

LIGO-T080085-00-D

Homogeneity summary - initial LIGO ETMs and FMs -Billingsley

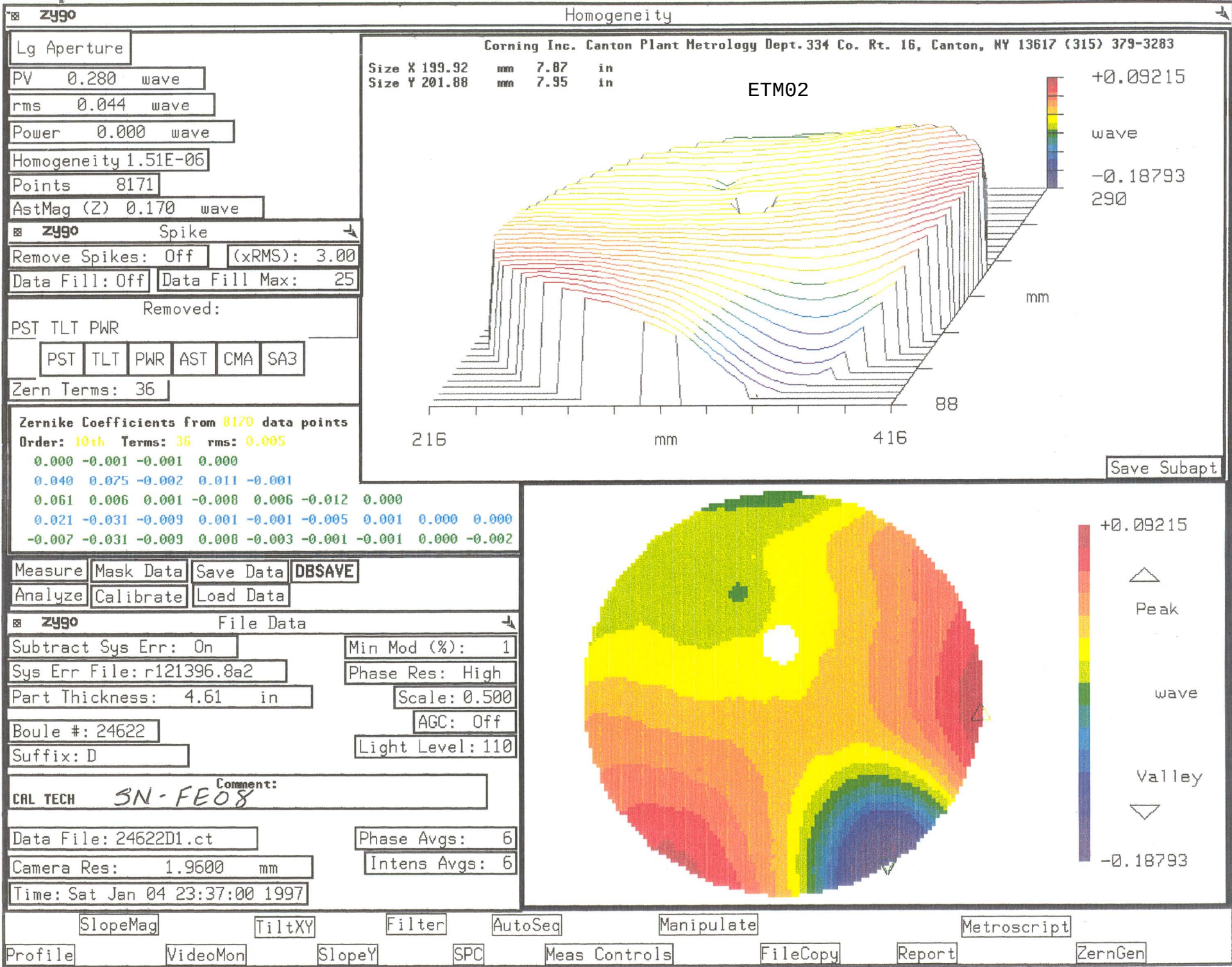
All examples in this .pdf are of 0A grade material.

0 designates the bubble class

“A” designates the homogeneity, the classification means $< 1 \times 10^{-6}$ ppm

The PV value in the upper left corner of the display tells you the peak to valley opd in units of waves of 632.8nm

The size of the measurement aperture can be found in the upper left corner of the top graphic.



