NEW

Surface Flaw Detection Scope™

SFD240305A

Using “OneShotBRDF”, Toshiba’s patented technology

- Visualizing difficult-to-observe microdefects on flat surfaces
- High-speed inspection using a multi-wave-length coaxial aperture filter via scattered light discrimination
- Highlighting difficult-to-identify scratches in an image in different colors
- Incorporates a high-resolution USB camera that can easily be connected to a PC

Toshiba Teli Corporation

https://www.toshiba-teli.co.jp/en/

Detecting flaws on flat surfaces with a single shot

OneShotBRDF solves these issues !

Current issues

- Difficult-to-detect microdefects
- Image processing optimization required to detect some types of defects
- Difficulty in passing the visual inspection expertise of skilled labor on to younger generations
- Unreliable organoleptic inspection
- Time-consuming inspection and resulting increase in costs

Benefits provided by OneShotBRDF

- Capable of identifying microdefects that have previously been difficult to detect
- Shows the base material and flaws/defects in different colors without the need for post-image processing
  - No need for skilled labor for inspection
  - Quality stabilization
  - Reduction in inspection time
- Highly compatible with AI-based post-processing

Application areas of the Surface Flaw Detection Scope

1 Inspection of glossy objects
Capable of clearly detecting scratches and other microdefects, being free from reflections of light sources

2 Inspection of flat objects
Specifically designed for the inspection of sheet-like objects and flat machined surfaces

3 Detailed inspection
Special optical system capable of detecting smaller scratches and other defects than is possible with typical machine vision inspection systems

4 Inspection by skilled labor
Eliminates the need for skilled labor as microdefects are identified in colors without the need for image processing

Ideal for the inspection of flat glossy objects such as those listed below

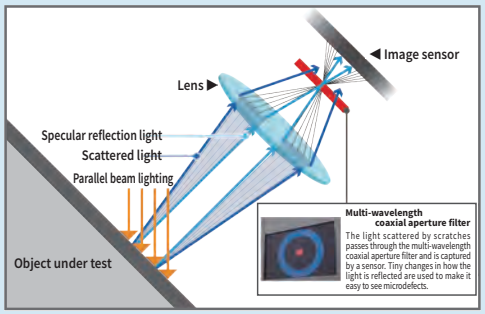
1 Mechanical parts
- Metal and plastic parts
- Photo-etched parts
- Specular surfaces

2 Optical parts
- Optical glass materials
- Optical filters
- Prisms
- Mirrors

3 Painted surfaces
- painting parts

4 Printed matter
- Book covers
- Decorative book boxes

"OneShotBRDF", an optical inspection technology

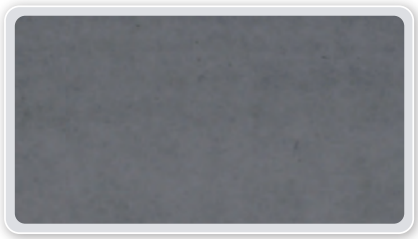


- New technology developed by Toshiba' s Corporate Research & Development Center
- Separates the light reflected on a specular surface under inspection from the light scattered by scratches and other microdefects and highlights them in different colors
- Provides clear images with a single shot instantly by obtaining information about microdefects as color information
- Multi-wavelength coaxial aperture filter customizable to your application requirements

The light scattered by scratches and other microdefects can be identified in different color without performing image processing with a PC.

Sample images

General optical system



Surface Flaw Detection Scope

Specifications

• Optical unit part

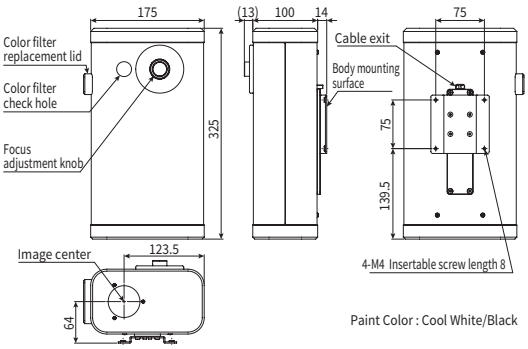
Measurement view*	ϕ40 mm
Minimum detectable flaw size*	Several tens of micrometers

*for reference only

• Camera unit

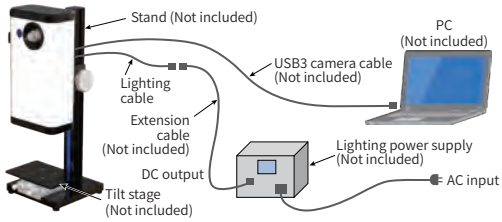
Camera	BU2409MCF (Color model) 
Image sensor	IMX540 (Sony Corp.)
Resolution	24.5 Mp (5,328 x 4,608 pix)
Pixel size	2.74 µm x 2.74 µm
Interface	USB 5Gbps (USB3.1 Gen1)

Drawing



Paint Color : Cool White/Black

• Configuration example



Notes on Safety

- Before using this product, please read "Operation Manual" carefully in order to use this product safely and correctly.
- If this product should be used in the extraordinary conditions or environments, or if you have any questions or problems, please contact our sales division.

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teli camera

The information of this catalog is current as of December 2023.

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