

VS-TCH2



| | | VS-TCH2-65-LQL1 | VS-TCH2-65CO-LQL1 |
|--------------------------------|-------------|----------------------|-------------------|
| Focus tunable lens (Optotune) | Model | EL-16-40-TC-VIS-5D-C | |
| | Focal power | -2 dpt | +3 dpt |
| Extension Tube | | SV-EXR20 | |
| Optical Mag. | | x2.03 | x1.91 |
| FOV | 2/3" | 3.6x4.2 mm | 3.8x4.5 mm |
| | 1/2" | 2.4x3.2 mm | 2.6x3.4 mm |
| | 1/3" | 1.8x2.4 mm | 1.9x2.6 mm |
| WD | | 66.1 mm | 63.5 mm |
| Optical leverage | | 0.52 mm/dpt | |
| O/I (Object & Imager Distance) | | 164.5 mm | 161.9 mm |
| Working F/# | | 13.9 | 13.0 |
| Sensor Size (max.) | | 2/3" | |
| Co-Axial Prism | | - | Built in |
| Dimension | | φ30(max.) L=80.9 mm | |

VS-TCH4



| | | VS-TCH4-65-LQL1 | VS-TCH4-65CO-LQL1 |
|--------------------------------|-------------|----------------------|-------------------|
| Focus tunable lens (Optotune) | Model | EL-16-40-TC-VIS-5D-C | |
| | Focal power | -2 dpt | +3 dpt |
| Extension Tube | | SV-EXR15 | |
| Optical Mag. | | x4.00 | x3.69 |
| FOV | 2/3" | 1.8x2.1 mm | 1.9x2.3 mm |
| | 1/2" | 1.2x1.6 mm | 1.3x1.7 mm |
| | 1/3" | 0.9x1.2 mm | 1.0x1.3 mm |
| WD | | 65.3 mm | 64.7 mm |
| Optical leverage | | 0.12 mm/dpt | |
| O/I (Object & Imager Distance) | | 187.3 mm | 186.7 mm |
| Working F/# | | 18.1 | 16.8 |
| Sensor Size (max.) | | 2/3" | |
| Co-Axial Prism | | - | Built in |
| Dimension | | φ30(max.) L=104.6 mm | |

VS-THV1



| | | VS-THV1-110/S-LQL1 | VS-THV1-110CO/S-LQL1 |
|--------------------------------|-------------|-----------------------|----------------------|
| Focus tunable lens (Optotune) | Model | EL-16-40-TC-VIS-5D-C | |
| | Focal power | -2 dpt | +3 dpt |
| Extension Tube | | SV-EXR25 | |
| Optical Mag. | | x1.0 | x0.9 |
| FOV | 1" | 11.3x11.3 mm | 12.5x12.5 mm |
| | 2/3" | 7.1x8.4 mm | 7.9x9.3 mm |
| | 1/2" | 4.8x6.4 mm | 5.3x7.1 mm |
| WD | | 120.2 mm | 106.1 mm |
| Optical leverage | | 2.82 mm/dpt | |
| O/I (Object & Imager Distance) | | 266.4 mm | 252.3 mm |
| Working F/# | | 10.5 | 9.5 |
| Sensor Size (max.) | | 1" | |
| Co-Axial Prism | | - | Built in |
| Dimension | | φ32(max.) L=128.75 mm | |

VS-THV2



| | | VS-THV2-110/S-LQL1 | VS-THV2-110CO/S-LQL1 |
|--------------------------------|-------------|-----------------------|----------------------|
| Focus tunable lens (Optotune) | Model | EL-16-40-TC-VIS-5D-C | |
| | Focal power | -2 dpt | +3 dpt |
| Extension Tube | | SV-EXR50+SV-EXR10 | |
| Optical Mag. | | x2.0 | x1.79 |
| FOV | 1" | 5.6x5.6 mm | 6.3x6.3 mm |
| | 2/3" | 3.6x4.2 mm | 4.0x4.7 mm |
| | 1/2" | 2.4x3.2 mm | 2.7x3.6 mm |
| WD | | 115.6 mm | 105.4 mm |
| Optical leverage | | 2.04 mm/dpt | |
| O/I (Object & Imager Distance) | | 296.3 mm | 286.1 |
| Working F/# | | 10.2 | 9.1 |
| Sensor Size (max.) | | 1" | |
| Co-Axial Prism | | - | Built in |
| Dimension | | φ38(max.) L=162.75 mm | |

