Press information

Leica Noctilux: the ‘Light Giants’ have turned 50 – and are as young as ever before!

In October 2016, Leica Camera AG is celebrating the 50th anniversary of the legendary Noctilux lenses

Wetzlar, 4 October 2016. 50 years ago, the first Leica Noctilux lens was presented at photokina 1966 and astounded visitors to the fair and the industry press with its revolutionary optical properties.

In the 1960s, photography enjoyed enormous popularity around the world and the demand on high-performance lenses constantly rose, particularly in the ranks of professional and art photographers. As the use of flash was not yet widespread, or even frowned on, the extraordinary specifications of the Noctilux lens attracted almost undivided attention. This lens offered, for those days, a gigantic maximum aperture, but not only that, even wide-open an exceptional optical performance. The signature of the Noctilux lens was characterised by unique contrast rendition. Brilliant and sharp pictures without flare could be realised with the lens wide open. Even in candlelight, subtle colour nuances, finest textures and details became recognisable that, with other lenses, remained hidden in the darkness.

The Leica Noctilux 50 mm f/1.2 (1966)

The most outstanding feature of the Noctilux launched in 1966 was the two aspherical elements, the first time such elements had been used in a serial production lens manufactured by Leitz. One of these two asphericals was made from special glass with a high refractive index. The task of the asphericals was to reduce chromatic aberration at

maximum aperture and increase quality in the image field. The Noctilux 50 mm f/1.2 was a design by Prof. Dr. Helmut Marx and comprised six elements in four groups, with the asphericals as the first and last elements.

At that time, the production of asphericals was a particularly complex and costly process. Even the most innovative new machines were no alternative to the experienced precision optical engineers who had to give each element its final polish completely by hand. At the same time, new testing methods also had to be developed to assure the quality of the lenses.

The Leica Noctilux-M 50 mm f/1.0 (1975)

At Leitz, every effort was made to achieve the ultimate aperture of f/1.0. Simultaneously, Leitz turned to the use of only spherical lens elements in an attempt avoid the almost prohibitive costs of producing asphericals. Both challenges were successfully mastered at Leitz Canada by lens designer Dr. Walter Mandler, which enabled Leitz to launch the new Noctilux-M 50 mm f/1.0 in 1975. The glass employed in the construction of this lens had an exceptionally high refractive index that contributed significantly to its impressive imaging performance and the extremely natural look of pictures captured with the lens. Where photographers using competing manufacturers' large aperture lenses were forced to stop down to produce acceptable results, the Noctilux was able to be used wide open – not only in theoretical, but also in practical terms.

Even wide open, the Noctilux-M 50 mm f/1.0 also impressed with the consistent resolution, plastic rendition of details and the clear and finely nuanced colours it delivered in pictures. Considering that this was even the case in situations where other lenses were incapable of gathering enough light to even correctly expose the film, it soon becomes clear what a remarkable masterpiece of optical engineering the Noctilux-M 50 mm f/1.0 actually was.

The Leica Noctilux-M 50 mm f/0.95 ASPH. (2008)

More than 30 years after the appearance of the Noctilux-M 50 mm f/1.0, which had become a firm favourite of photographers due to its unrivalled aesthetic qualities, Leica presented a new Noctilux at photokina 2008, with a previously unheard-of maximum aperture of f/0.95. Not only this was new, the new lens had also been considerably

improved in other aspects of its optical performance. To achieve this, Leica made best use of the many years of experience gathered in the design and construction of its two predecessors and took advantage of the benefits of the latest research and technologies. Although the production of asphericals remains an extremely elaborate process, it is today much more efficient and, in turn, more practicable than it was in the days of the first-generation Noctilux from 1966.

The optical design of the Noctilux-M 50 mm f/0.95 ASPH. comprises more than eight elements in a symmetrically arranged, Double-Gauss design with its two halves located back-to-back with the aperture between them. Two aspherical elements in this construction ensure the outstanding imaging performance of the lens. Three of the other elements are made from glass with an extremely high refractive index, and a further five from glass with anomalous partial dispersion. To ensure that the Noctilux also delivers outstanding results at closer focusing distances, the construction also features a floating element that shifts the position of the last group in relation to the rest of the system depending on the focusing distance.

The traditional values of the Noctilux also apply to the new lens: the maximum aperture is a usable aperture – it is not necessary to stop down to achieve better imaging performance. The extremely shallow depth of field when shooting wide open is a feature of the Noctilux lens that can be consciously used as a creative tool.

In the words of Peter Karbe, head of the optical development department at Leica: ‘Even today, after 50 years, the Leica Noctilux still stands for extreme lens speed. The ‘Light Giant’ masters situations in which images can be captured only with difficulty, or not at all, by other lenses – and does it with exceptional imaging performance. In combination with its incomparable rendition of colours, rich contrast and the shallow depth of field made possible by its outstanding speed enables photographers to create images with a uniquely fascinating aesthetic.’