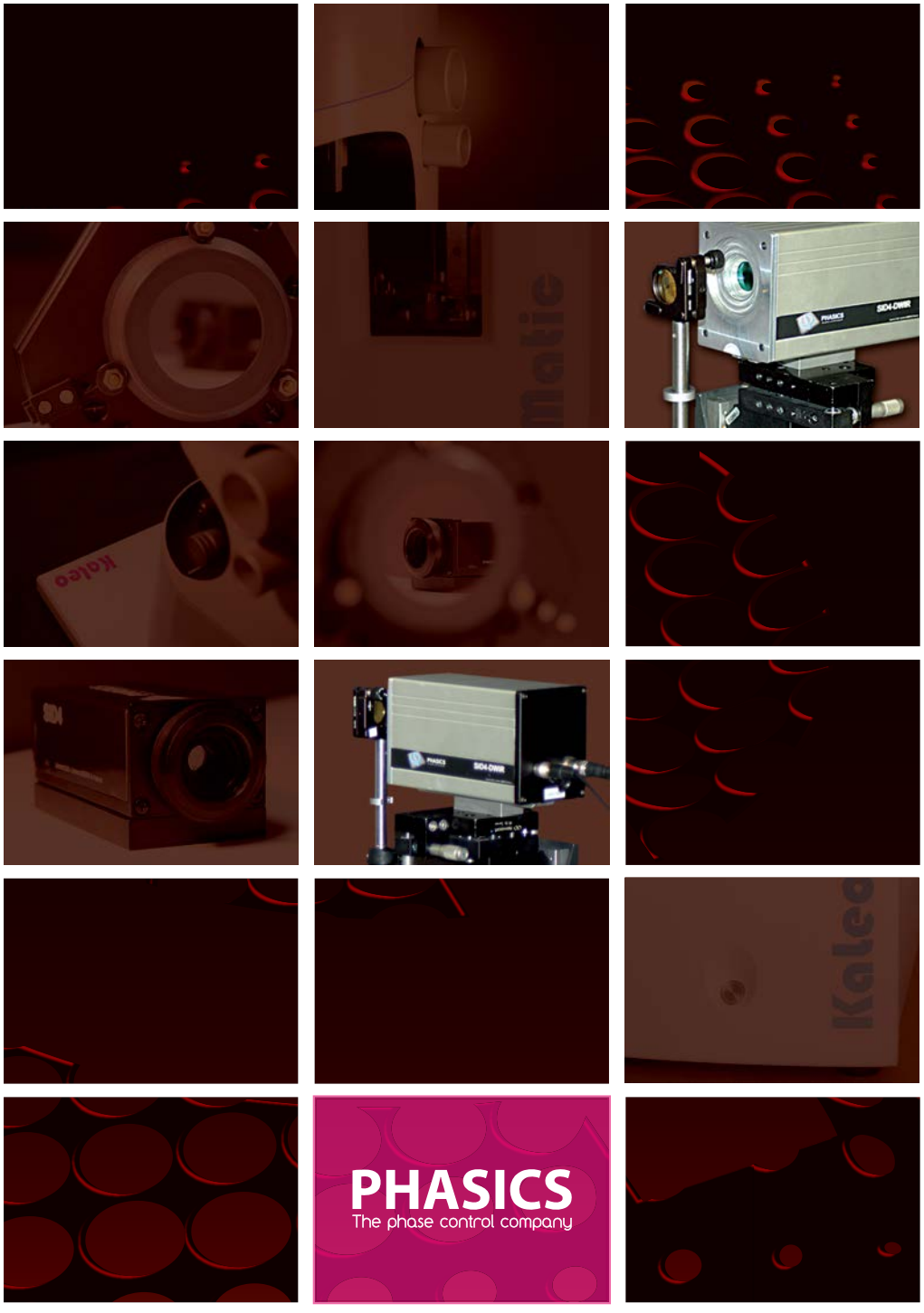
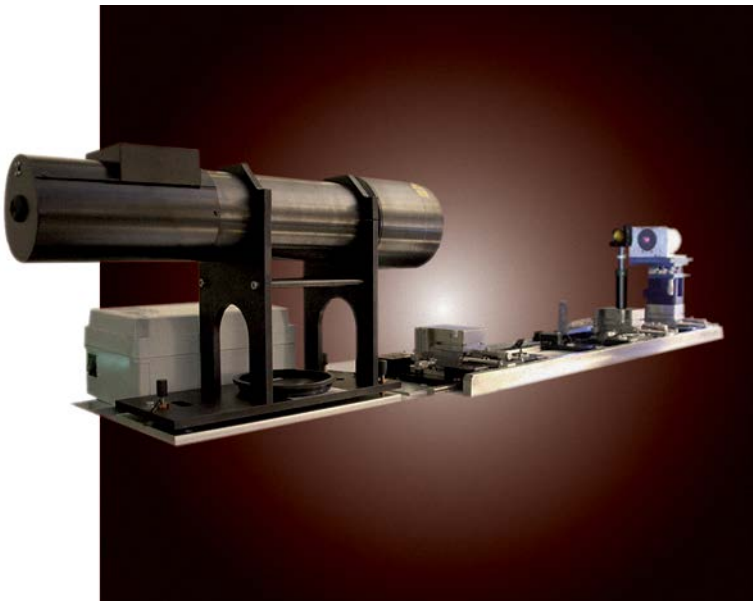
Kaleo **Bench-IR**