No Aperture

ETM04

PV 0.120 wave

Histogram

rms 0.0203 wave

Power -0.004 wave

Homogeneity 5.60E-07

Points 8174

Removed: PST TLT PWR

PST TLT PWR AST COMA SA3

Controls

Analyze Mask Data Calibrate Save Data Load Data

Seidel Coefficients

From 36 term Zernike fit

Aberration	Magnitude waves	Angle degs.
TILT	0.070	-138
FOCUS	-0.027	
ASTIGMATISM	0.081	3
COMA	0.071	41
SPHERICAL	0.023	

Filter: Off

Filter Type: Average

Filter Window Size: 5

Remove Spikes: On

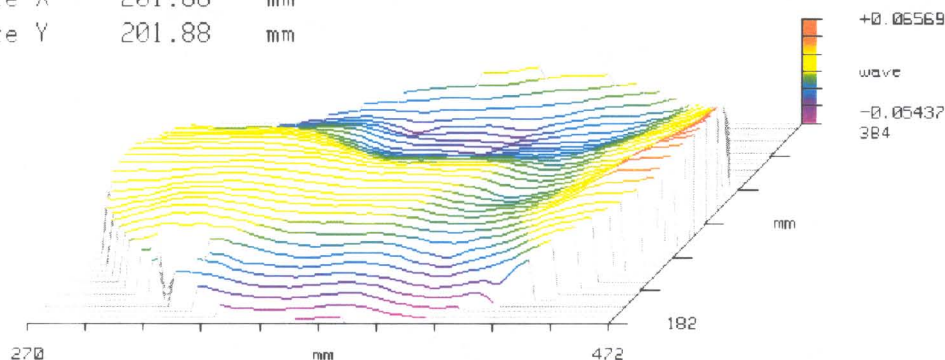
Zernikes

Zernike Terms: 36

Homogeneity 5.60E-07

Save Subapt

Size X 201.88 mm
Size Y 201.88 mm



Controls

Intf Scale Factor: 0.500

Camera Res: 1.9600 mm

Phase Res: High

Phase Avgs: 6 Mask Location:

Data Sign: Normal

Sys Err File: r111596.802

Part Thickness: 135.74 mm

Part Num: F855306

Part Ser Num: 34639BCT

Comment: CAL TECH

Data File: 34639BCT

Time: Wed Nov 20 01:37:07 1996

Slope Mag Map Profile Plot Synthetic Fringe Map Intensity Map

Report File Utilities Zernike Generate Manipulate

zygo

Lg Aperture

PV 0.156 wave

rms 0.021 wave

Power 0.062 wave

Homogeneity 7.29E-07

Points 8248

AstMag (Z) 0.076 wave

zygo Spike

Remove Spikes: Off (xRMS): 3.00

Data Fill: Off Data Fill Max: 25

Removed:

PST TLT PWR

PST TLT PWR AST CMA SA3

Zern Terms: 36

Zernike Coefficients from 8247 data points

Order	10th	Terms	36	rms	0.004
-0.052	0.055	-0.029	0.031		
0.037	0.007	0.020	-0.006	0.002	
0.023	0.002	0.012	-0.003	0.000	0.000
0.014	0.000	0.003	-0.008	-0.002	0.000
0.005	-0.004	0.000	-0.005	0.001	0.001

Measure Mask Data Save Data DBSAVE

Analyze Calibrate Load Data

zygo File Data

Subtract Sys Err: On Min Mod (%): 1

Sys Err File: r111596.802 Phase Res: High

Part Thickness: 5.34 in Scale: 0.500

Boule #: 34639 AGC: Off

Suffix: SNC Light Level: 110

Comment:

38" BOULE SN-FE01

Data File: 34639sn2.sbt Phase Avgs: 6

Camera Res: 1.9600 mm Intens Avgs: 6

Time: Tue Nov 19 23:38:37 1996

Corning Inc. Canton Plant Metrology Dept. 334 Co. Rt. 16, Canton, NY 13617 (315) 379-3283

Size X 201.88 mm 7.95 in

Size Y 201.88 mm 7.95 in

FM01

+0.11150

wave

-0.04482

345

mm

143

312 514

Save Subapt

+0.11150

△ Peak

wave

Valley ▽

-0.04482

SlopeMag TiltXY Filter AutoSeq Manipulate Metroscript

Profile VideoMon SlopeY SPC Meas Controls FileCopy Report ZernGen

zygo

Homogeneity

Lg Aperture

PV 0.033 wave

rms 0.007 wave

Power 0.021 wave

Homogeneity 1.89E-07

Points 1274

AstMag (Z) 0.034 wave

zygo Spike

Remove Spikes: Off (xRMS): 3.00

Data Fill: Off Data Fill Max: 25

Removed:

PST TLT PWR

PST TLT PWR AST CMA SA3

Zern Terms: 36

Zernike Coefficients from 1273 data points

Order: 10th Terms: 36 rms: 0.001

-0.004 0.000 -0.059 0.010

0.017 -0.001 0.003 0.000 -0.001

-0.001 -0.001 -0.002 -0.002 0.001 0.001 0.000

-0.001 0.000 0.001 0.001 -0.001 0.000 0.000 0.000 0.000

0.000 0.001 0.001 0.000 0.000 -0.001 0.001 0.000 0.000

Measure Mask Data Save Data DBSAVE

Analyze Calibrate Load Data

zygo File Data

Subtract Sys Err: On

Min Mod (%): 1

Sys Err File: r111596.802

Phase Res: High

Part Thickness: 4.29 in

Scale: 0.500

Boule #: 34640

AGC: Off

Suffix: ACT

Light Level: 110

CALIF INST TECH

Comment:

SN-FE02

Data File: 34640ACT.dat

Phase Avgs: 6

Camera Res: 1.9600 mm

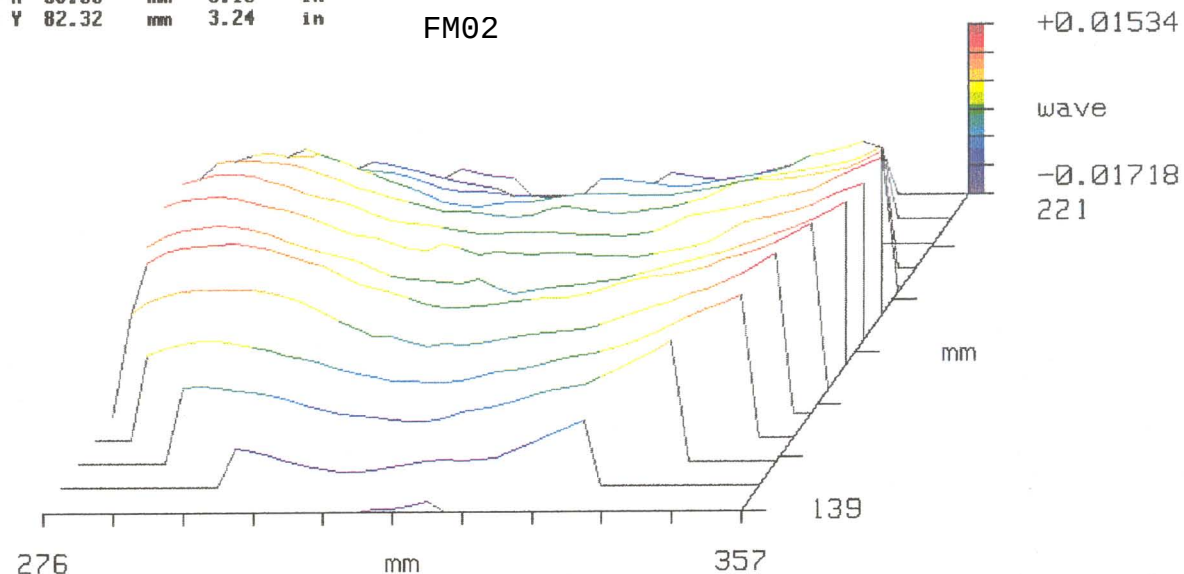
Intens Avgs: 6

Time: Sat Dec 07 01:19:48 1996

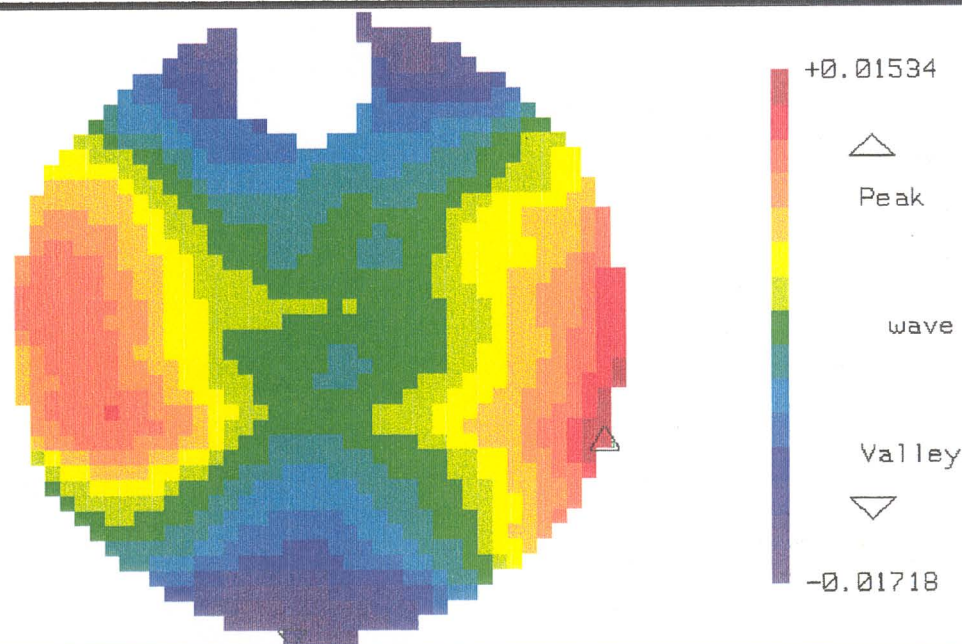
Corning Inc. Canton Plant Metrology Dept. 334 Co. Rt. 16, Canton, NY 13617 (315) 379-3283

Size X 80.36 mm 3.16 in
Size Y 82.32 mm 3.24 in

FM02



Save Subapt



