



Optical Systems, Inc.

JENOPTIK Optical Systems, Inc. • 16490 Innovation Drive • Jupiter, FL • USA

Quality Assurance Inspection Report

FINAL

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3:46 PM

6/6/2012

KONIDARIS
SEDM

Customer:	CA INSTITUTE OF TECH	JOSI Job # :	11554
Part Number:	SEDM-O-PRA	REV:	A
Part Name:	PRISM A	Prepared By:	JRM
Notes:			
QTY Received:	1		
QTY Accepted:	1		
QTY Rejected:	0		

	Characteristic Description		Units	Inspection Date	SN 001
UNCOATED	S1 PLANO		N/A	05/21/12	
	S1 IRREGULARITY	1	FRG		0.528
	S1 POWER	1	FRG		0.412
UNCOATED	S2 PLANO		N/A		
	S2 IRREGULARITY	1.5	FRG		0.652
	S2 POWER	1.5	FRG		0.442
	S1 SURFACE QUALITY	PER MIL-O-13830	60-40		<input checked="" type="checkbox"/>
	S2 SURFACE QUALITY	PER MIL-O-13830	80-50		<input checked="" type="checkbox"/>
	S1 ANGLE P1 LENGTH	65.0 +0.5/-0.0	MM		65.05
	S2 ANGLE P2 LENGTH	85.0 +0.5/-0.0	MM		85.12
	WIDTH	45.0 +0.5/-0.0	MM		45.36
	APEX ANGLE TO DATUM B	22.82 +/- 0.10	DEG		22.82
	BEVEL	1.0 MM X 45°	MM		<input checked="" type="checkbox"/>

Spec

65
85

22.82



Job 11554

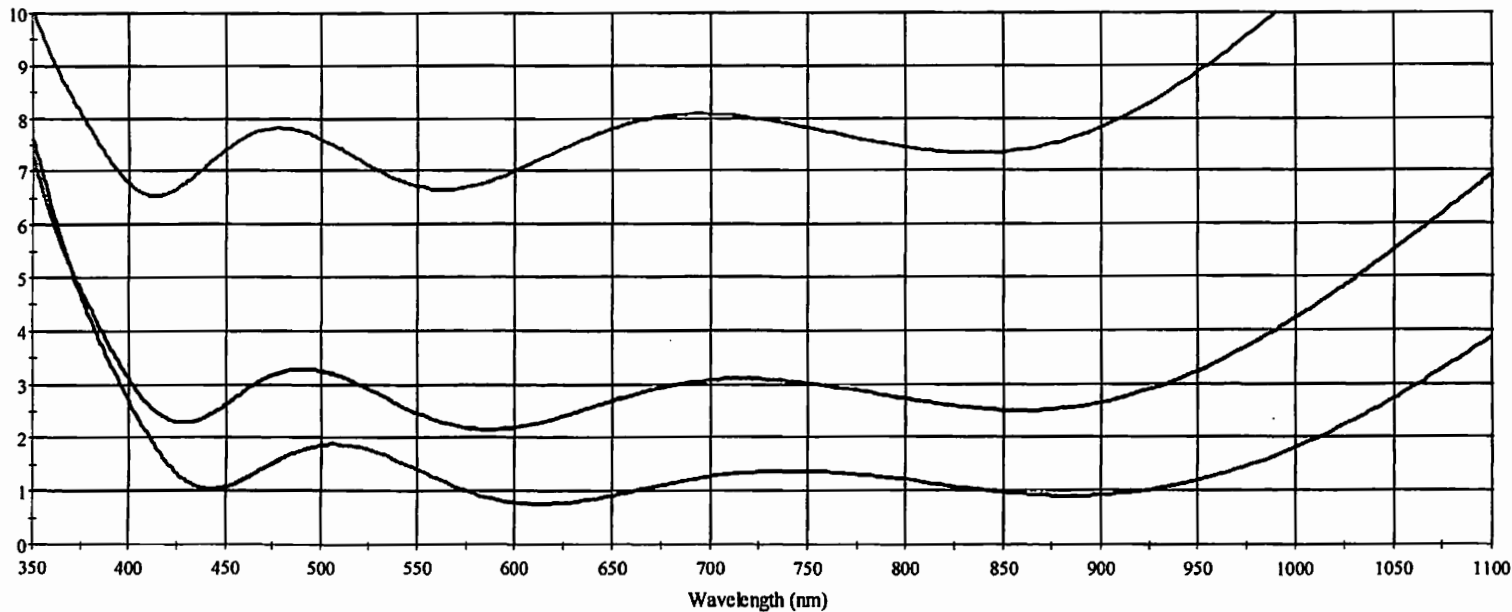
2365 Maryland Road
Willow Grove, PA 19090 USA
(215) 659.3080
(215) 659.1275 fax
evapsales@evapcoat.com
www.evaporatedcoatings.com

