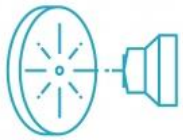
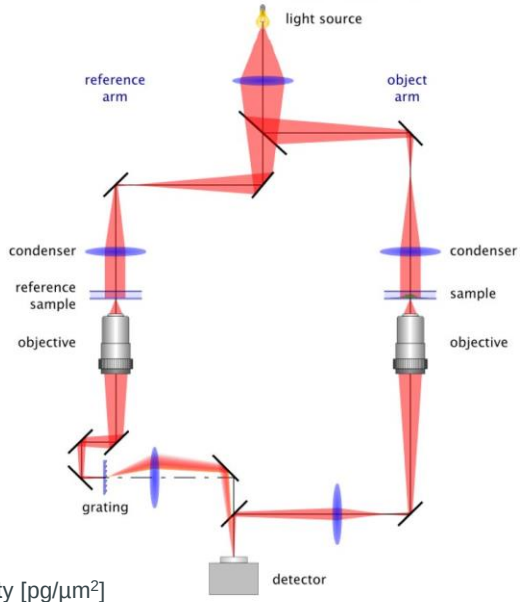
Q-Phase (Telight)

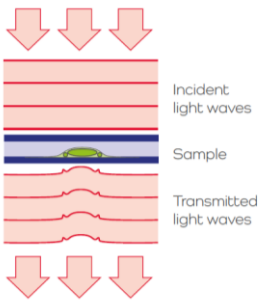
Holographic Incoherent-light-source Quantitative Phase Imaging

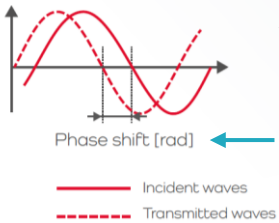


Quantitative Phase Imaging (QPI) provides precise, label-free measurement of phase shifts caused by samples.
The **Q-Phase** system uses a 660 nm LED, splitting the light into two paths: one passes through the sample and the other through a reference. When recombined, they create a hologram that captures both amplitude and phase information.
In cell biology, QPI is highly valuable as phase shifts correlate directly with cell dry mass—an accurate, sensitive indicator of cell health and behavior.
Q-Phase also features a fluorescence module, enabling direct correlation between phase and fluorescence images for comprehensive, multimodal analysis.



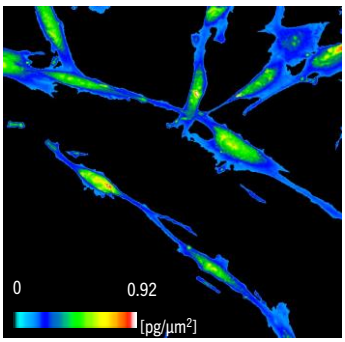
Precise quantification of cell dry mass



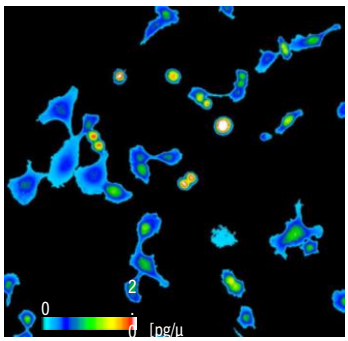


$$m = \frac{\varphi\lambda}{2\pi\alpha}$$

m … cell dry mass density [pg/µm^2]
φ… detected phase value [rad]
λ … wavelength [µm]
α … specific refraction increment [0.18 µm^3 /pg]



Primary human cells



Human fibrosarcoma cell line, HT1080

Key Features and Applications

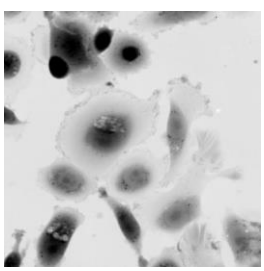
- **Live-cell imaging**: Low phototoxicity, ideal for long-term time-lapse, Z-stacks, and multi-field studies
- **Real-time quantification**: Direct measurement of cell dry mass distribution
- **Accurate cell segmentation & tracking**: Clear background and precise cell boundary detection
- **Multimodal imaging**: Overlay phase and fluorescence data
- **Imaging in scattering matrices and turbid media**
- **High contrast and visualization of cellular compartments**
- **Comprehensive data analysis software**

Objective lenses

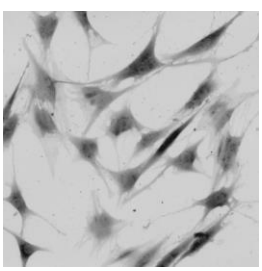
- 4x Plan Achromat, NA 0.1, WD 30 mm
- 10x Plan Fluor, NA 0.3, WD 16 mm
- 20x Plan Fluor, NA 0.5, WD 2.1 mm
- 40x Plan Apo, NA 0.95, WD 0.17-0.25 mm

Fluorescence

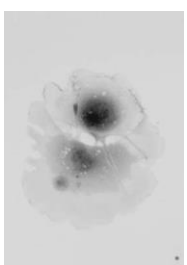
- DAPI/FITC/TRITC/Cy5
- GFP/mCherry



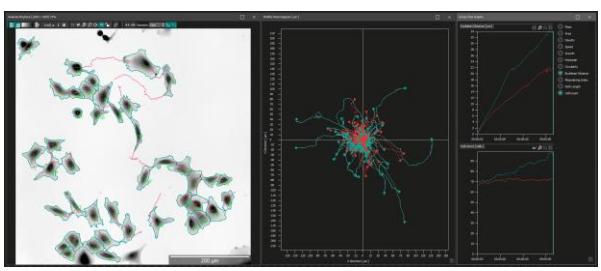
Cell linePC-3



Human chondroblasts



H. embryonal fibr.



Cell segmentation, tracking and analysis

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