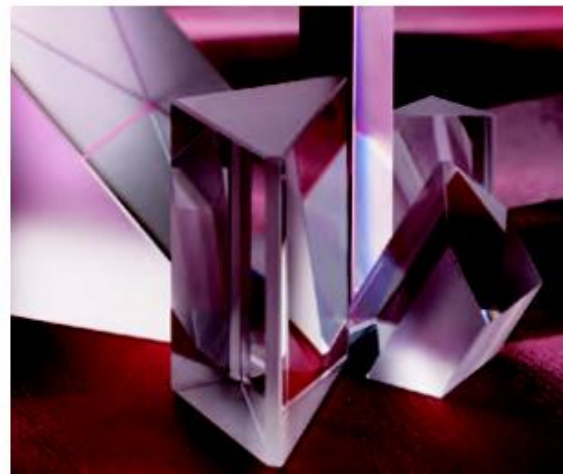
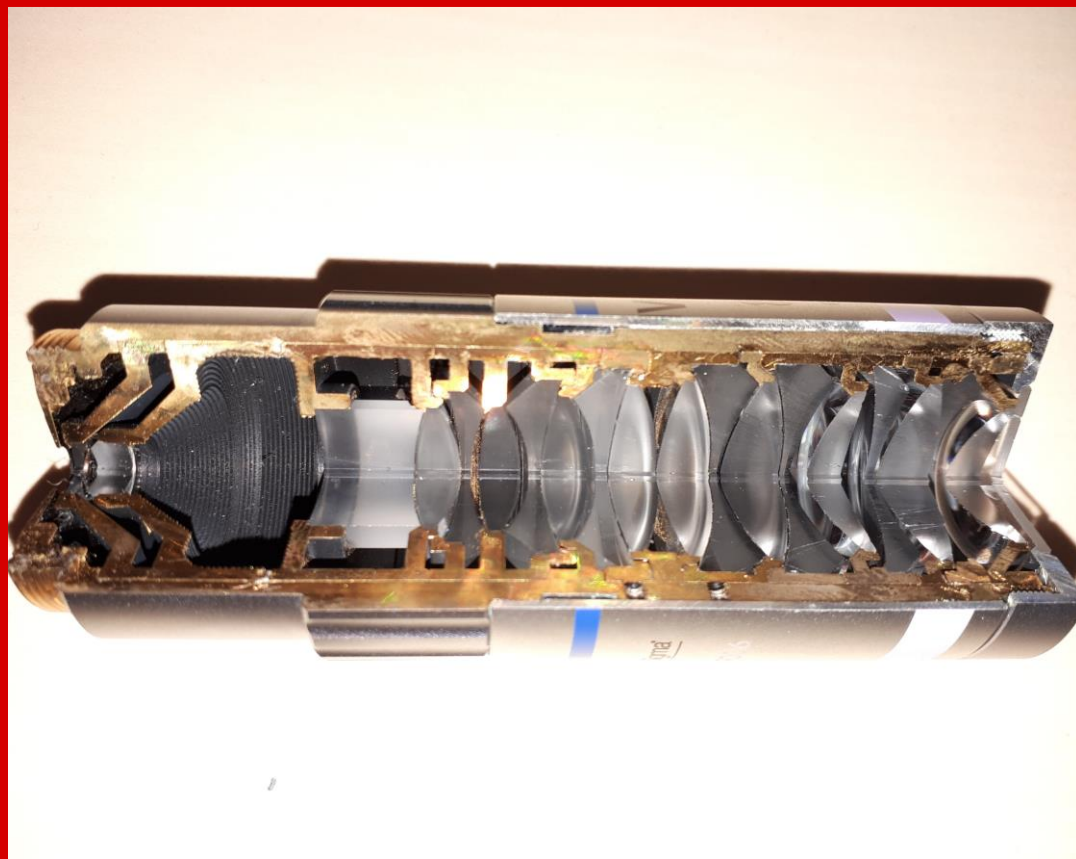