Coating Spectral Performance

Customer: Jenoptik Date: 5/25/12 Angle: 46.1, 56.3, 66.4 Analyst: KES
P.O. #: 4300000256 Run #: 16-2322 Polarization: avg Remarks: P/N SEDM-O-PRC

Ravg = 1.4% 370-920nm 46.1 deg
Ravg = 2.8% 370-920nm 56.3 deg
Ravg = 7.5% 370-920nm 66.4 deg

Reflectance (%)



— 46.1 deg
— 56.3 deg
— 66.4 deg

evaporated coatings inc

The screenshot displays the Zygo GPI Application interface with several windows open:

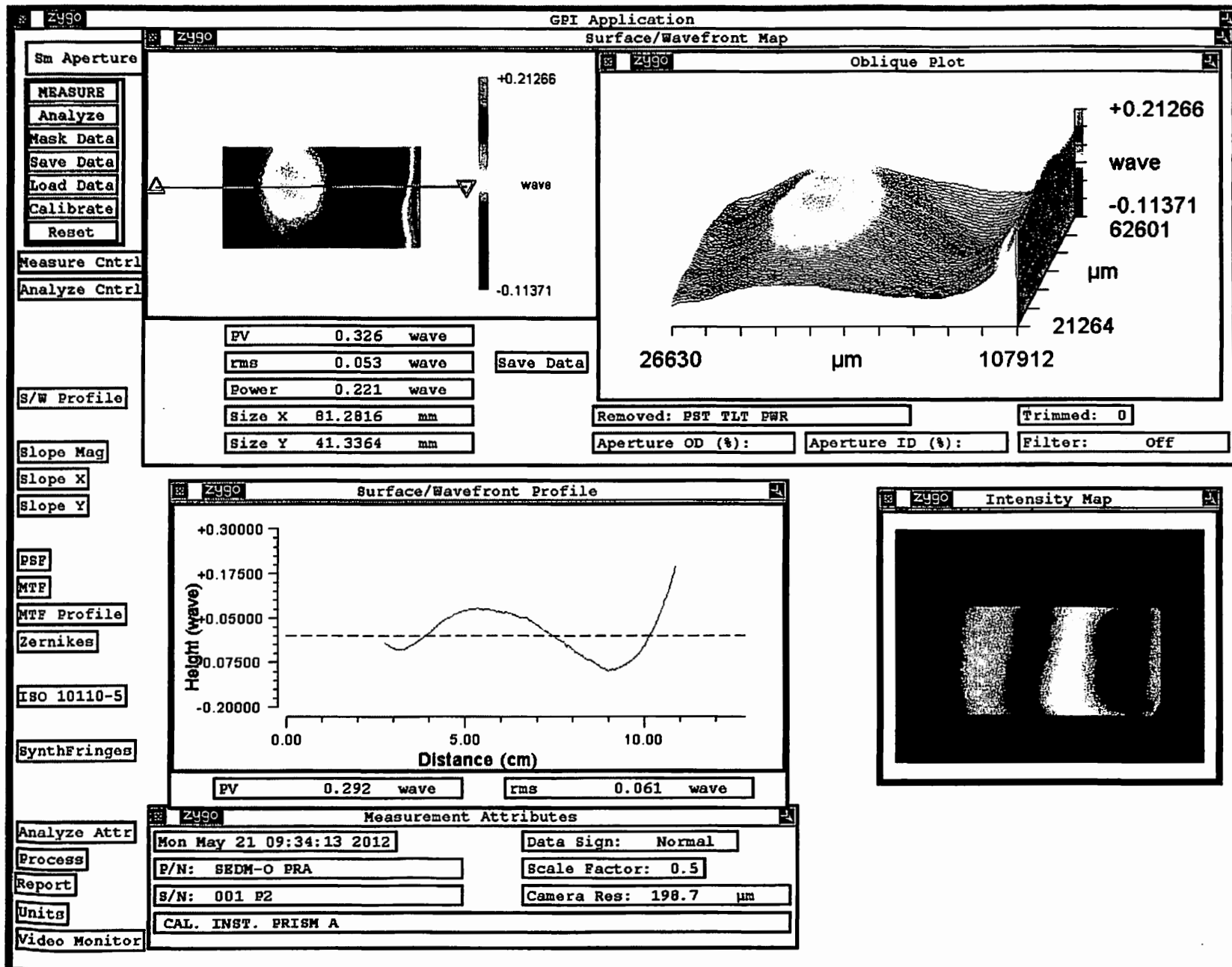
- Surface/Wavefront Map:** Shows a 2D map of the wavefront. A color scale on the right indicates height values from -0.18906 to +0.07530 waves. A central dark region is visible.
- Oblique Plot:** A 3D surface plot of the wavefront. The vertical axis represents height in waves, ranging from -0.18906 to +0.07530. The horizontal axes are labeled with coordinates 30666 and 92988 μm .
- S/W Profile:** A line graph showing the surface/wavefront profile. The vertical axis is Height (wave) from -0.20000 to +0.10000. The horizontal axis is Distance (cm) from 0.00 to 10.00. The profile shows a central dip. Below the graph, a table lists:

