7	3548.1	3523.2	3506.1	3492.1
5°	3579.2	3583.8	3580.7	3557.4	3535.6	3523.2	3506.1	3479.7	3447.0	3433.0	3400.4
7.5°	3552.7	3555.9	3546.6	3520.1	3478.1	3462.6	3431.5	3397.2	3367.8	3347.5	3308.6
10°	3534.1	3537.2	3529.4	3503.0	3456.3	3437.7	3400.4	3363.1	3324.2	3299.3	3255.7
12.5°	3507.7	3513.8	3513.8	3501.5	3470.4	3457.9	3420.5	3380.1	3344.4	3317.9	3263.5
15°	3503.0	3510.8	3524.8	3523.2	3513.8	3504.5	3475.0	3434.6	3403.5	3372.4	3305.6
17.5°	3541.9	3558.9	3587.0	3596.3	3590.0	3569.9	3535.6	3498.3	3464.1	3434.6	3352.2
20°	3639.9	3649.2	3691.1	3709.8	3678.7	3649.2	3604.1	3555.9	3524.8	3501.5	3395.7
22.5°	3787.5	3800.0	3834.1	3835.8	3770.4	3734.7	3677.1	3618.1	3588.5	3579.2	3454.8
25°	4023.9	4020.7	4030.1	3991.2	3873.0	3831.1	3761.1	3692.6	3672.5	3691.1	3541.9
27.5°	4306.8	4299.1	4269.5	4168.4	3989.6	3935.2	3851.3	3790.6	3790.6	3834.1	3660.0
30°	4633.4	4625.6	4529.2	4359.7	4128.0	4065.8	3977.2	3913.5	3946.1	4030.1	3820.2
32.5°	4978.5	4950.6	4815.2	4588.2	4325.4	4257.1	4171.6	4106.2	4168.4	4311.5	4050.3
35°	5303.5	5287.9	5121.5	4852.6	4580.5	4523.0	4463.9	4383.0	4482.6	4704.9	4375.3
37.5°	5639.3	5626.8	5423.2	5137.1	4891.4	4852.6	4802.9	4746.8	4907.0	5199.2	4815.2
40°	6014.0	5989.2	5732.6	5446.5	5253.7	5235.1	5208.7	5193.1	5451.2	5886.6	5371.9
42.5°	6438.5	6390.3	6059.1	5787.0	5648.6	5664.2	5650.2	5712.4	6107.3	6679.5	6034.2
45°	6923.5	6827.2	6384.0	6149.3	6085.5	6147.7	6177.3	6335.9	6883.1	7595.3	6774.3
47.5°	7377.6	7253.2	6740.1	6542.7	6578.4	6685.7	6769.7	7049.6	7733.6	8500.2	7529.9
50°	7795.8	7655.9	7121.1	6950.0	7124.1	7276.6	7450.7	7845.6	8638.5	9431.5	8223.4
52.5°	8105.2	8004.2	7502.0	7394.7	7750.7	7952.8	8231.2	8730.3	9552.7	10319.3	8842.2
55°	8344.7	8290.3	7873.6	7904.6	8459.7	8748.9	9086.4	9660.0	10519.8	11115.4	9339.7
57.5°	8621.4	8581.0	8298.1	8520.4	9339.7	9703.6	10101.6	10739.1	11440.3	11816.6	9730.0
60°	8913.8	8913.8	8770.7	9262.0	10440.5	10857.3	11253.8	11749.7	12357.7	12447.9	9888.7
62.5°	9134.5	9192.0	9243.4	10051.8	11485.4	12003.2	12438.5	12914.2	13307.7	12758.8	9515.5
65°	9454.8	9577.7	9866.9	10964.5	12779.0	13456.9	14044.6	14444.2	14077.2	12511.6	8298.1
67.5°	10005.2	10187.2	10802.9	12323.5	14759.9	15775.1	16345.7	15655.4	13926.5	10955.2	6356.1
70°	10501.2	10757.8	11810.4	14047.8	17334.6	18388.8	18126.0	15374.0	12129.1	8030.6	3910.3
72°	10171.6	10451.5	11857.0	14798.7	18710.6	19208.2	17822.9	13624.8	9372.4	4900.8	1928.0
72.5°	9955.5	10246.2	11706.2	14780.1	18747.9	19104.0	17401.5	12929.8	8508.0	4288.2	1559.5
75°	8316.7	8565.5	10065.8	13099.3	16521.5	15868.4	13579.8	8368.0	3910.3	1385.4	802.3
77.5°	5430.9	5620.6	6940.7	9075.4	11572.4	10944.3	8265.3	3918.1	1466.2	841.2	603.2
80°	2728.7	2864.0	3714.4	4771.8	6245.7	5746.6	3815.5	1895.3	981.1	607.9	474.2
82.5°	1898.4	2022.8	2557.7	2436.4	2610.6	2526.6	1794.3	1581.3	733.9	384.0	248.8
85°	1592.1	1721.2	2116.1	1736.8	1421.1	1295.2	1285.8	1494.2	485.1	189.7	209.9
