

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: P196391

Luminaire Tested: **NAV-AF-05-D-UNV-T4W-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196391
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-T4W-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 33345.1 lumens
Efficiency: N/A
Efficacy: 104.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G5

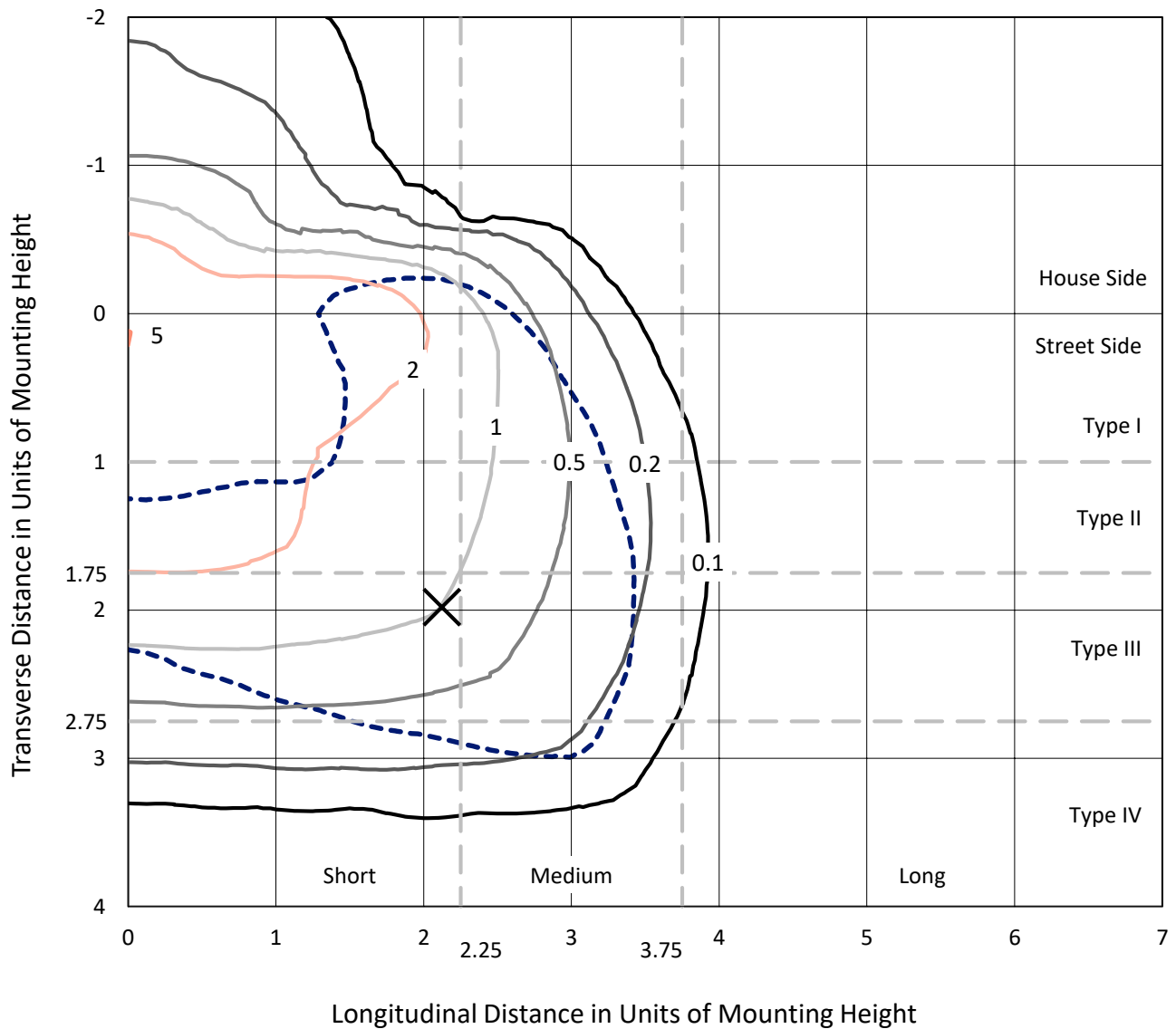
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

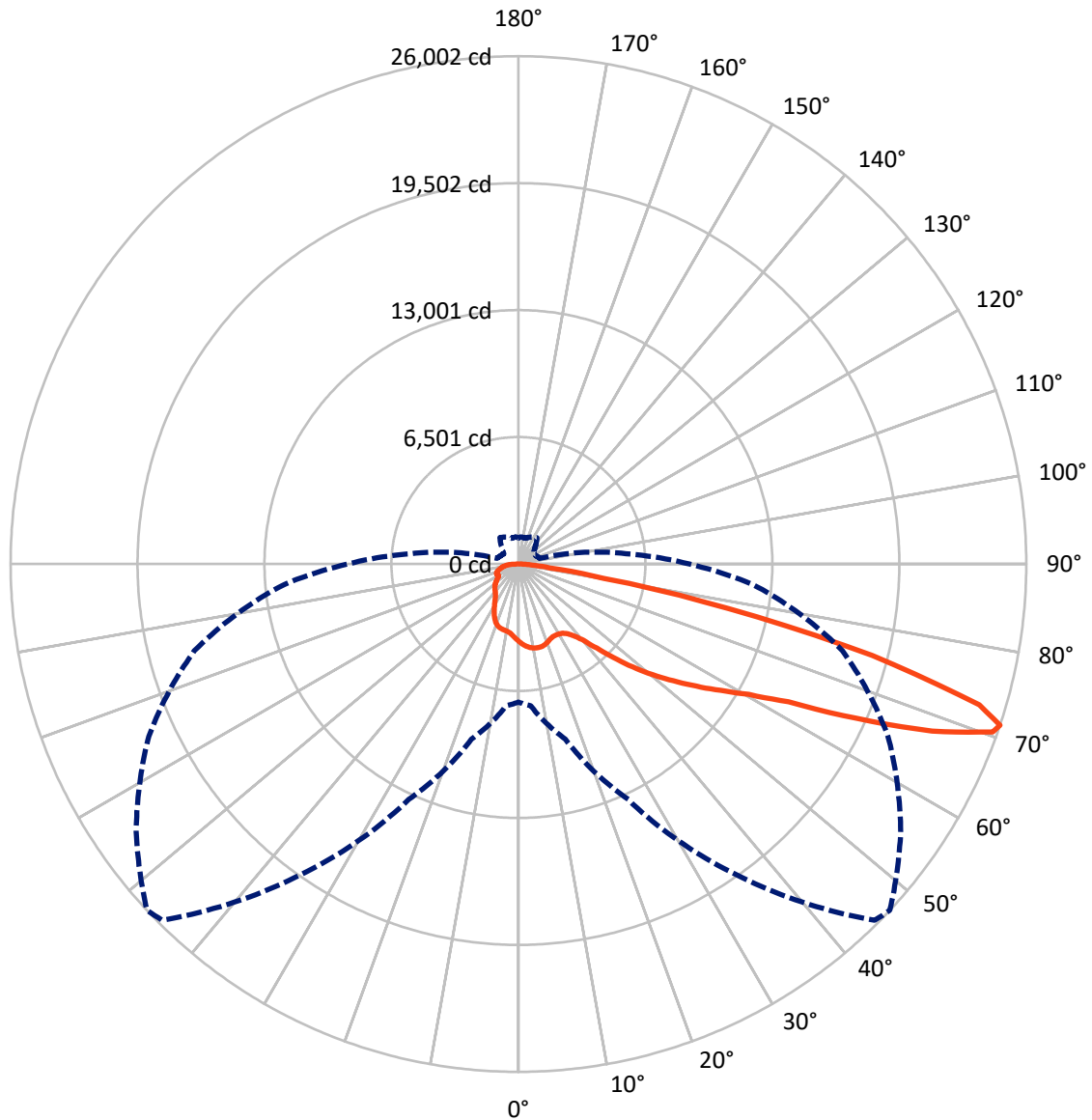
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 5.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7146.3	0.0	7146.3
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	26198.8	0.0	26198.8
	% Fixture	78.6	0.0	78.6
Total	Lumens	33345.1	0.0	33345.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.6	1.1
10°-20°	1107.6	3.3
20°-30°	1645.9	4.9
30°-40°	2363.3	7.1
40°-50°	4190.2	12.6
50°-60°	7169.9	21.5
60°-70°	10178.9	30.5
70°-80°	5574.9	16.7
80°-90°	735.9	2.2
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°	33345.1	100.0
0°-180°	33345.1	100.0



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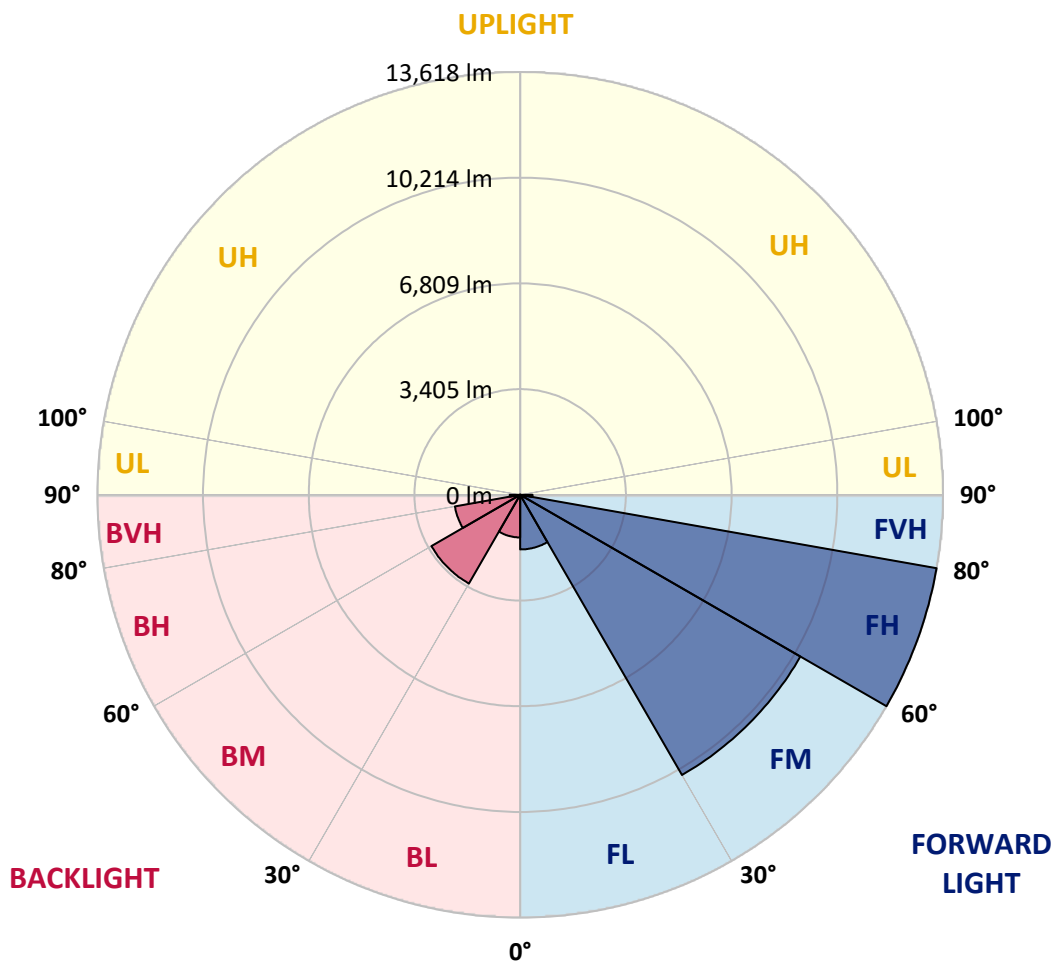
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1759.8	5.3			
FM	(30°-60°)	10421.4	31.3			
FH	(60°-80°)	13618.5	40.8			G5
FVH	(80°-90°)	399.2	1.2			G3/500
BL	(0°-30°)	1372.3	4.1	B3/2500		
BM	(30°-60°)	3302.0	9.9	B3/5000		
BH	(60°-80°)	2135.2	6.4	B3/2500		G3/2500
BVH	(80°-90°)	336.7	1.0			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3