PV	0.264	wave
rms	0.038	wave
Power	0.206	wave
Size X	62.3216	mm
Size Y	42.1413	mm
- Intensity Map:** A 2D map showing the intensity distribution, displaying a series of diagonal fringes.
- Measurement Attributes:** A window containing the following data:

Mon May 21 09:31:44 2012	Data Sign: Normal
P/N: SEDM-O PRA	Scale Factor: 0.5
S/N: 001 P1	Camera Res: 197.8 μm
CAL. INST. PRISM A	

On the left side of the interface, there are several control panels:

- MEASURE:** Includes buttons for Analyze, Mask Data, Save Data, Load Data, Calibrate, and Reset.
- Measure Cntrl** and **Analyze Cntrl:** Control panels for measurement and analysis.
- S/W Profile:** A panel for selecting the profile type.
- Slope Mag**, **Slope X**, and **Slope Y:** Panels for selecting slope measurements.
- PSF**, **MTF**, **MTF Profile**, and **Zernikes:** Panels for selecting different analysis tools.
- ISO 10110-5** and **SynthFringes:** Panels for selecting standards and fringe synthesis.
- Analyze Attr**, **Process**, **Report**, **Units**, and **Video Monitor:** Panels for analysis attributes, processing, reporting, units, and video monitoring.





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Quality Assurance Inspection Report**FINAL**

