OPTOELECTRONIC SYSTEMS FOR NEXT GENERATION SEQUENCING.
ILLUMINATE, ENLARGE, DETECT.
OPTOELECTRONIC SYSTEMS FOR NEXT GENERATION SEQUENCING.

Illuminate – enlarge – detect: Berliner Glas offers the complete range of photonics products for Next Generation Sequencing, all from one source.

**Illumination**
There is no way to effectively detect something without a custom-made illumination. Berliner Glas satisfies customer expectations with its high-performance light source modules. This includes various versions and light sources. In addition to our high degree of expertise of classic halogen and xenon lamps, Berliner Glas also possesses excellent know-how in the area of LED technologies – both white light as well as RGB and special wavelengths. We can also create special products tailor-made to our customer’s specifications. Based on our optical knowledge, we are able to effectively handle the large emission angle of LED and to couple photons efficiently with markers. At the same time, we know how to effectively separate the illumination beam from the emitted signals.

**Enlargement**
Berliner Glas possesses excellent know-how with regards to the development and production of precision lenses. In-house technologies like the alignment turning process and knowledge of how to compensate for production tolerances allow us to manufacture diffraction-limited systems. Berliner Glas has its own coating department. There, our coating developers work hand in hand with the process engineers. Our coating systems represent the latest technology. The technological options we have ensure that Berliner Glas can provide world-class lenses.

**Detection/Camera**
The effective detection of signals forms the end of our range of optical products. In cooperation with partners, Berliner Glas has the ability to provide customer-specific as well as unusual sensors in small quantities over a long product life cycle. Of course, electronic integration and software programming are included. We can provide, for example, thermally-stabilized cameras with high resolution for low background noise.

Berliner Glas is ISO 9001, ISO 14001 and ISO 13485-certified.

**TECHNOLOGIES**
- Illumination
- Excitation
- Beam guidance
- Lenses
- Detection

**PROPERTIES**

### Illumination
- **Light sources**: LED RGB or white, xenon, halogen
- **Reverse polarity protection**: optional
- **Temperature monitoring**: optional
- **Current monitoring**: optional
- **Luminous flux configuration**: customer-specific controls available and upon demand
- **Fan control**: optional
- **Remote control**: USB 2.0 interface
- **Dimensions (L x B x H)**: 48 x 50 x 120 mm (example)
- **Weight**: starting at ca. 200 g
- **Active cooling**: optional
- **Operating temperature**: 0–40 °C
- **Operating height**: max. 2,000 m
- **Storage temperature**: -20–60 °C
- **Humidity**: 30–90 %, non-condensing

### Detection/Camera*
- **Connection**: GigE, USB 2.0, USB 3.0
- **Thermal stabilization**: upon request
- **Connection for trigger**: optional
- **Frame rate**: ≥ 6 frames/s
- **Illumination**: e.g. LED 220 mW/m2
- **Wavelength**: 480–750 nm
- **Exposure times**: 0.08–1.2 s
- **Ambient temperature**: up to 45 °C

* Example system for Next Generation Sequencing