Kaleo **Bench-IR**



→ PHASICS creates the revolution in **infrared optics quality control** with the Kaleo Bench-IR series. These innovative benches offer both **MTF and wavefront quality** (aberrations, WFE) **in one single fast acquisition**. They cover the full IR range from **1.2 µm to 14 µm**.

Their unique patented technology of unrivalled high resolution and sensitivity ensures an **accurate characterization** while **simplifying set-up and alignment**.

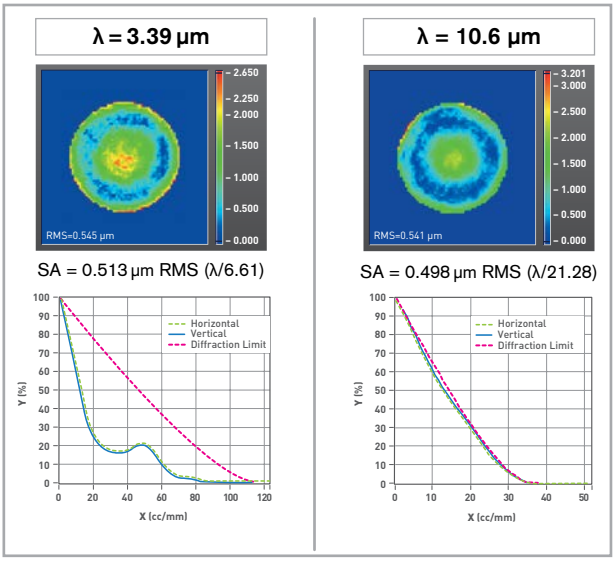
"MTF & WAVEFRONT ERROR WITH ONE BENCH"

↘ GET THE MTF...

- Along any direction
- For any pupil size
- On and off-axis
- Up to cut-off frequency
- With various focusing methods

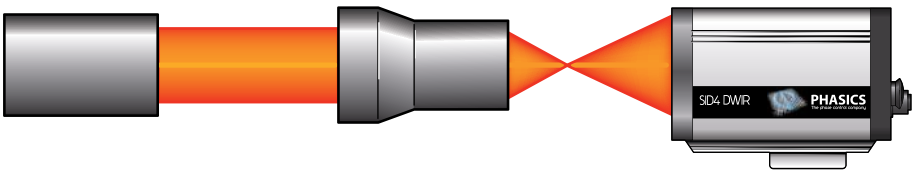
... AND MORE

- EFL, F#, NA
- Aberrations: Zernike, Seidel
- Real time filtering of phase map (Zernike, Kernel…)
- Chromatic aberrations
- TF MTF for any pupil size
- Comparison to design



Chromatic behaviour measured with one unique sensor on a ZnSe lens of 25.4 mm diameter. The focal spot shifts 560 µm due to refractive index dispersion.

BENCH FOR INFRARED OPTICS TESTING



Collimated source quality of λ/20 PV

Optical component under test

PHASICS wavefront sensor

Simple direct set up with Phasics unique sensor

Applies to lens, objective, zoom, strongly aberrated subassembly.

↓ UNIQUE TECHNOLOGY

• **High resolution & high sensitivity** for robust calculations and small defects detection

• **High dynamics** for testing & matching strongly aberrated optics subassemblies

• **True achromaticity** through the full IR range for chromatic response testing

• **Direct measurement up to F/1**

... for a simple set-up

- No relay lens
- Easy to align
- Cost effective

... for an easy interpretation

- Measurement in working conditions
- Rigorous calculation
- Results in any plane (best focus, paraxial)

→ FULLY INTEGRATED BENCH

• Powerful software with optional modules such as Design Pro for rigorous comparison to design files and RetroPro for characterization in the exit pupil

• Closed structure & motorization for safety compliance

	Flexible characterization at 3.39 & 10.6 µm	High resolution characterization at 10.6 µm	Chromatic high sensitivite characterization in MWIR region
	DWIR	**LWIR**	**IR-MCT**
Source	HeNe laser and/or CO_2 laser	CO_2 laser	Black body with spectral filters
Entrance pupil diameter	Up to 100 mm		
Maximum aperture	F/1		
Detector technology	Micro bolometer	Micro bolometer	Cooled MCT
Wavelength range	3 - 5 µm & 8 - 14 µm	8 - 14 µm	1.2 - 5.5 µm
Phase spatial resolution	140 µm	100 µm	60 µm
Phase sampling	96 x 72	160 x 120	160 x 128
Sensibility	25 nm RMS	25 nm RMS	3 nm RMS