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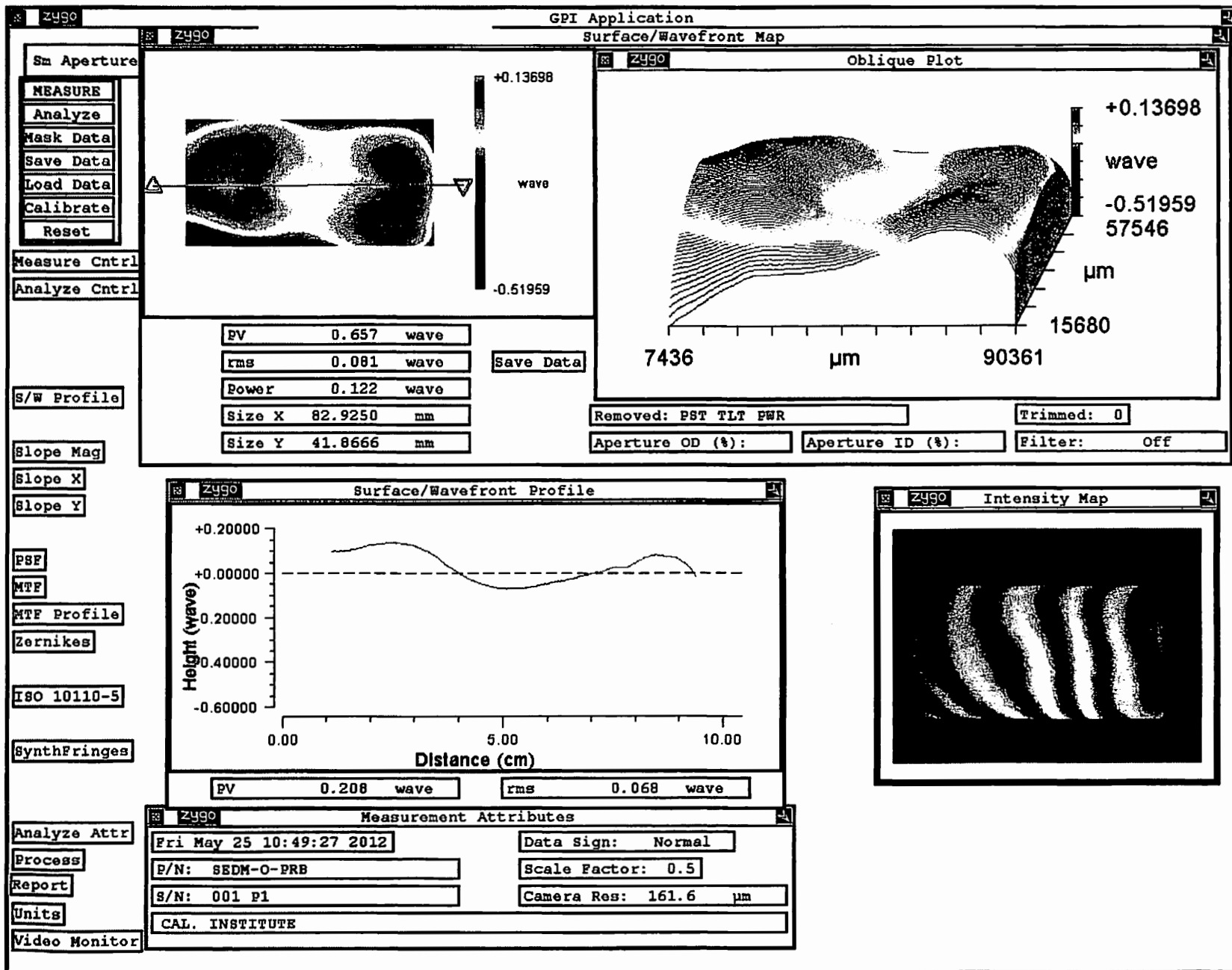
3:47 PM

