The optical microscope is an indispensable tool for the modern life science researcher, and oil immersion objective lenses have the reputation of providing the highest resolution and performance. However, oil immersion lenses are designed for samples mounted in a high refractive index (RI) medium, and performance can suffer greatly if the RI deviates from the expected value. Living biological systems exhibit significantly lower RI not well-matched to oil immersion, resulting in spherical aberration that limits overall performance.

To address this fundamental issue Nikon has committed to developing a new line of silicone immersion objective lenses optimized for live-cell imaging. The refractive index of silicone is much more closely matched to a typical live cell environment compared to oil or water, minimizing spherical aberrations and allowing for the sharpest image possible. Silicone oil also has the added benefit of ultra-low evaporation rates, good for long-term imaging at higher temperatures (including work at 37°C).

Nikon currently offers three different silicone lenses. These lenses additionally feature correction collars for fine spherical aberration correction and a large field number of 25mm, which allows more data to be captured in every image:

- **Lambda S 100XC Sil**
  - (NA = 1.35, WD = 0.3mm)

- ** Lambda S 40XC Sil**
  - (NA = 1.25, WD = 0.3mm)

- **Lambda S 25XC Sil**
  - (NA = 1.05, WD = 0.55mm)

If you would like to learn more about the Nikon Silicone Immersion Series objectives, please visit the product page on our website: [www.microscope.healthcare.nikon.com/silicone](http://www.microscope.healthcare.nikon.com/silicone)