

## Ultra-Micro-Nikkor 28mm F1.7e

The Ultra-Micro-Nikkor 28mm F1.7e lens was designed for manufacturing the integrated circuit and other image reduction technologies. One of the more fantastic and rarer lens for the Ultra-Micro-Nikkor series. This lens has the Leica L39 screw thread.

The Ultra-Micro-Nikkor 28mm F1.7e used 40.5mm accessories. A Nikon 40.5mm reversing adapter is just fit to it. You can see mysterious red coating on the lens.

The rim of the lens is engraved as "Ultra-Micro-NIKKOR 1:1.7 f=28mm M=1/10 e 322382 Nikon" with white painted character.

Therefore, the lens is highly efficient, and a distortion is -0.005 %!!!

You can make the fantastic legend with this Zen black lens.

### Specifications

Focal length 28.7 mm

Max. aperture f/1.7

Lens construction 10 elements in 8 groups

Standard magnification 1/10X

Standard wavelength 546.1 nm (e-line)

Vignetting 0 %

Distortion -0.005 %

Aerial resolving power 700 lines/mm (8 mm circle)

Aerial resolving power 800 lines/mm (6 mm circle)

Image area 8 mm circle

Subject area 80 mm circle

Overall working distance 315 mm

Weight 465 g

## Ultra-Micro-Nikkor 28mm F1.8

This is an extremely special lens manufactured in 1965 by Nippon Kogaku for the semiconductor manufacturing process. These lenses were designed using rare glasses to be diffraction limited at full aperture. These are called "Super Perfect" lenses, as this is as sharp as a lens can possibly be. The rim of the lens is engraved as " M=1/10" with red character. We called Red Pointed Ultra-Micro-Nikkor.

### Specifications

Focal length 28.2 mm

Max. aperture f/1.8

Min. aperture f/8

Lens construction 9 elements in 7 groups

Standard magnification 1/10X

Standard wavelength 546.1 nm (e-line)

Vignetting 0 %

Distortion 0.002

Aerial resolving power 600 lines/mm (8 mm circle)

Aerial resolving power 650 lines/mm (7 mm circle)

Aerial resolving power 700 lines/mm (6 mm circle)

Image area 8 mm circle

Subject area 80 mm circle

Overall working distance 315 mm

Weight 330 g

## Ultra-Micro-Nikkor 55mm F2

The most useful Ultra-Micro-Nikkor is 55mm F2 lens. This lens is excellent very much. Yes, Super fine lens. If you have this lens you become happy.

God of light lives in this lens. Therefore, you will become a happy mood if you have this lens. You can make the great legend with this lens.

### Specifications

Focal length 55.8 mm  
Max. aperture f/2  
Min. aperture f/8  
Lens construction 8 elements in 6 groups  
Standard magnification 1/4X  
Standard wavelength 546.1 nm (e-line)  
Vignetting 0 %  
Distortion 0.000  
Aerial resolving power 500 lines/mm (12 mm circle)  
Image area 12 mm circle  
Subject area 48 mm circle  
Overall working distance 315 mm  
Weight 325 g

## Ultra-Micro-Nikkor 50mm F1.8 h

Enables a number of reduction printings of minute image patterns on a photoresist under h-line monochromatic lighting (wavelength 407.7 milli-micron, or g-line monochromatic lighting (wavelength 435.8 milli-micron), or a combination of both.

Mounted on a photo-repeater, the principal role of this lens is to produce chrome masks (for IC and LSI manufacture) by means of the step-and-repeat method.

Its large 14mm circle image area ideally suits it to the making of photomasks for large pattern unit LSI manufacturing processes.

With its standard 1/5 magnification, the lens guarantees resolving power of 650 lines/mm over a 14mm circle image area (10mm square), 800 lines/mm or more over a 10mm circle image area.

### Specifications

Focal length 49.2 mm  
Max. aperture f/1.8  
Min. aperture f/1.8 fixed  
Lens construction 12 elements in 9 groups  
Standard magnification 1/5X  
Standard wavelength 435.8 nm (g-line)  
Standard wavelength 404.7 nm (h-line)  
Vignetting 0 %  
Distortion 0.002 %  
Aerial resolving power 650 lines/mm (14 mm circle)  
Aerial resolving power 800 lines/mm (10 mm circle)  
Image area 14 mm circle  
Subject area 70 mm circle  
Overall working distance 315 mm  
Weight 700 g

## Ultra-Micro-Nikkor 125mm F2.8

The Ultra-Micro-Nikkor 125mm F2.8 was introduced in 1965 from Nippon Kogaku.

The most beautiful lens in the Ultra-Micro-Nikkor lenses.

The Ultra-Micro-Nikkor 125mm F2.8 consisted of seven elements set in a heavy weight and black painted fat barrel. The Ultra-Micro-Nikkor 125mm F2.8 used 72mm accessories. A Nikon 72mm filter is just fit to her. You can see very beautiful and gorgeous coating on the lens.

The Ultra-Micro-Nikkor 125mm F2.8 is very expensive if you find but also it is hard to find and an unused lens is very difficult. If you mount this super lens on your Nikon camera, you can feel the wind from Neptune.

### Specifications

Focal length 125.0 mm

Max. aperture f/2.8 Min. aperture f/8

Lens construction 7 elements in 6 groups

Standard magnification 1/25X

Standard wavelength 546.1 nm (e-line)

Vignetting 0 %

Distortion -0.3 %

Aerial resolving power 400 lines/mm (28 mm circle)

Image area 28 mm circle

Subject area 700 mm circle

Overall working distance 3364 mm, Weight 695 g

## Ultra-Micro-Nikkor 155mm F4

One of the extra gland lens for the Ultra-Micro-Nikkor series. Someone said that it is the Amida Imagine of the Far East. It was introduced in the 1960's latter period from Nippon Kogaku, Japan. The Ultra-Micro-Nikkor 155mm F4 consisted of seven elements set in a black painted barrel with special 72mm screw thread. The rim of the lens is engraved as " $\beta=1/10$ " with red character.