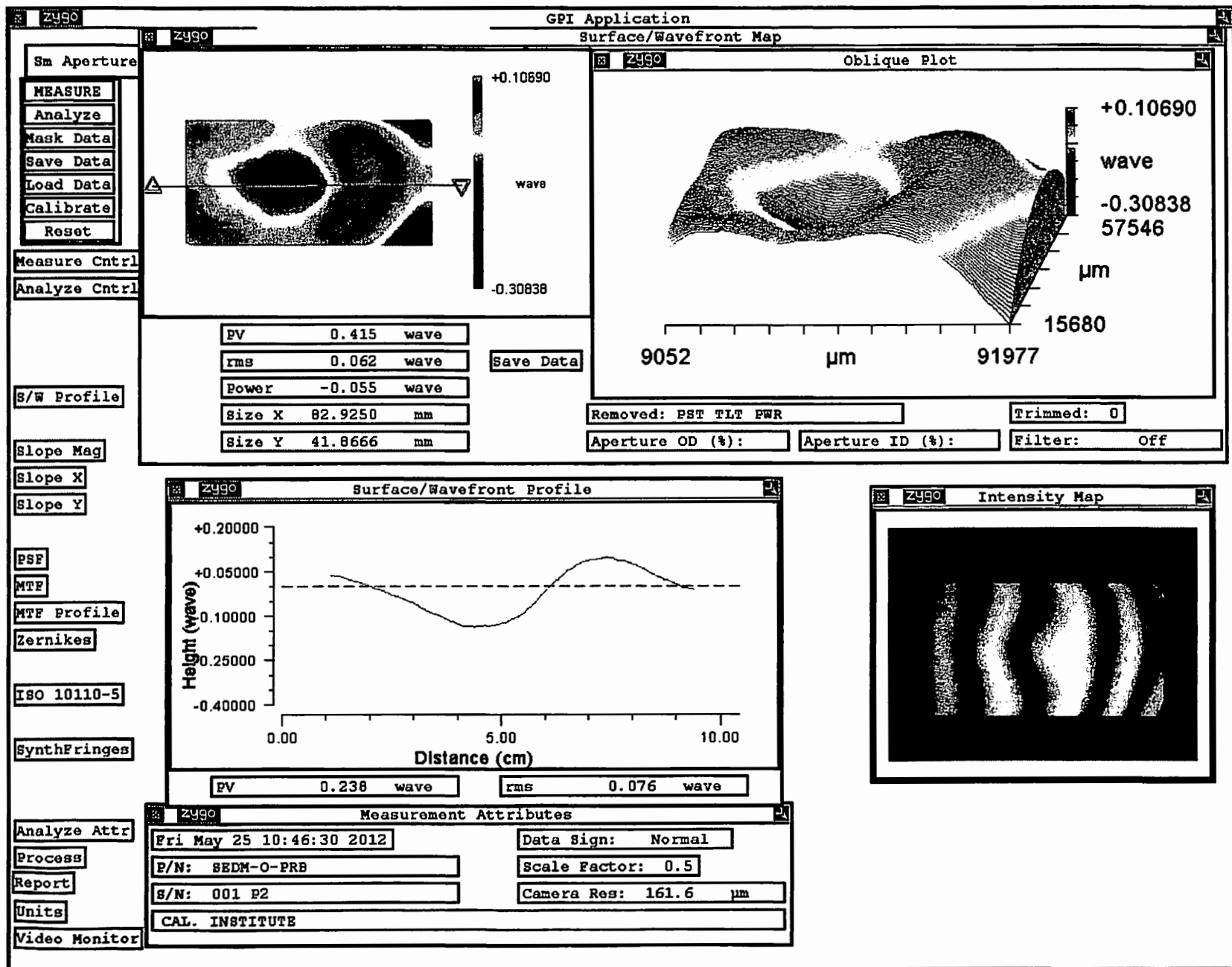
6/6/2012

Customer:	CA INSTITUTE OF TECH	JOSI Job # :	11554
Part Number:	SEDM-O-PRB	REV:	A
Part Name:	PRISM B	Prepared By:	JRM
Notes:			
QTY Received:	1		
QTY Accepted:	1		
QTY Rejected:	0		

	Characteristic Description		Units	Inspection Date	SN 001
UNCOATED	S1 PLANO		N/A	05/25/12	
	S1 IRREGULARITY	1.5	FRG		1.314
	S1 POWER	1.5	FRG		0.244
UNCOATED	S2 PLANO		N/A		
	S2 IRREGULARITY	1.5	FRG		0.830
	S2 POWER	1.5	FRG		-0.110
	S1/S2 SURFACE QUALITY	PER MIL-O-13830	80-50		<input checked="" type="checkbox"/>
	S1 ANGLE P1 LENGTH	85.0 +0.5/-0.0	MM		85.03
	S2 ANGLE P2 LENGTH	85.0 +0.5/-0.0	MM		85.09
	WIDTH	45.0 +0.5/-0.0	MM		45.36
	APEX ANGLE TO DATUM B	105.00 +/- 0.05	DEG		105.00
	BEVEL	1.0 MM X 45°	MM		<input checked="" type="checkbox"/>

11554
-PRB









Optical Systems, Inc.

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Quality Assurance Inspection Report