VS-TM10



| | | VS-TM10-55CO-LQL1 | |
|--------------------------------|-------------|----------------------|------------|
| Focus tunable lens (Optotune) | Model | EL-16-40-TC-VIS-5D-C | |
| | Focal power | -2 dpt | +3 dpt |
| Extension Tube | | SV-EXR20 | |
| Optical Mag. | | x11.06 | x9.57 |
| FOV | 2/3" | 0.6x0.8 mm | 0.7x0.9 mm |
| | 1/2" | 0.4x0.6 mm | 0.5x0.7 mm |
| | 1/3" | 0.3x0.4 mm | 0.4x0.5 mm |
| WD | | 55.33 mm | 55.38 mm |
| Optical leverage | | 0.01 mm/dpt | |
| O/I (Object & Imager Distance) | | 248.2 mm | 248.2 mm |
| Working F/# | | 24.0 | 20.8 |
| Sensor Size (max.) | | 2/3" | |
| Co-Axial Prism | | Built in | |
| Dimension | | φ37(max.) L=175.3 mm | |

Telecentric

VS-LQL SERIES

Focus Tunable

Focus Tunable Telecentric Lens



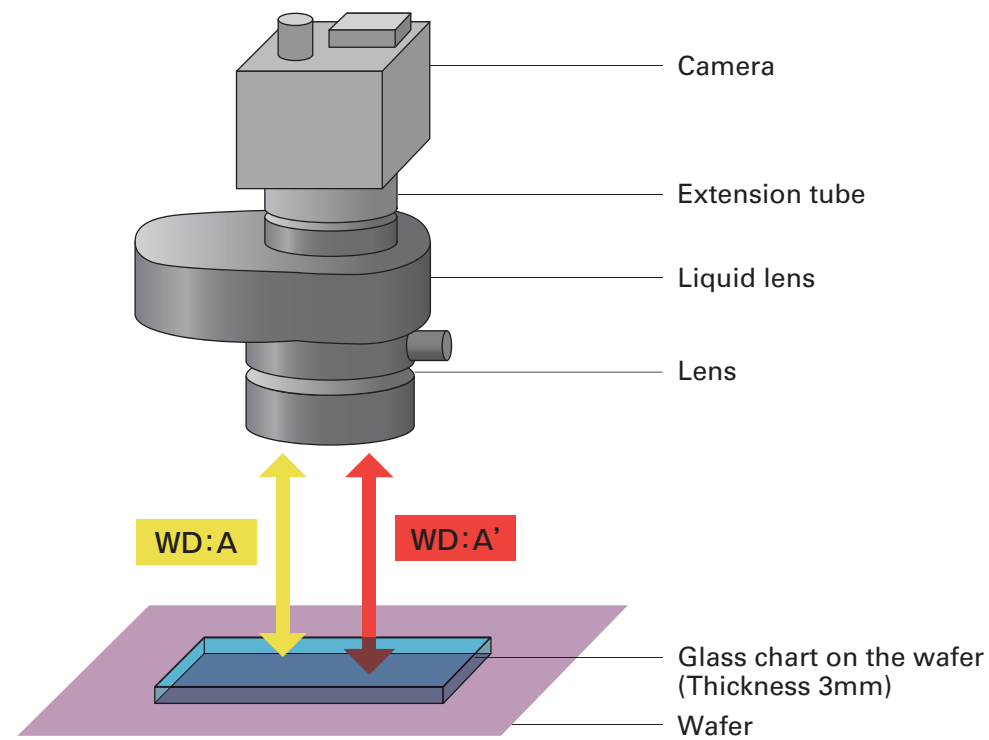
Fast-focusing solution/Compact design

Features

- Fast-focusing solution
- Focus tunable within working distance range

Focus tunable test

Test environment: 5MP CMOS 2/3 sensor 3.45μm, VS-THV2-110CO-LQL1, spot lighting (red)

