



## Prisms for a brilliant 3D cinema experience

### New version of glass SCHOTT N-BK7HT offers the highest transmission for digital projection

**Mainz (Germany), May 6, 2010 – The future of cinema is digital and three-dimensional. The epic 3-D film Avatar has raked in global revenue of 2.7 billion dollars since December 2009. It already ranks as the single most successful movie of all time. Projecting it onto screens that are around 30 meters in width calls for a luminous flux of 27,000 lumens or more. Prisms made of special glass offer high light yield and deliver a perfect picture. SCHOTT has now developed a glass for this application that exhibits extremely high transmission in the visible wavelength range.**

The movie magazine Cinema reported that, “This isn’t a movie that people watch, but rather experience,” on James Cameron’s “Avatar – Return to the World”. The viewer dives into a fascinating world that has never been shown more realistically or brilliantly ever before. This cinema experience is intensified by a three-dimensional presentation in which everything appears to be within reach and the spatial depth can be felt on the large screen. This type of 3-D presentation is made possible by digital projection.

In order to be able to illuminate a picture that is 30 meters in width with the same exact precision, the movie projector has to be able to deliver a luminous flux of 27,000 lumens or more. This requires a strong light source. A color filter prism made of highly transparent glass separates its white light into the color components Red, Green, and Blue (RGB) and directs it onto optical semiconductors. These reflect the light onto the lens of the projector with the help of up to two million individually steerable micromirrors that present the film to the viewing audience in its full clarity.

SCHOTT has now developed a version of its N-BK7 glass that offers extremely high transmission (HT) especially for the

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prisms used in digital projectors. The new N-BK7HT guarantees a minimum transmission of 99.6% at a wavelength of 400 nm and a thickness of 25 mm. Within the visible spectrum range of between 400 and 700 nm, the absorption coefficient is three times lower than with standard N-BK7. This means less heat is generated and the risk of image errors is much lower.

SCHOTT continually works on improving the properties of its glasses and expanding the range of possibilities with respect to processing. In addition, being able to offer sound advice on applications provides the basis for the success of SCHOTT. By expanding its prism manufacturing capabilities, the international technology group is not only in a position to produce the appropriate raw glass products, but also polished or coated prisms, for instance, of up to 200 mm in size. With smaller dimensions, surfaces with a flatness of up to  $\lambda/10$  and quality of up to 20/10 (Scratch & Dig) can be achieved. In addition, prisms can be coated according to our customer's needs, for example with dichroic or anti-reflective coatings.

N-BK7 and N-BK7HT are suited for manufacturing highly homogenous optical components of up to 1 meter in diameter. Highly transparent N-BK7HT is also ideal for use in components in which light needs to travel inside the material for distances of up to 150 mm and more, like prisms, for example. Even when exposed to solar radiation with a UV portion, the properties of this glass change only very slightly. It is therefore ideally suited for use in concentrator photovoltaics as well.

SCHOTT AG will also be presenting other innovations at its booth D12 in hall 3 at this year's OPTATEC.

*SCHOTT is an international technology group that sees its core purpose as the lasting improvement of living and working conditions. To this end, the company has been developing special materials, components, and systems for over 125 years. The main areas of focus are the household appliances industry, pharmaceuticals, solar energy, electronics, optics, and the automotive industry. The SCHOTT Group is present in close proximity to its customers with production and sales companies in all its major markets. The Group's approximately 17,400 employees generated worldwide sales of*

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approximately 2.3 billion euros in the fiscal year 2008/2009. The company's technological and economic expertise is closely linked with its social and ecological responsibility. SCHOTT AG is an affiliate of the Carl-Zeiss-Stiftung (Foundation).

Number of characters: 3,611 (including empty spaces)

Download link to a ZIP file that contains this photograph in printable quality: <http://www.schott-pictures.net/presskit/43141.NBK7HT-EN>



Photo no. 21440: SCHOTT developed the highly transparent glass N-BK7HT for use in manufacturing homogenous optical components in which light travels long distances, such as prisms, for example. Source: SCHOTT

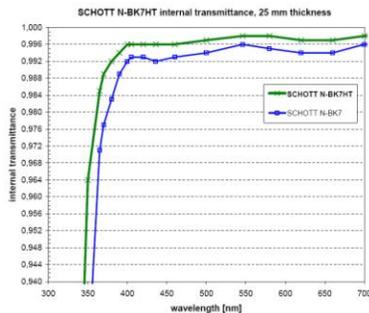


Photo no. 37254: SCHOTT N-BK7 glass is extremely homogeneous and offers high light yield. The N-BK7HT version offers extremely high transmission (HT) of over 99.6 percent. Source: SCHOTT

More press photographs are available for downloading from: [www.schott-pictures.net](http://www.schott-pictures.net)



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