# OPTOSIGMA EUROPE

OBJECTIVES

# Presenting OptoSigma's Objectives



- Our Portfolio
- Our Specials
- Our Custom
- Our Systems

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**HOMEMADE**

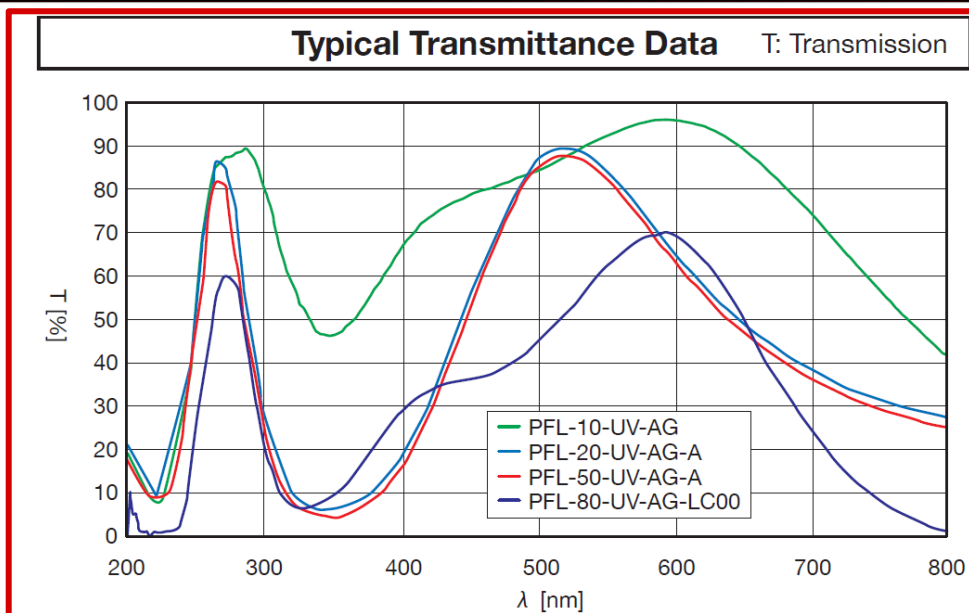
'Better Quality & Lower Price'