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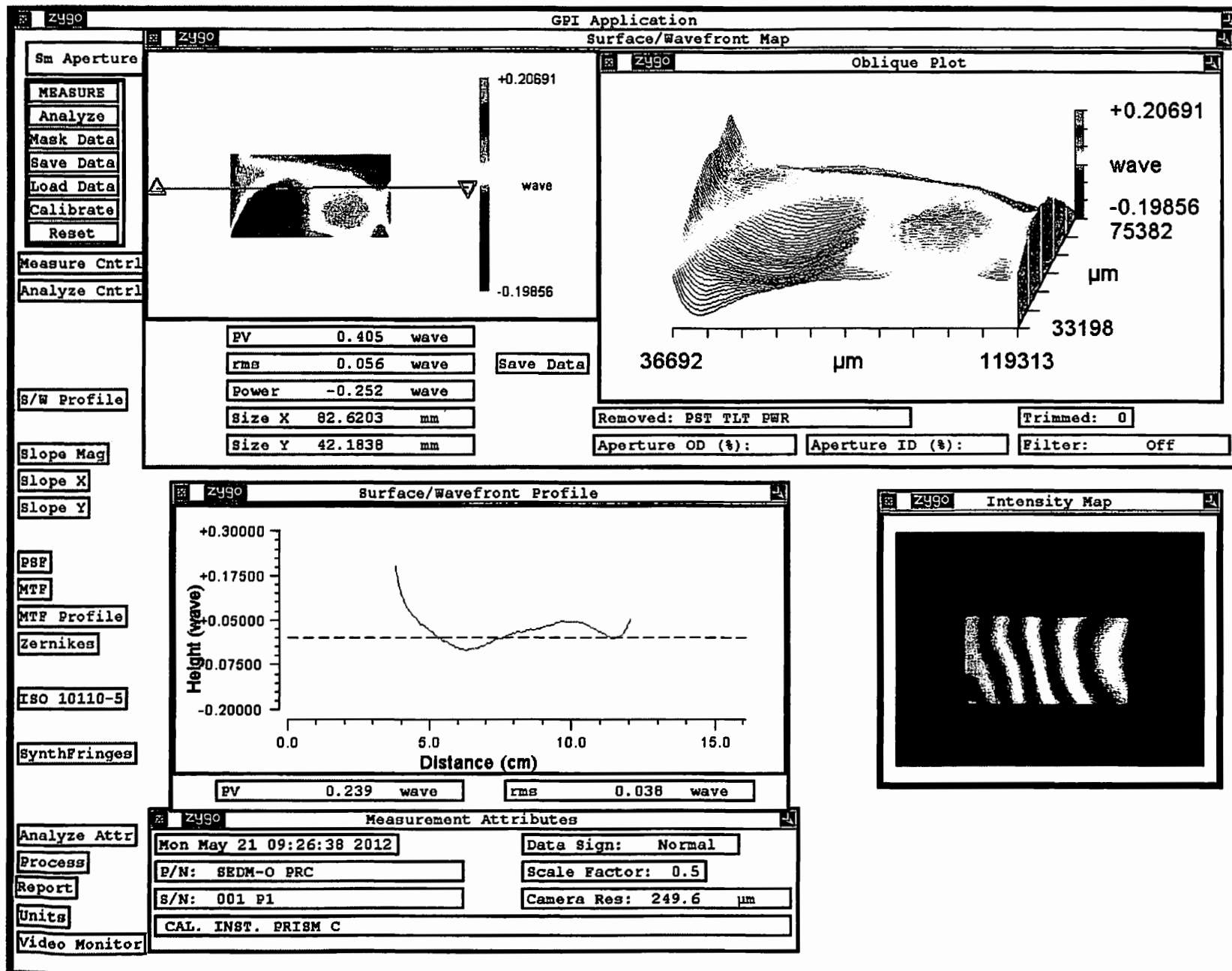
3:47 PM

6/6/2012

Customer:	CA INSTITUTE OF TECH	JOSI Job # :	11554
Part Number:	SEDM-O-PRC	REV:	A
Part Name:	PRISM C	Prepared By:	JRM
Notes:			
QTY Received:	1		
QTY Accepted:	1		
QTY Rejected:	0		

	Characteristic Description		Units	Inspection Date	SN 001
UNCOATED	S1 PLANO		N/A	05/21/12	
	S1 IRREGULARITY	1.5	FRG		0.810
	S1 POWER	1.5	FRG		-0.504
	S2 PLANO		N/A		
	S2 IRREGULARITY	1	FRG		0.758
	S2 POWER	1	FRG		0.084
	S1 SURFACE QUALITY	PER MIL-O-13830	80-50		<input checked="" type="checkbox"/>
	S2 SURFACE QUALITY	PER MIL-O-13830	60-40		<input checked="" type="checkbox"/>
	S1 ANGLE P1 LENGTH	85.0 +0.5/-0.0	MM		85.10
	S2 ANGLE P2 LENGTH	65.0 +0.5/-0.0	MM		65.02
	WIDTH	45.0 +0.5/-0.0	MM		45.37
	APEX ANGLE TO DATUM B	20.50 +/- 0.05	DEG		20.50
	BEVEL	1.0 MM X 45°	MM		<input checked="" type="checkbox"/>

11554



Hellma Materials GmbH & Co. KG · Moritz-von-Rohr-Str. 1 · 07745 Jena

Hellma Materials GmbH & Co. KG

Moritz-von-Rohr Str.1a

D-07745 Jena

Germany

Telefon (03641) 2877 177

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info.materials@hellma.com

JENOPTIK
Optical Systems Inc.