87.5°	1388.5	1584.3	1746.1	1268.8	974.9	859.8	946.8	1369.8	154.0	104.1	63.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196182

CATALOG NUMBER: NAV-AF-06-D-UNV-SL4-600

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2	3537.2
2.5°	3468.8	3464.1	3440.8	3405.0	3378.6	3361.5	3328.9	3327.2	3330.4	3302.4	3313.3
5°	3370.8	3352.2	3291.5	3209.1	3142.3	3078.6	3008.6	2985.3	2965.0	2923.1	2927.7
7.5°	3268.2	3235.6	3129.8	2994.6	2865.5	2747.3	2630.7	2573.2	2529.7	2475.2	2475.2
10°	3207.6	3156.3	2994.6	2797.2	2591.9	2419.3	2245.2	2140.9	2064.8	1994.9	1990.2
12.5°	3204.5	3126.8	2901.3	2629.2	2347.8	2105.2	1867.3	1707.2	1593.7	1511.3	1503.5
15°	3229.4	3120.5	2823.5	2472.2	2117.6	1802.0	1508.1	1304.5	1159.9	1068.2	1058.9
17.5°	3251.1	3112.7	2739.6	2307.4	1893.8	1509.8	1183.2	971.8	834.9	760.3	752.5
20°	3271.3	3095.7	2632.3	2133.2	1646.5	1236.0	925.2	754.1	663.9	622.0	617.2
22.5°	3300.9	3080.1	2520.3	1937.3	1404.0	1006.0	763.4	640.6	592.4	572.1	569.1
25°	3349.0	3081.6	2411.5	1736.8	1181.6	838.0	660.8	584.6	558.2	544.2	544.2
27.5°	3419.0	3100.3	2304.2	1533.1	993.5	723.0	600.2	555.1	538.0	527.1	524.0
30°	3521.6	3134.5	2190.8	1340.3	844.2	643.7	564.4	536.4	522.4	513.1	511.6
32.5°	3671.0	3195.2	2071.0	1164.5	730.8	587.7	538.0	520.9	509.9	502.2	500.6
35°	3893.2	3302.4	1954.4	1015.3	649.9	547.3	516.2	502.2	496.0	492.9	491.3
37.5°	4219.8	3475.0	1844.0	898.7	597.1	520.9	494.4	486.6	483.5	483.5	483.5
40°	4630.3	3702.1	1744.5	816.3	567.5	500.6	478.8	472.7	472.7	474.2	474.2
42.5°	5129.3	3986.5	1659.0	760.3	550.4	486.6	468.0	464.9	463.3	463.3	464.9
45°	5709.3	4322.4	1606.1	716.8	538.0	478.8	460.2	458.7	452.5	449.4	449.4
47.5°	6292.4	4681.5	1603.0	691.9	522.4	469.5	452.5	452.5	440.0	433.8	435.4
50°	6836.5	5003.4	1637.2	685.7	513.1	455.5	444.7	446.2	429.1	421.4	419.8
52.5°	7275.0	5249.1	1679.2	693.5	513.1	443.1	430.7	438.4	419.8	410.5	408.9
55°	7613.9	5420.1	1694.7	710.5	519.4	432.2	418.3	430.7	416.6	404.3	404.3
57.5°	7856.5	5474.5	1627.9	718.3	528.7	430.7	405.8	429.1	421.4	405.8	405.8
60°	7767.9	5158.8	1379.1	688.8	527.1	427.6	396.5	432.2	436.9	419.8	419.8
62.5°	7076.0	4316.1	1107.0	622.0	500.6	416.6	385.6	429.1	447.7	441.6	438.4
65°	5760.5	3165.6	858.3	542.7	455.5	393.3	362.2	401.1	422.9	429.1	430.7
67.5°	4059.6	2004.2	667.0	461.8	399.6	359.2	335.8	354.5	362.2	365.4	371.6
70°	2220.3	1085.2	530.2	388.7	342.1	325.0	307.8	309.4	306.3	303.2	306.3
72°	1114.8	709.0	447.7	337.4	303.2	292.3	284.5	279.9	279.9	275.2	276.7
72.5°	959.3	659.3	432.2	325.0	293.9	284.5	278.3	273.6	272.1	268.9	270.6
75°	639.0	522.4	360.7	272.1	250.3	244.1	247.2	242.5	244.1	241.0	242.5
77.5°	516.2	449.4	306.3	230.1	214.6	205.2	211.4	213.0	216.1	213.0	211.4
80°	432.2	382.5	256.6	189.7	178.8	171.0	174.1	185.1	186.6	177.3	175.7
82.5°	279.9	307.8	202.1	147.7	136.9	133.7	141.5	152.4	155.5	143.0	139.9
85°	234.8	247.2	146.2	101.1	90.2	87.1	102.6	113.5	121.3	108.8	105.8
87.5°	65.3	121.3	71.5	48.2	40.4	40.4	49.7	59.1	70.0	71.5	71.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)