# UV Objectives

@ 266nm

@ 532nm



✓ High Resolution

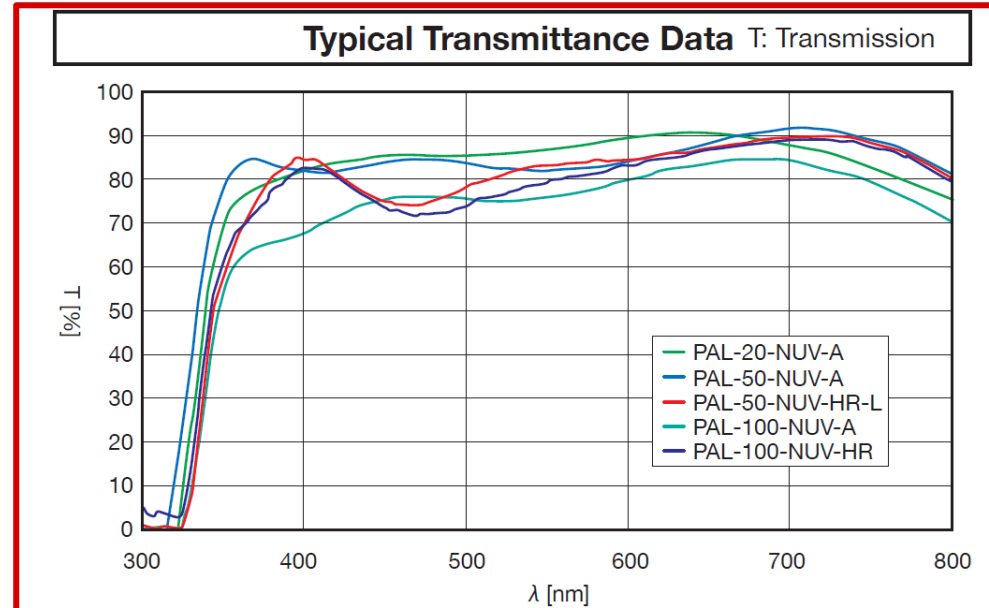
✓ Suppression of chromatic aberrations

| P/N               | Mag  | f [mm] | NA   | WD [mm] | Res [ $\mu\text{m}$ ; @ 550 nm] | f depth [ $\mu\text{m}$ ; @ 550 nm] | Weight [kg] | Price [€] |
|-------------------|------|--------|------|---------|---------------------------------|-------------------------------------|-------------|-----------|
| PFL-10-UV-AG      | 10 x | 20     | 0.2  | 13.5    | 1.40                            | $\pm 6.9$                           | 0.3         | 8 142,9€  |
| PFL-20-UV-AG-A    | 20 x | 10     | 0.36 | 15.07   | 0.76                            | $\pm 2.1$                           | 0.35        | 7 542,9 € |
| PFL-50-UV-AG-A    | 50 x | 4      | 0.42 | 12.0    | 0.65                            | $\pm 1.6$                           | 0.41        | 8 228,6€  |
| PFL-80-UV-AG-LC00 | 80 x | 2.5    | 0.55 | 10.0    | 0.50                            | $\pm 0.9$                           | 0.35        | 11 142,9€ |

# NUV (Near UV) Objectives

@ 355nm

➤ Laser Machining



✓ High NA

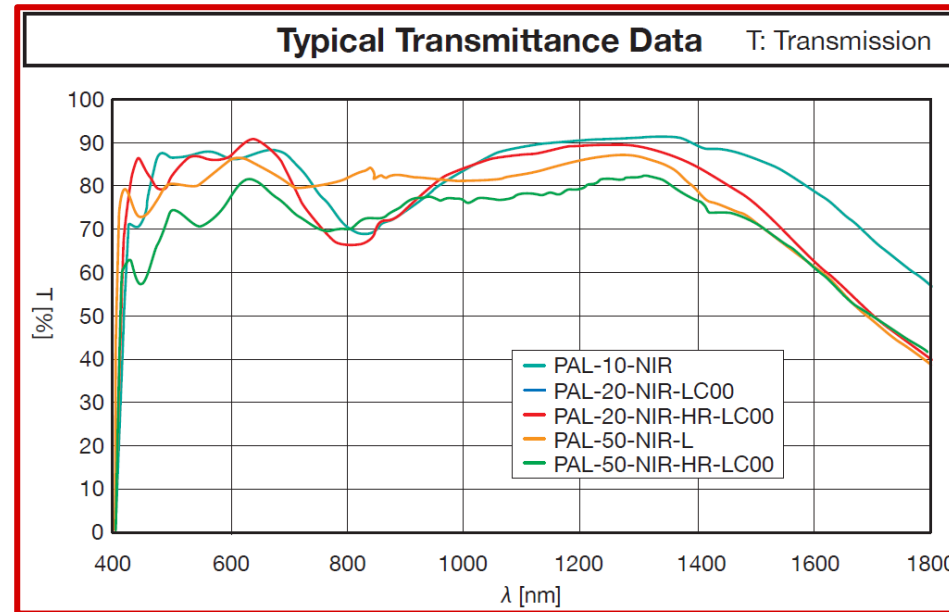
✓ Suppression of chromatic aberrations

| P/N             | Mag   | f [mm] | NA   | WD [mm] | Res [μm; @ 550 nm] | f depth [μm; @ 550 nm] | Weight [kg] | Price [€] |
|-----------------|-------|--------|------|---------|--------------------|------------------------|-------------|-----------|
| PAL-20-NUV-A    | 20 x  | 10     | 0.4  | 17.25   | 0.69               | ± 1.7                  | 0.35        | 3 042,9€  |
| PAL-50-NUV-A    | 50 x  | 4      | 0.45 | 15.1    | 0.61               | ± 1.4                  | 0.36        | 3 857,10€ |
| PAL-50-NUV-HR-L | 50 x  | 4      | 0.65 | 10.0    | 0.42               | ± 0.65                 | 0.51        | 12 000€   |
| PAL-100-NUV-A   | 100 x | 2      | 0.57 | 11.23   | 0.48               | ± 0.8                  | 0.38        | 4 714,3€  |
| PAL-100-NUV-HR  | 100 x | 2      | 0.70 | 10.0    | 0.39               | ± 0.6                  | 0.53        | > 20 000€ |

