

# TEST REPORT

**Changzhou Fengsheng Optoelectronics CO., LTD**

Y-Axis Thermal Expansion

Sample Designation: PMMA LIGHT GUID PANEL

Report Number: 02183

(1 of 5)



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**SUBMISSION IDENTIFICATION**

The following sample(s) were submitted and received in a suitable condition for testing as requested:

TEST SAMPLES SUBMITTED: 2009-10-12

TEST DATE: 2008-10-15

SAMPLE DESIGNATION: PMMA LIGHT GUID PANEL

SAMPLE QUANTITY: 1pcs

\* \* \* \* \*

IN ACCOUNT WITH:

NO.406 Hanjiang Road, New North District Changzhou, Jiangsu, China

0519-85172288

Contact: Jing Chen

**THERMAL MECHANICAL ANALYSIS**  
(TMA)

**SPECIMENS**

Two Y-direction specimens were subject to test.

**REFERENCE**

IPC-TM-650 method 2.4.24 Glass Transition Temperature and Z-Axis Thermal Expansion  
(TMA Method)

Customer Master Drawing

**METHOD**

Two specimens was prepared by cutting out and sanding any rough edges. The specimens was preconditioned by baking for 2 hours, at 40°C, then cooled to room temperature in a desiccator.

Measure and record the thickness of the specimens. Mount the specimen on the stage of the TMA and apply a load 5 g. Start the scan at a temperature no higher than 35°C to 100°C, at a rate of 10°C per minute.

**RESULTS**

The samples were tested as given by the methods above. See attached “Thermal Mechanical Analysis Test” data sheet and TMA scans for actual measurements.

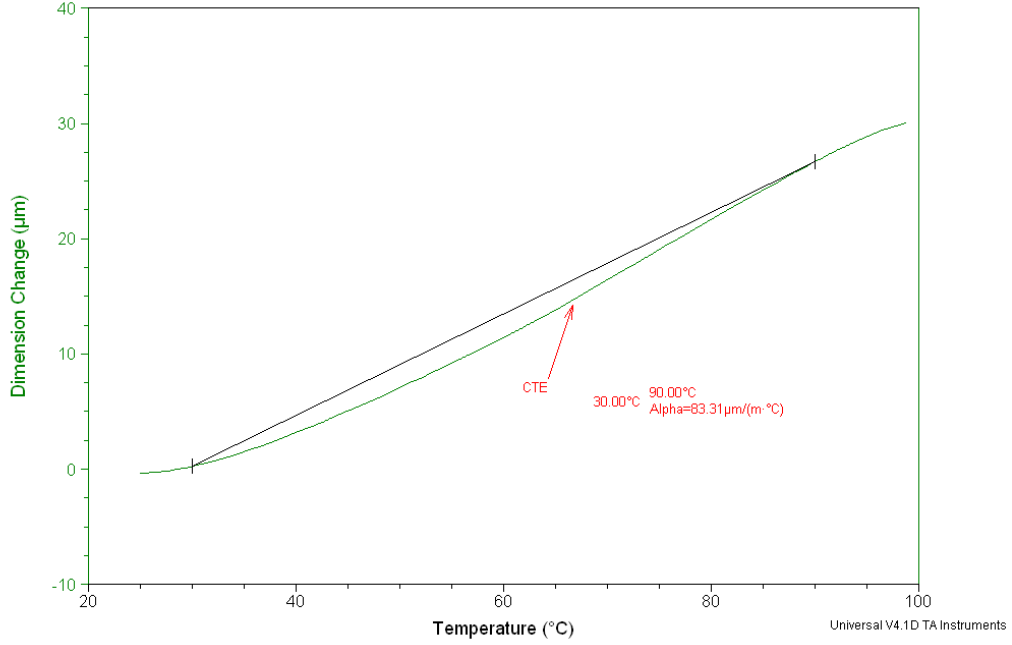
**THERMAL MECHANICAL ANALYSIS TEST**

<b>Sample Designation</b>	PMMA LGP	<b>Sample Identification</b>	/
<b>Test Date</b>	2009-10-15	<b>Ambient</b>	23°C, 58%RH
<b>Sample No.</b>	<b>Y-Axis Thermal Expansion (µm/m.°C)</b>		
	<b>(30~90)°C</b>		
	<b>Measurement</b>	<b>Requirement</b>	
<b>02183-1</b>	83.31	/	
<b>02183-2</b>	83.47		