SlopeMag

TiltXY

Filter

AutoSeq

Manipulate

Metroscript

Profile

VideoMon

SlopeY

SPC

Meas Controls

FileCopy

Report

ZernGen

ZernGen

-0.12485

zygo

Homogeneity

Lg Aperture

PV 0.111 wave

rms 0.016 wave

Power 0.000 wave

Homogeneity 5.98E-07

Points 8171

AstMag (Z) 0.068 wave

zygo Spike

Remove Spikes: Off (xRMS): 3.00

Data Fill: Off Data Fill Max: 25

Removed:

PST TLT PWR

PST TLT PWR AST CMA SA3

Zern Terms: 36

Zernike Coefficients from 8170 data points

Order: 10th Terms: 36 rms: 0.002

0.000 -0.001 0.000 0.000

0.032 0.012 -0.004 0.006 0.001

0.013 0.011 0.000 0.002 0.005 0.003 0.000

0.004 -0.004 0.003 -0.005 0.001 -0.001 -0.001 -0.002 -0.001

0.001 -0.004 0.003 -0.001 0.000 0.001 -0.001 0.001 -0.001

Measure Mask Data Save Data DBSAVE

Analyze Calibrate Load Data

zygo File Data

Subtract Sys Err: On

Min Mod (%): 1

Sys Err File: r121396.8a2

Phase Res: High

Part Thickness: 4.62 in

Scale: 0.500

Boule #: 24622

AGC: Off

Suffix: E

Light Level: 110

Comment:

CARL TECH

SN-FE05

Data File: 24622E1.ct

Phase Avgs: 6

Camera Res: 1.9600 mm

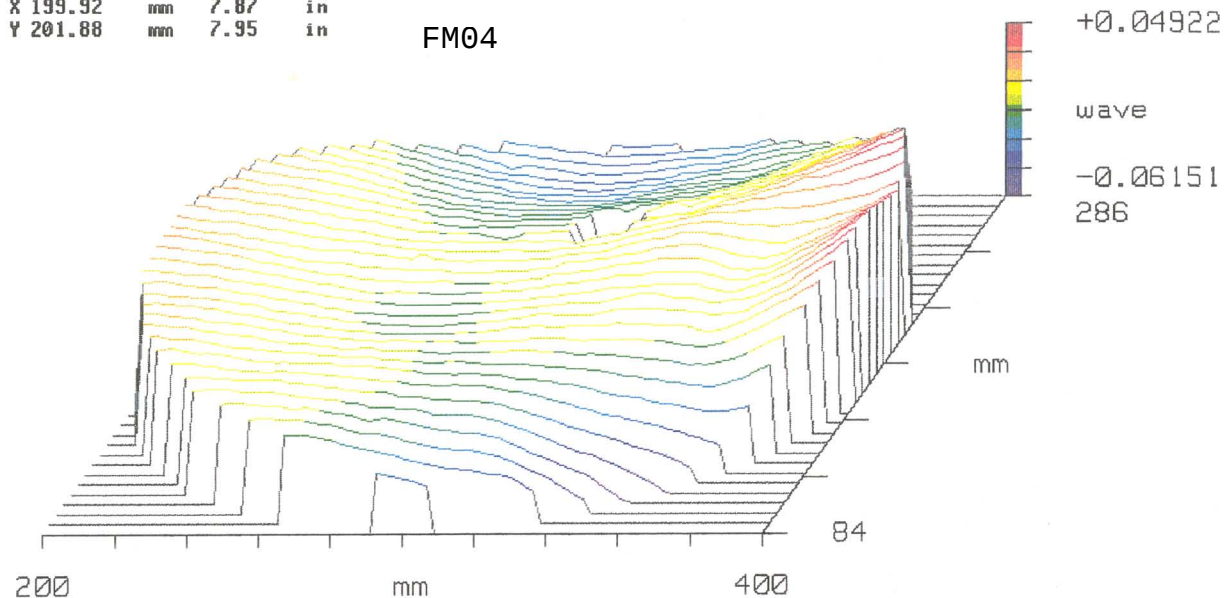
Intens Avgs: 6

Time: Fri Jan 03 22:15:59 1997

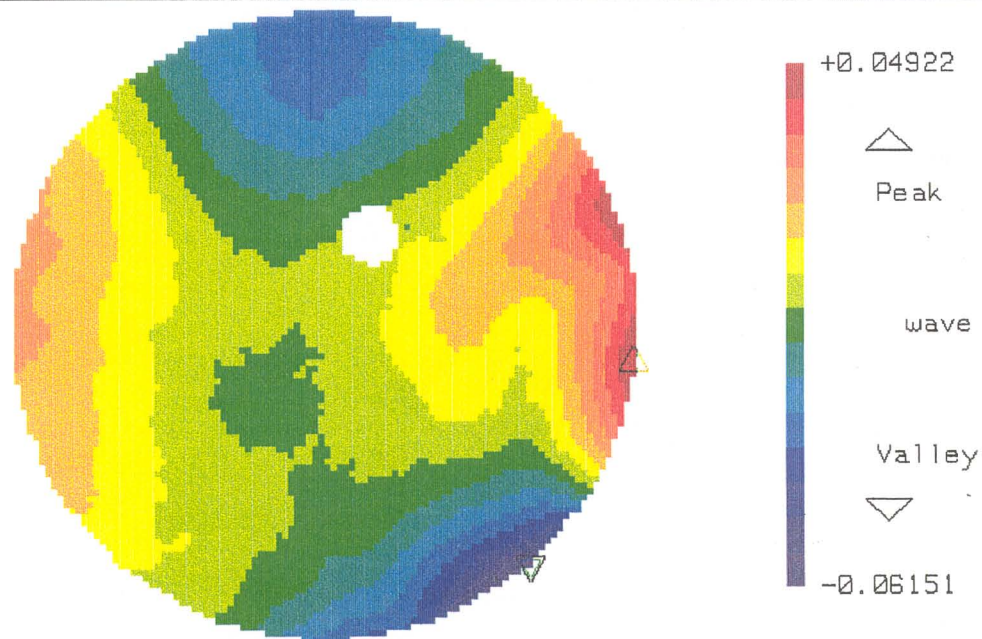
Corning Inc. Canton Plant Metrology Dept. 334 Co. Rt. 16, Canton, NY 13617 (315) 379-3283