# Infrared (NIR) Objective Lenses

Coaxial Observation

Femto Second Laser



YAG Laser

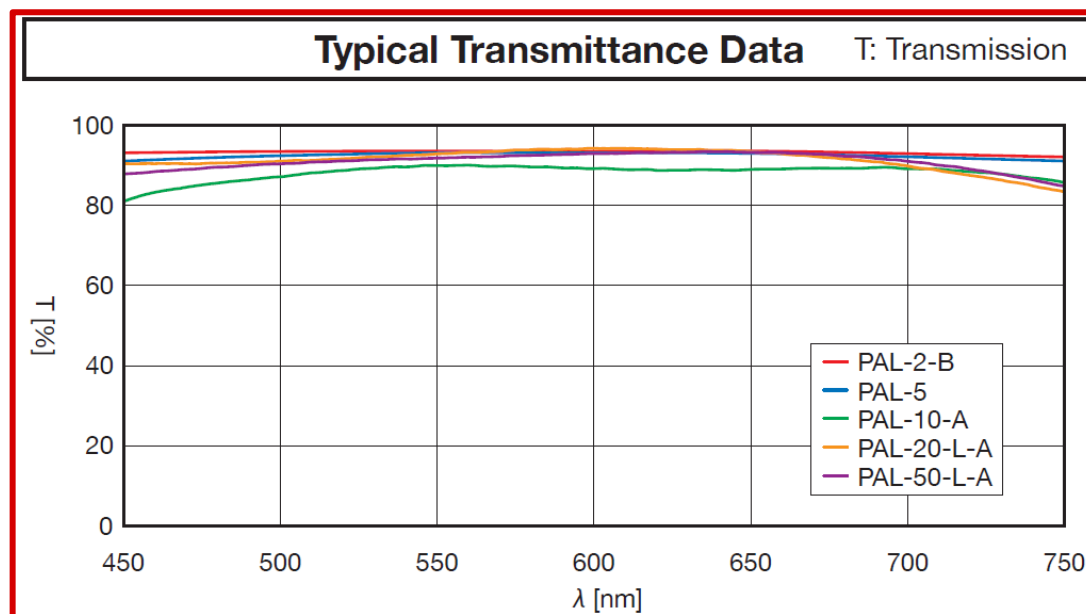
Infinity Corrected

| P/N                | Mag  | f [mm] | NA   | WD [mm] | Res [ $\mu\text{m}$ ; @ 550 nm] | f depth [ $\mu\text{m}$ ; @ 550 nm] | Weight [kg] | Price [€] |
|--------------------|------|--------|------|---------|---------------------------------|-------------------------------------|-------------|-----------|
| PAL-10-NIR         | 10 x | 20     | 0.30 | 31.0    | 0.92                            | $\pm 3.1$                           | 0.30        | 942,90    |
| PAL-20-NIR-LC00    | 20 x | 10     | 0.40 | 20.0    | 0.69                            | $\pm 1.7$                           | 0.36        | 1.714,30  |
| PAL-20-NIR-HR-LC00 | 20 x | 10     | 0.45 | 20.2    | 0.61                            | $\pm 1.4$                           | 0.42        | 1.714,30  |
| PAL-50-NIR-L       | 50 x | 4      | 0.45 | 15.1    | 0.61                            | $\pm 1.4$                           | 0.34        | 2.571,42  |
| PAL-50-NIR-HR-LC00 | 50 x | 4      | 0.67 | 10.0    | 0.41                            | $\pm 0.61$                          | 0.48        | 4.714,30  |