2.5°	4207.3	4198.7	4203.0	4187.9	4151.1	4112.3	4112.3	4071.1	4028.0	3984.7	3937.2
5°	4468.8	4455.9	4445.0	4397.5	4326.2	4246.2	4233.3	4151.1	4062.5	3974.0	3887.5
7.5°	4687.1	4674.1	4641.6	4555.2	4451.5	4332.6	4317.6	4209.4	4092.8	3969.7	3848.6
10°	4842.6	4834.0	4771.3	4661.1	4540.1	4399.6	4373.7	4263.5	4125.2	3971.8	3818.4
12.5°	4929.1	4916.1	4840.5	4710.8	4568.2	4425.6	4399.6	4293.7	4136.0	3967.4	3788.1
15°	4894.5	4888.0	4816.7	4684.9	4542.3	4419.0	4397.5	4289.4	4129.6	3952.4	3760.0
17.5°	4747.5	4762.7	4706.5	4576.9	4460.2	4373.7	4349.9	4248.4	4097.1	3915.5	3716.8
20°	4544.5	4561.7	4533.6	4401.8	4334.9	4278.6	4265.7	4183.6	4043.1	3861.5	3664.9
22.5°	4328.3	4343.4	4345.6	4222.4	4200.8	4179.3	4168.4	4110.1	3995.5	3829.1	3630.4
25°	4179.3	4196.6	4200.8	4092.8	4105.7	4112.3	4110.1	4069.0	3987.0	3829.1	3634.6
27.5°	4140.3	4149.0	4144.7	4045.3	4069.0	4105.7	4108.0	4099.3	4021.5	3872.4	3695.2
30°	4274.3	4278.6	4224.6	4075.5	4099.3	4146.8	4149.0	4144.7	4095.0	3984.7	3831.4
32.5°	4853.4	4849.1	4663.2	4278.6	4196.6	4213.8	4220.3	4259.2	4263.5	4170.6	4028.0
35°	5735.1	5732.9	5516.9	4859.9	4473.2	4382.3	4391.0	4451.5	4505.5	4442.9	4360.7
37.5°	6705.3	6711.8	6580.0	5689.8	5069.5	4691.4	4682.8	4728.1	4825.4	4846.9	4857.8
40°	7781.5	7813.9	7807.4	6642.6	5905.8	5218.6	5132.1	5080.3	5268.3	5387.2	5540.6
42.5°	9011.1	9002.4	9006.8	7688.6	6860.9	6048.4	5888.5	5646.5	5864.8	6070.0	6407.2
45°	10067.8	10102.4	10128.2	8801.5	7930.6	6997.1	6835.1	6394.2	6590.8	6897.7	7412.0