Size X 199.92 mm 7.87 in
Size Y 201.88 mm 7.95 in

FM04



Save Subapt



SlopeMag

TiltXY

Filter

AutoSeq

Manipulate

Metroscript

Profile

VideoMon

SlopeY

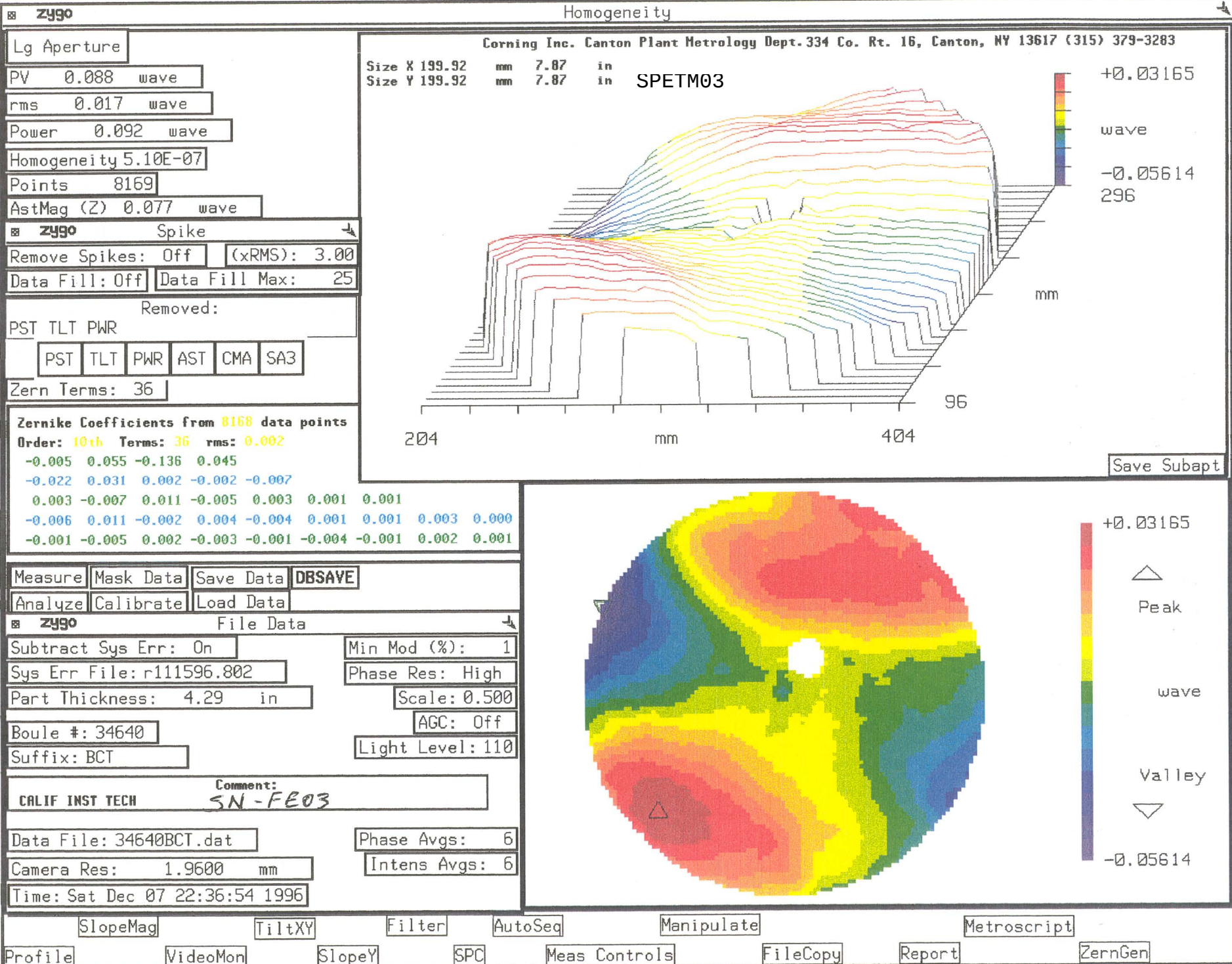
SPC

Meas Controls

FileCopy

Report

ZernGen



Lg Aperture

PV 0.169 wave

rms 0.025 wave

Power -0.024 wave

Homogeneity 9.09E-07

Points 8171

AstMag (Z) 0.111 wave

zygo Spike

Remove Spikes: Off (xRMS): 3.00

Data Fill: Off Data Fill Max: 25

Removed:

PST TLT PWR

PST TLT PWR AST CMA SA3

Zern Terms: 36

Zernike Coefficients from 8170 data points

Order: 10th Terms: 36 rms: 0.001

-0.137	0.038	0.029	-0.013						
0.055	-0.004	0.003	-0.014	-0.007					
-0.016	0.019	0.009	0.001	0.000	0.004	0.001			
-0.016	-0.002	0.001	-0.001	-0.002	0.000	0.000	-0.001	0.000	
-0.001	-0.005	0.004	0.002	0.000	0.000	0.000	0.000	0.000	

MeasureMask DataSave DataDBSAVE

AnalyzeCalibrateLoad Data

Subtract Sys Err: On

Sys Err File: r121396.8a2

Part Thickness: 4.618 in

Boule #: 24622

Suffix: G

CAL TECH SN-FE09Comment:

Data File: 24622G1.ct

Camera Res: 1.9600 mmReset

Time: Sat Jan 04 14:10:35 1997