# Long Working Distance Objective Lenses (PAL)

Long Working Distance

Laser Machining



Pulsed THG (@355nm)  
YAG Laser

High Transmittance

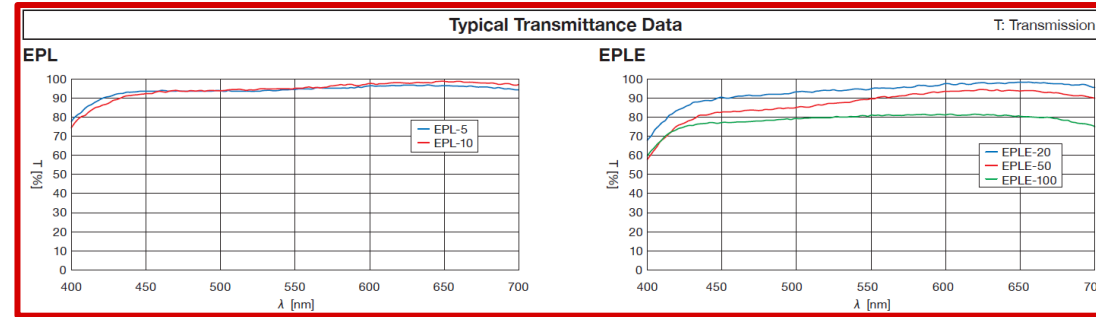
| P/N        | Mag  | f [mm] | NA    | WD [mm] | Res [μm; @ 550 nm] | f depth [μm; @ 550 nm] | Weight [kg] | Price [€] |
|------------|------|--------|-------|---------|--------------------|------------------------|-------------|-----------|
| PAL-2-B    | 2 x  | 100    | 0.055 | 34.0    | 5                  | 91                     | 0.25        | 505,70    |
| PAL-5      | 5 x  | 40     | 0.14  | 41.0    | 2                  | 14                     | 0.24        | 308,60    |
| PAL-10-A   | 10 x | 20     | 0.3   | 34.0    | 0.92               | 3.1                    | 0.24        | 420,00    |
| PAL-20-L-A | 20 x | 10     | 0.3   | 31.1    | 0.92               | 3.1                    | 0.28        | 1114,30   |
| PAL-50-L-A | 50 x | 4      | 0.42  | 20.7    | 0.65               | 1.6                    | 0.31        | 1.697,10  |



# Long Working Distance Objective Lenses (EPL\_E)

Long Working Distance

100x Magnification



Coaxial Observations

Focus Visible Laser

| P/N       | Mag | NA   | WD [mm] | f [mm] | Res [ $\mu$ m] | f depth [ $\mu$ m] | Weight [kg] | Price [€] |
|-----------|-----|------|---------|--------|----------------|--------------------|-------------|-----------|
| EPL-5     | 5   | 0.13 | 11.6    | 40     | 2.1            | $\pm 16.3$         | 0.085       | 308,60    |
| EPL-10    | 10  | 0.30 | 6.4     | 20     | 0.9            | $\pm 3.1$          | 0.085       | 401,10    |
| EPL_E-20  | 20  | 0.40 | 11.1    | 10     | 0.7            | $\pm 1.7$          | 0.074       | 925,70    |
| EPL_E-50  | 50  | 0.55 | 8.2     | 4      | 0.5            | $\pm 0.9$          | 0.084       | 1.200,00  |
| EPL_E-100 | 100 | 0.80 | 2.0     | 2      | 0.3            | $\pm 0.4$          | 0.105       | 2.160,00  |

# Our Specials



## LONG WORKING DISTANCE

- Optical magnification: from 1.25x to 50x
- Working distance: from 14mm to 46.2mm
- Resolution ( $\lambda=0.55\mu\text{m}$ ): from 11.18 $\mu\text{m}$  to 0.75 $\mu\text{m}$
- Numerical Aperture: from 0.03 to 0.45



## ULTRA LONG WORKING DISTANCE

- Optical magnification: from 0.58x to 15x
- Working distance: from 101mm to 206mm
- Resolution ( $\lambda=0.55\mu\text{m}$ ): from 24 $\mu\text{m}$  to 1.7 $\mu\text{m}$
- Numerical Aperture: from 0.014 to 0.08



## FRONT CONVERTER

- Compatible with UZOL-7 objective
- Optical magnification: from 0.23x to 4.48x
- Working distance: from 305mm to 502mm
- Resolution ( $\lambda=0.55\mu\text{m}$ ): from 55.9 $\mu\text{m}$  to 0.032 $\mu\text{m}$
- Numerical Aperture: from 0.006 to 0.052



## REAR CONVERTER

- Compatible with each objective
- Magnification increased without changing the working distance or objective
- Magnification: from 1.5x to 2x

- Do you need a longer working distance?
- Would you like to increase the magnification without changing the working distance or objective lens?
- In addition to our 5 objective lens choices, you can improve some features by adding converters.