16490 Innovation Drive
USA

Specific Test Report
nach / according to DIN EN 10204 - 2 . 2

Nr. / No.: Datum / Date: Bl. / von / Page / from:
WE-03/12/04 07/03/2012 1/1

zu Lieferanzeige Nr. / to Delivery Note No.: vom/of: Zeichen des Herstellwerkes / Mark of the Manufacturer Zeichen des Sachverständigen / Inspector's Stamp:

Besteller / Purchaser:
Jenoptik

Bestellung Nr. / Order No.:
4500001430

Datum / Date:
08.02.2012

Unsere Auftrags-Nr. / Our Order No.:
1451221

Unsere Abteilung / Our Department:

Hausruf / Tel. Int.:
124

Erzeugnisform / Product:

Lieferbedingungen / Terms of Delivery:

Material Catalog/ Specification

Werkstoff / Lieferzustand / Quality / Condition of Delivery:

Lieferbedingungen und / oder amtliche Vorschriften
Terms of Delivery and / or Official Regulations:

CaF₂

Pos. / Item:	Anzahl und Einheit / Quantity and Unit:	Erzeugnisform und Abmessungen / Typ / Product and Dimensions / Typ:	Werkstoff / Lieferzustand / Quality / Conditions of Delivery:
1	2 Stück	CaF ₂ Prisma 70,63(+0,5/-0)x92,36(+0,5/-0)x38,65(+0,5/-0)mm 47,00(+0,5/-0)mm Thickness P1678: 001 – 002 → neue Zucht	Wellenlänge: Vis grade Orientierung: random chamf.angle: 45° chamfer: 1mm

Es wird bestätigt, daß die Lieferung den Vereinbarungen bei der Bestellung entspricht.

We hereby certify, that the material described above has been tested and complies with the terms of the order.

Delivery Note

Hellma Materials
Lithotec Crystals

Hellma Materials GmbH - Moritz-von-Rohr-Str. 1 - 07745 Jena - Germany

JENOPTIK Optical Systems, Inc.

16490 Innovation Drive

33478 FL, JUPITER

USA

sold-to: (5050013)

JENOPTIK Optical Systems, Inc.

16490 Innovation Drive

33478 FL, Jupiter

USA

Delivery-No.	82502443
Page:	1 of 2
Date:	Mar 7, 2012

Sales Person:	Daniel Hahn
Telephone:	+49-3641-2877-234
Fax:	+49-3641-2877-203
Contact Person:	Sina Rücknagel
Telephone:	+49-3641-2877-116
Fax:	+49-3641-2877-203

Your Order:	4500001430
Order No.	1451221

Our general terms of delivery apply as well as our payment terms:

net-weight: 0.38 KG

gross-weight: 0.70 KG

Item	Quantity	Unit	Article
1	2.00	piece	1268791
			CaF2 FE PM 70,63x92,36x38,65x47,0 N VIS G
			Country of Origin: Germany
			customs tariff no.: 90019000
			Material LITHOTEC® Calcium Fluoride
			Shape PRISMA / prism
			Length 70.63 mm
			Length_Tol+ 0.5 mm
			Width 92.36 mm
			Width_Tol+ 0.5 mm
			Height 47 mm
			Height_Tol+ 0.5 mm
			Surface finish geschliffen/ground
			customer-ID 10-SEDM-O-PRA-GB
			orientation Random
			Chamfer 1 mm
			wavelength VIS nm
			misc. Homogeneity: +/- 3 ppm
			chamf.angle 45 Grad

Hellma Materials GmbH
Moritz-von-Rohr-Str. 1
D-07745 Jena/Germany
phone +49 3641 2877 100
fax +49 3641 2877 200
info.materials@hellma.com
www.hellma.com