47.5°	11130.9	11070.4	11117.9	10039.6	9121.2	8079.7	7870.1	7275.8	7459.5	7891.7	8673.9
50°	12369.1	12341.1	12124.9	11656.0	10560.4	9177.4	8903.0	8196.4	8464.3	9041.4	10232.0
52.5°	13479.8	13328.5	13160.1	12926.6	11975.8	10288.1	9940.2	9153.7	9646.3	10361.7	12166.0
55°	13886.0	13784.6	13987.6	14290.2	13473.4	11420.5	11031.5	10270.8	10979.6	11872.2	14441.4
57.5°	14318.2	14352.8	14811.0	15422.5	14890.9	12628.4	12207.1	11593.3	12442.6	13562.0	16984.9
60°	14534.4	14672.7	15586.7	16734.1	16239.3	13953.0	13549.0	13112.5	14065.5	15429.0	19521.8
62.5°	14571.1	14757.0	16051.3	17194.5	18095.6	15982.2	15515.4	15042.2	16092.3	17492.7	21358.6
65°	13896.9	14182.2	16010.3	17760.7	19787.6	19372.6	19076.6	18251.2	18806.5	19310.0	21671.9
67.5°	11915.3	12226.5	14426.4	17527.2	21144.6	22890.7	22834.5	21615.7	20902.6	20012.3	19348.9
70°	8745.2	8995.9	11109.3	14983.9	20552.5	25652.3	25751.8	23796.1	21488.2	18521.2	14387.4
71°	7072.7	7288.8	9281.1	13302.7	19398.6	25794.9	26002.4	23893.4	20878.8	17175.0	12044.9
72.5°	4401.8	4522.8	6163.0	10039.6	16704.0	24325.5	24675.6	22648.6	18960.0	14517.1	8514.0
75°	1661.8	1709.2	2286.3	4427.7	9970.5	18274.9	18698.5	17116.6	13319.9	8287.1	3563.3
77.5°	892.4	916.3	1134.5	1841.1	3995.5	10476.1	11020.7	9763.0	6389.9	2900.0	1456.5
80°	598.5	613.7	784.4	1091.3	1836.8	3989.1	4442.9	3919.9	2392.2	1655.2	1037.3
82.5°	386.8	395.5	533.8	717.4	1186.3	1402.5	1601.2	1672.5	1493.2	1186.3	626.7
85°	255.0	261.5	352.2	458.1	734.7	691.5	708.8	927.0	1017.8	782.3	319.8
87.5°	146.9	151.3	211.8	235.6	330.6	259.3	280.9	440.8	605.1	509.9	183.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3	3965.3