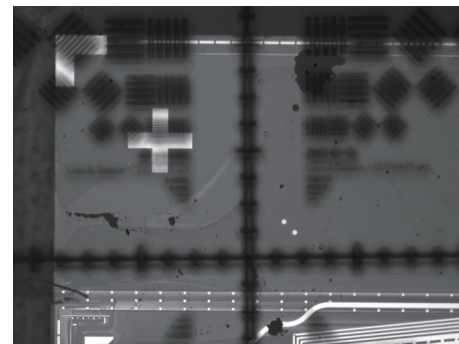
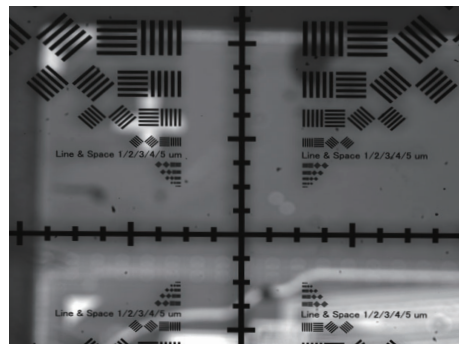


WD:A

Focus on top : Glass chart (Thickness 3mm)

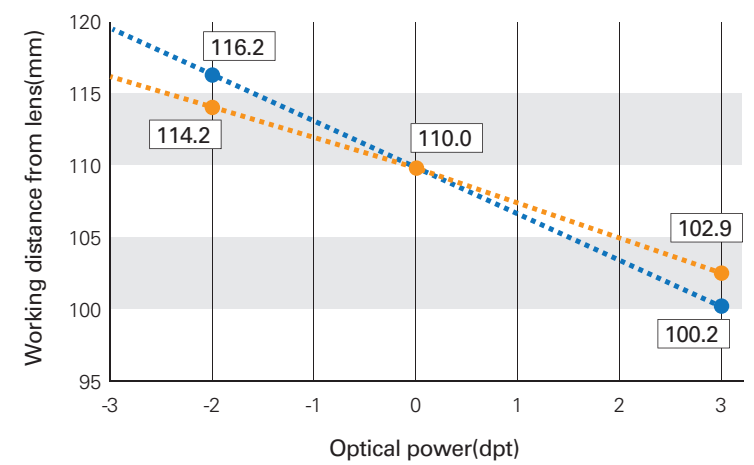
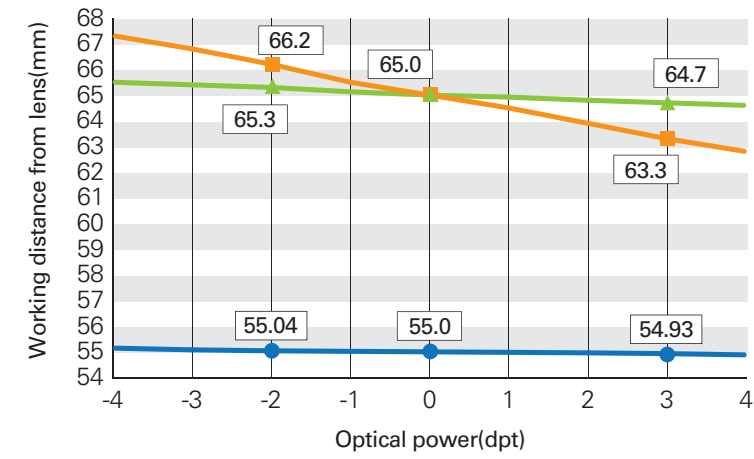
WD:A'

Focus on bottom : Wafer (Alignment mark)



Focus in various objects with different height

LQL series WD chart



Applications



PCB

Medical

Cutting tool

Electronic components