Managing Director:
Dr. Thomas Töpfer
Ulf Hellmeyer
Lutz Mayer
FA Jena St.-Nr. 162/110/04057
Registered office: Jena HRB 605179
VAT-ID: DE27640748

Commerzbank AG
BLZ 620 600 00 Account 03 421 60600
IBAN: DE 80 8208 0000 0342 1606 00
SWIFT-BIC: DRES DE 33 0327

Delivery Note

Hellma Materials
Lithotec Crystals

Delivery-No.	82502443
Page:	2 of 2
Date:	Mar 7, 2012

Item	Quantity	Unit	Article
			weight/pc 0.189 kg

dimensions:
70.63 (+0.5/-0) x 92.36 (+0.5/-0) x 38.65 (+0.5/-0) mm
47.00 (+0.5/-0) mm thickness
prism according drawing
protective bevels 1 mm

Batch: 029033N621 2.00 piece

1.00 carton 24 x 23 x 8 cm

Terms of payment: 30 days net

Terms of delivery: EXW Jena, unpacked, FedEx # 1562-3517-2



Job # 11554

**PHOENIX
Optical Glass Limited**

Phoenix Optical Glass Ltd., Lakeside, St. Asaph Business Park, Glascoed Road, St. Asaph, Denbighshire. LL17 0LJ
Telephone: +44 (0) 1745 584484 Fax: +44 (0) 1745 584050
Email: sales@phoenix-optical-glass.com Web: http://www.phoenix-optical-glass.com

CERTIFICATE OF CONFORMANCE AND MELT DATA

Company Name..... Naked Optics
Part Number..... 10-SEDM-O-PRB-GB
Part Number Issue..... N/A
Sales Order..... H21224/1
Comments.....
Customer Purchase Order..... 120027/4500001443
Delivered Quantity..... 1
Batch Number..... 1

OPTICAL DATA

All Glass Types conform to the military specification MIL - G - 174B, Paragraph 3.1.3. and contain no Thorium Oxide or other radioactive material beyond a limit of 0.05% by weight.

Glass Type..... BSL7Y
Melt Number..... SCS2950ZB04-130
Manufacturer..... OHARA
Anneal Run Number.....

Nd =	1.51634	Nr =	N/A	Nc =	1.51387	Vd =	64.38
Ne =	N/A	Nf =	1.52189	Ng =	1.52619	Nf-Nc =	0.00802
Nh =	N/A	Nc' =	N/A	Nf' =	N/A	Ve =	N/A
Nf'-Nc' =	N/A						

Authorised By: Stamp:

Date: 05/03/2012



3/7/12



**PHOENIX
Optical Glass Limited**

Phoenix Optical Glass Ltd., Lakeside, St. Asaph Business Park, Glascoed Road, St. Asaph, Denbighshire. LL17 0LJ
Telephone: +44 (0) 1745 584484 Fax: +44 (0) 1745 584050
Email: sales@phoenix-optical-glass.com Web: http://www.phoenix-optical-glass.com

CERTIFICATE OF CONFORMANCE AND MELT DATA

CompanyName.....Naked Optics CustomerPurchaseOrder..... 120027/4500001443
PartNumber..... 10-SEDM-O-PRC-GB DeliveredQuantity..... 1
PartNumberIssue.....N/A BatchNumber..... 1
SalesOrder..... H21224/2
Comments.....

OPTICAL DATA

All Glass Types conform to the military specification MIL - G - 174B, Paragraph 3.1.3.and contain no Thorium Oxide or other radioactive material beyond a limit of 0.05% by weight.

GlassType.....PBM2Y MeltNumber.....SCS3819ZB02-70
Manufacturer..... OHARA AnnealRunNumber.....

Nd = 1.62003 Nr = N/A Nc = 1.61501 Vd = 36.30
Ne = N/A Nf = 1.63209 Ng = 1.64205 Nf-Nc = 0.01708
Nh = N/A Nc' = N/A Nf' = N/A Ve = N/A
Nf'-Nc' = N/A

Authorised By:

Stamp:

Date: 05/03/2012

DOCUMENT NUMBER 008

ISSUE 7

JOSI
0001
3/7/12