Sample: 02183-1  
 Size: 5.2850 mm  
 Method: Tg  
 Comment: Y - CTE

TMA

File: X:\Thermal Analysis\Job\2183\02183-1.001  
 Operator: Vicky He  
 Run Date: 15-Oct-2009 14:22  
 Instrument: 2940 TMA V2.4E

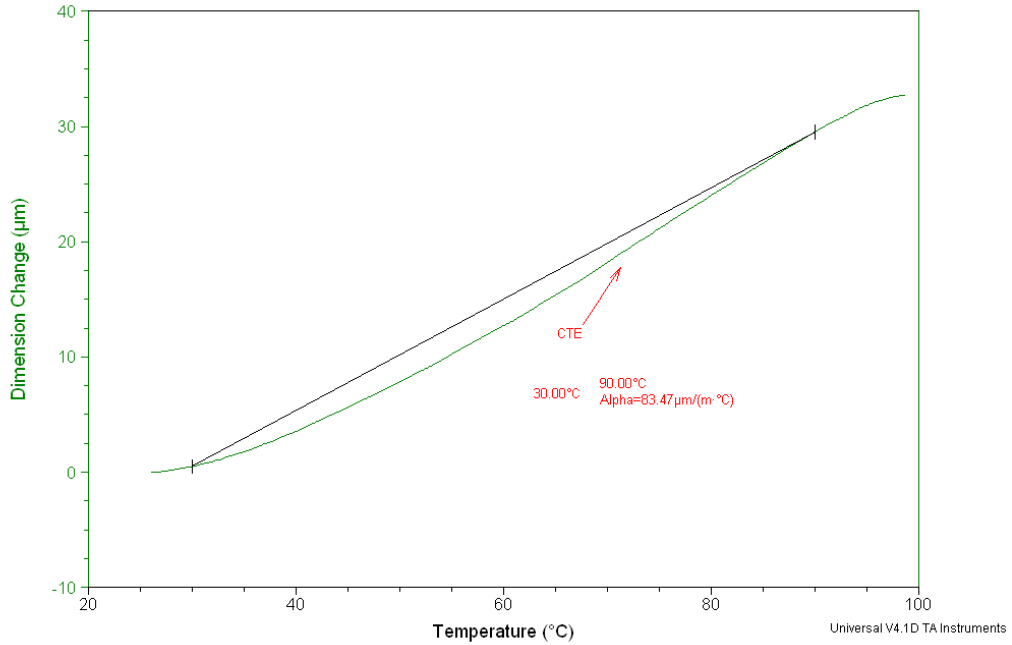


02183-1

Sample: 02183-2  
 Size: 5.7953 mm  
 Method: Tg  
 Comment: Y - CTE

TMA

File: X:\Thermal Analysis\Job\2183\02183-2.001  
 Operator: Vicky He  
 Run Date: 15-Oct-2009 15:42  
 Instrument: 2940 TMA V2.4E



02183-2

## CERTIFICATE OF CONFORMANCE

Microtek (Changzhou) Laboratories certifies that the test equipment used complies with the calibration requirements of correlation criterion and that the data contained in this report is accurate within the tolerance limitation of this equipment.

The materials and/or devices furnished on this order have been tested/analyzed/and inspected in accordance with all designated instructions and specifications. Physical reports and other data pertinent to applicable specifications are on file and available for inspection at this plant.

All test procedures detailed are complete. If any additional information or clarification of this report is required, please contact us.

Thank you for selecting Microtek (Changzhou) Laboratories for your testing requirements.

Edited by:



Vicky He

Date: 2009-10-16

Reviewed by:



Susan Le

Date: 2009-10-16

Approved by:



Steven Zhang

Date: 2009-10-16