Technical information

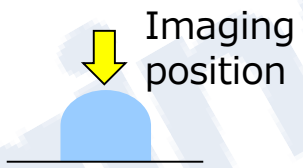
L-02: High-magnification & high-precision 3D appearance defect detection

● Detection of scratches and flaking in/on the high-precision optical lens

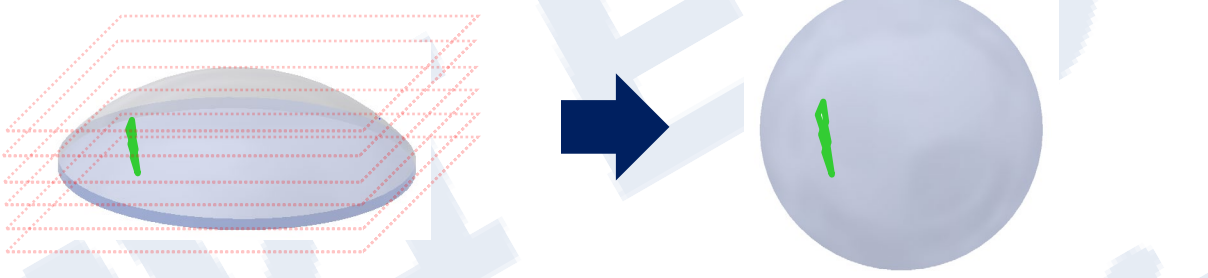
Detects minute scratches (ex: 38 μm in length) and flaking occurring in/on the lens

[Inspection & measurement logic - (i)]

- High-speed multifocal imaging automatically extracts focus images from the top to the bottom of the lens, respectively.
- High-speed 3D imaging of the wire by combining deep focus images



Combining deep focus images



Multipoint focus imaging

Combined deep focus image

✓ Please consult your sales rep about the actual image of the above description.

Scratch and flaking determination

[Inspection & measurement logic - (ii)]

- **DAVI HYBRID image processing** detects defects in the combined deep focus image.

  >Example**:** **The deep learning library can detect indeterminate** scratches and flaking.

  After this **the length of the scratch is measured by the rule-bases processing** and it is determined whether it is within or out of the prescribed range.

- Multifocal imaging enables **following-up if the height position of the scratch/flaking changes in the lens**

Value output result (actual)

(The table below is a capture screen of the measurements when a defect is detected.)

Length of the scratch in the lens:
33.67 [μm]

Detection time including image processing:
390 [ms] (rough calculation)

数値出力(キャリブレーション)の数値結果

出力値	Double[] Array
[0]	30.204966479041161
[1]	34.197441424761593
[2]	33.770179152619257
[3]	22.246123257772354
[4]	11.757657079537573

Max Length（μm）