2.5°	3915.5	3898.3	3859.4	3835.7	3824.8	3820.5	3816.2	3824.8	3824.8	3820.5	3811.8
5°	3844.2	3811.8	3747.1	3701.6	3677.9	3671.4	3680.1	3690.8	3697.4	3697.4	3690.8
7.5°	3792.4	3744.9	3658.5	3595.8	3559.1	3548.2	3572.0	3610.9	3636.8	3649.8	3651.9
10°	3749.2	3684.4	3589.3	3524.5	3494.2	3489.9	3520.2	3569.9	3623.9	3647.6	3651.9
12.5°	3710.3	3636.8	3533.1	3472.6	3451.0	3461.8	3502.9	3548.2	3610.9	3645.5	3647.6
15°	3673.5	3597.9	3487.8	3425.0	3420.7	3438.0	3476.9	3513.6	3561.2	3604.5	3604.5
17.5°	3630.4	3548.2	3433.7	3375.3	3375.3	3390.5	3416.5	3435.9	3466.2	3507.2	3505.0
20°	3578.5	3494.2	3377.5	3317.0	3304.0	3295.4	3295.4	3299.7	3325.6	3362.4	3368.9
22.5°	3539.6	3453.2	3330.0	3256.5	3198.2	3142.0	3118.3	3109.6	3133.3	3167.9	3176.6
25°	3539.6	3453.2	3314.9	3191.7	3049.1	2941.0	2895.7	2882.7	2906.4	2938.8	2951.8
27.5°	3597.9	3511.5	3349.4	3133.3	2871.8	2699.0	2644.9	2634.2	2655.8	2681.7	2694.7
30°	3734.1	3649.8	3448.9	3066.4	2675.2	2448.3	2387.8	2377.0	2387.8	2398.6	2413.8
32.5°	3961.0	3889.7	3610.9	3005.8	2476.5	2221.4	2148.0	2130.7	2135.0	2137.1	2150.1
35°	4330.5	4298.0	3827.0	2934.5	2288.4	2035.6	1960.0	1925.4	1923.2	1934.0	1949.1
37.5°	4896.7	4916.1	4105.7	2830.8	2132.9	1903.8	1828.1	1793.5	1776.3	1797.9	1815.2
40°	5696.2	5741.6	4427.7	2690.4	2005.3	1826.0	1746.1	1713.6	1689.8	1683.4	1692.0
42.5°	6735.6	6722.6	4756.2	2511.0	1867.0	1774.1	1689.8	1655.2	1616.4	1566.6	1555.9
45°	7967.4	7781.5	5030.7	2290.6	1709.2	1724.4	1637.9	1590.5	1529.9	1456.5	1447.8