## Ultra Long Working Distance

Change one Specification

‘Keep the other ones’



# Our Custom

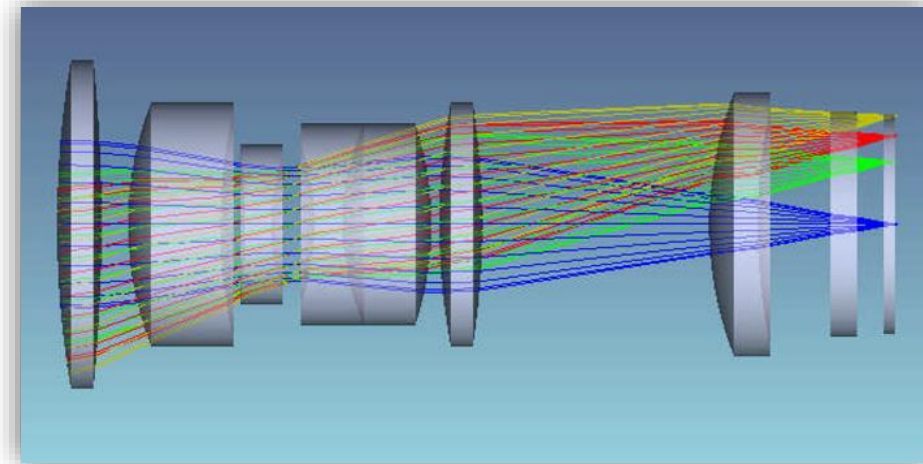
Need a special design ?  
Looking for an OEM Solution ?

Customize Your Objectives !

- Initial cost for designing : 50-100K€
- Stable Lead Times
- Guaranteed quality
- Inspection report
- OEM Customer Service

We have more than 40 years of experience in optical design / optical manufacturing / opto-mechanical manufacturing.

We can help you **design** your objective for your application, and **manufacture** for large and small quantities.



# Our Systems : Zoom Microscope

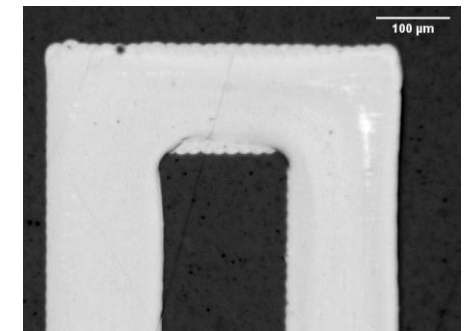
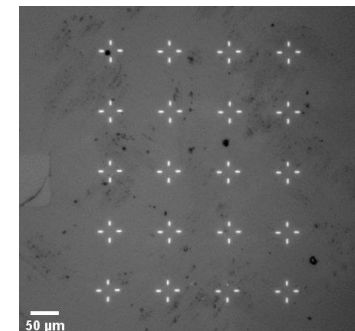
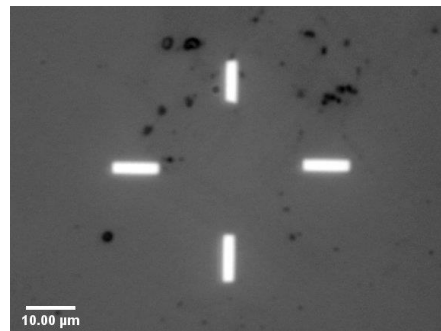
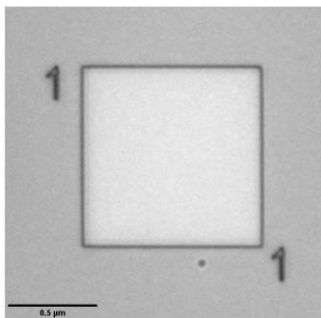
Long Working Distance  
From 14mm to 500mm

Various Magnifications  
From 0.23x to 50x



Quick & Easy  
Sample Analysis

Home Made Objectives  
ZOL & UZOL





# Interested ? Contact Us !



## See you soon !

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