



ShaPix[®] Surface Detective[™]

High-Definition Surface Defect Detection and Metrology Services

QUICK, EASY help with surface manufacturing issues using holographic high-definition processing

Introduction

Coherix, Inc. is the world leader in the delivery of high-definition 3-D digital holographic surface defect detection and metrology systems to industry for metrology laboratory, near-the-line and in-process applications. **Coherix's** customers have repeatedly proven the exceptional value of these systems for accelerating product development and process launches, as well realizing significant cost savings during production operations.

High-definition digital holographic surface defect detection and metrology is a “breakthrough technology” for enabling competitive precision manufacturing. Its unmatched benefits may not be immediately obvious to manufacturing operations which have long been saddled with non-productive and antiquated mechanical probes, plug gauges, and other similarly slow sources of sparse and low-density data samples. Furthermore, it may require considerable lead time in some organizations to obtain a capital budget, regardless of its clear business merits. **Coherix** recognizes these challenge that exists with almost any world-changing innovation. So it offers seriously interested potential users the opportunity yet another way to observe for themselves, with minimum investment, the cost savings and problem solving value of **ShaPix Surface Detective's** technology.

Services Offered by Coherix

At its facility in the heart of Michigan's high-tech manufacturing, laser and optics center in Ann Arbor, Coherix is able to provide rapid turn-around surface dimensional defect detection and metrology services to organizations on a fixed-price job basis as an introduction to its **ShaPix Surface Detective** technology. These services are limited to significant projects of high-value to solving manufacturing quality, cost, or time-pressure requirements and are not intended to handle single- or few-sample example measurements. Therefore these services carry with them certain obligations for the service customer (user) as well as for **Coherix**. In summary, services are provided as follows, subject to **Coherix's** evaluation of the suitability of the requested services:

Types of Defect Detection and Measurements Available

The types of measurements available are the repertoire of the **Coherix ShaPix Surface Detective** product family at the time the services are requested. At the time of this publication these include surface global and zone flatness; hole presence, location, and size relative to specified hole or edge datums, porosity, relative positioning and orientation of surfaces (such as parallelism, run-out, perpendicularity and thickness variation); and detection of certain specific surface defects such as burrs or edge breaks. Other types of processing will be added from time to time. Coherix will also consider adding other customer-specific surface dimensional processing when feasible and will quote an NRE charge for implementing same upon request.

Customer Commitments

1. A prospective customer for these services will prepare a services specification and submit it to **Coherix** with one or more samples of the types of parts or assemblies it desires to be processed and a dimensioned print of those items. This is necessary to ensure that a realistic and firm price can be established for the requested services. The standard one-sheet one-sided **Coherix** processing services specification requisition will be completed in its entirety by the customer to specify all aspects of the services desired. A blank copy of the standard requisition form is appended below for reference and use.

2. Upon acceptance of **Coherix's** fixed price and its schedule best estimate, the customer will issue a firm purchase order to **Coherix** for the specified processing and reporting services. Excessive delays in issuing such a purchase order may adversely impact the turnaround time estimate previously provided by **Coherix**.
3. The customer will deliver parts or assemblies to be processed to **Coherix's** facility and will pick them up when the services are completed. All shipment and insurance in both directions is the sole responsibility of the customer, who retains title to all of the processed parts or assemblies throughout.
4. The customer accepts sole liability for any use made by either itself or any third party of the information resulting from the services provided by **Coherix**, just as if the customer had performed the processing of the parts or assemblies itself with its own equipment and methods.
5. Payment will be made to **Coherix** within 30 days of the completion of the services including the delivery by **Coherix** of the report containing the results of the processing.

Coherix Commitments

1. **Coherix** will accept from a prospective service customer a definition of the specific measurements to be made and one or more samples of parts or assemblies to be processed, for **Coherix** to use to develop a fixed price to the prospective customer for the measurement services to be provided. **Coherix** will provide the customer with that price and its best estimate of the turnaround time to complete the specified measurement services.
2. **Coherix** will provide the user with a written report of the measurements performed in accordance with the previously agreed-upon services specification, normally including both numeric and analytical results and the unique **ShaPix Surface Detective** 3-D color images derived from holographic information that shows the defects and metrology results requested in the specification.
3. **Coherix** will maintain all information regarding the processing specification, and all results of the processing services, and any other information about the customer's parts or assemblies in full confidence and will execute a mutual non-disclosure agreement with the customer to that effect if required.
4. **Coherix** will exercise its best efforts to protect the condition of all parts and assemblies placed into its care for processing.

Further Guidance Regarding Services

It should be recognized that **Coherix ShaPix Surface Detective** defect detection and processing produces data that is thousands of times more dense and is produced thousands of times faster than data produced by typically probe tracing systems. Up to more than 4 million data points can be produced in approximately one minute by the **ShaPix Surface Detective** to characterize a surface, depending upon the portions and shape and areas of interest of the surface to be processed. Those are just a few of the significant unique aspects of **Coherix** high-definition metrology. Any size of surface up to more than one meter square can be mapped and otherwise processed when desired. The customer is urged to consider this vast difference between the cost and the value of the alternative services available for obtaining the surface processing information that he needs.

Typical Job Costing Example

Coherix offers these services for significant manufacturing defect detection and metrology projects. Typical cost for measurement is US \$250 for single position surfaces with a minimum job price of \$1000.00. Prices include **Coherix's** handling (unpacking, mounting, loading, positioning, unloading,...) of the items to be processed in-house, system set-up, performance of all processing, analysis of results, and preparation and delivery of a written report. Results are provided in computer-readable and color-graphic hard-copy imagery form. Typical turnaround time will be between 3 to 5 business days depending upon the rate at which the surfaces to be processed by **Coherix** are supplied by the customer. More extensive jobs may have a higher total job cost.