47.5°	9421.6	8909.5	5199.1	2055.0	1562.4	1659.6	1579.6	1506.2	1417.6	1370.0	1363.6
50°	11174.1	10229.8	5318.0	1815.2	1430.5	1577.5	1497.5	1400.3	1313.9	1300.9	1298.7
52.5°	13248.6	11787.9	5465.0	1599.1	1326.8	1471.6	1415.4	1316.0	1246.9	1253.3	1253.3
55°	15454.9	13399.8	5469.3	1428.3	1236.0	1348.5	1354.9	1274.9	1220.9	1242.6	1249.0
57.5°	17466.8	14808.8	5039.3	1307.3	1149.6	1251.2	1335.5	1290.0	1249.0	1324.6	1331.2
60°	19221.5	15893.6	4114.4	1208.0	1078.3	1214.4	1378.6	1383.0	1374.3	1579.6	1594.8
62.5°	19863.2	15904.4	2921.5	1123.7	1039.4	1236.0	1469.5	1475.9	1475.9	1666.1	1694.2
65°	18964.3	14579.7	1944.8	1074.0	1013.4	1283.6	1542.9	1514.8	1447.8	1579.6	1549.4
67.5°	15796.3	11349.1	1421.9	1041.6	976.7	1285.7	1607.8	1536.4	1421.9	1534.2	1482.4
70°	10856.5	7221.8	1190.7	1011.3	933.5	1229.6	1642.3	1529.9	1383.0	1430.5	1361.3
71°	8738.8	5763.2	1130.2	1000.5	916.3	1197.2	1646.6	1521.3	1363.6	1393.8	1331.2
72.5°	5756.7	3550.4	1056.7	976.7	890.3	1141.0	1635.8	1501.8	1337.6	1339.8	1298.7
75°	2271.2	1471.6	950.8	922.7	816.8	1050.2	1588.2	1460.8	1287.9	1244.7	1227.4
77.5°	1147.4	961.6	836.3	847.1	730.4	957.3	1521.3	1393.8	1218.7	1160.4	1147.4
80°	838.4	730.4	715.2	734.7	633.1	866.5	1437.0	1303.0	1130.2	1190.7	1164.7
82.5°	509.9	445.2	559.7	607.2	529.4	773.7	1337.6	1197.2	1017.8	937.8	907.6
85°	242.0	261.5	404.1	447.3	391.2	618.1	1223.0	1080.4	888.1	767.1	780.1
87.5°	118.9	144.7	231.2	267.9	257.2	453.8	922.7	838.4	700.1	576.9	564.0
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)