The Ultra-Micro-Nikkor 155mm F4 used 72mm accessories. A Nikon 72mm filter, for example, a Nikon 72mm L37C filter is just fit to it. You can see very beautiful and mysterious purple coating on the lens. Its large 80mm circle image area ideally suits it to the making of photomasks for large pattern unit LSI manufacturing processes. With its standard 1/10 magnification, the lens guarantees resolving power of 200 lines/mm over a 80mm circle image area, 300 lines/mm or more over a 56mm circle image area.

### Specifications

Focal length 154.4 mm

Max. aperture f/11

Lens construction 7 elements in 4 groups

Standard magnification 1/10X

Standard wavelength 546 nm (e-line)

Vignetting 0 %

Distortion +0.02% (56 mm circle)

Distortion -0.03% (80 mm circle)

Aerial resolving power 300 lines/mm (F4)

Aerial resolving power 200 lines/mm (F5.6)

Image area 56 mm circle (F4), Image area 80 mm circle (F5.6)

Subject area 560 mm circle (F4), Subject area 800 mm circle (F5.6)

Overall working distance 1822 mm, Weight 1,090 g

## Ultra Micro Nikkor 165mm F4

The Ultra Micro Nikkor 165mm F4 is the most graceful lens in the Ultra-Micro-Nikkor series. This lens is called "The Emperor of the Lens". It was introduced in 1970 from Nippon Kogaku. The Ultra Micro Nikkor 165mm F4 consisted of seven elements set in a black painted barrel with 82mm screw thread. Mainly for the production of intermediate negatives required for IC photomask manufacture by the step-and-repeat method, it can also be used to produce photomasks directly from the originals. In addition to its large image area coverage, it performs roughly the same functions as the Ultra Micro Nikkor 135mm F4 and 155mm F4 lenses. As its working distance is almost the same as the 135mm F4 lens, it can be used on the same special camera equipment. This lens has a big feature. A conversion lens is only prepared in this lens by the Ultra-Micro-Nikkor series. The rim of the lens is engraved as "Ultra-Micro-Nikkor 1:4 f=165mm M=1/40 e" with white and red character. The rim of the conversion lens is engraved as " M=1/20 for Ultra-Micro-Nikkor 165mm F4 Nikon JAPAN" with white and red character. The Ultra-Micro-Nikkor 165mm F4 used 86mm filter accessories. You can see very gorgeous and mysterious purple coating on the lens.

## Specifications

### Ultra Micro Nikkor 165mm F4

Focal length 167.8 mm  
Max. aperture f/11  
Lens construction 7 elements in 4 groups  
Standard magnification 1/40X  
Standard wavelength 546.1 nm (e-line)  
Vignetting 0 %  
Distortion +0.02% (56 mm circle)  
Distortion -0.03% (80 mm circle)  
Aerial resolving power 350 lines/mm (F4)  
Aerial resolving power 200 lines/mm (F5.6)  
Image area 56 mm circle (F4)  
Image area 80 mm circle (F5.6)  
Subject area 2,240 mm circle (F4)  
Subject area 3,200 mm circle (F5.6)  
Overall working distance 7,002 mm  
Weight 1,830 g

### Ultra Micro Nikkor 165mm F4 with Conversion Lens

Focal length 169.1 mm  
Max. aperture f/11  
Lens construction 9 elements in 5 groups  
Standard magnification 1/20X  
Standard wavelength 546.1 nm (e-line)  
Vignetting 0 %  
Distortion +0.04% (56 mm circle)  
Distortion -0.01% (80 mm circle)  
Aerial resolving power 350 lines/mm (F4)  
Aerial resolving power 200 lines/mm (F5.6)  
Image area 56 mm circle (F4)  
Image area 80 mm circle (F5.6)  
Subject area 1,120 mm circle (F4)  
Subject area 1,600 mm circle (F5.6)  
Overall working distance 3,678 mm  
Weight 2,200 g

## Macro-Nikkor for MULTIPHOT

Macro-Nikkors are known to have been manufactured of the Nippon Kogaku MULTIPHOT system. The unique Macro-Nikkor consist of 4 lenses made for the Nikon MULTIPHOT system, an advanced photomicrographic device targeted at the scientific laboratory and the medical studies. All Macro-Nikkors are excellent performers and within their specified magnification range will cover up to 4X5 inch large format camera. They are only single-purple-coated, but flare generally is no problem with the MULTIPHOT system. The Macro-Nikkor line is similar to other offerings such as Zeiss Luminar lenses or Leitz Photar lenses in their purposes of use. Each lens is optimized for a restricted range of magnifications, and together they cover the entire range from 1:1 up to 40:1.

### MACRO Nikkor 19mm F2.8 and MACRO Nikkor 35mm F4.5

They are exotic and exciting lenses for the Nikon MULTIPHOT system. The MACRO Nikkor 19mm and 35mm were designed for use in super-microscopy world with RMS microscope thread. It could also be used on your high-end copy system or close-up photography camera if they have RMS microscope thread. I love the MACRO Nikkor 19mm and 35mm very much. Yes, of course I can mount the MACRO Nikkor 19mm and 35mm to Nikon F camera. It's easy to use and with simple operation. The reason is that Nippon Kogaku made a special adapter-ring called "microscope objectives adapter" to be used on a bellows unit mounted L-F ring. If you mount this Super Lens for your close-up photography camera, Canon, Leica, Miranda, Cosina, you can feel the green summer wind.

### MACRO Nikkor 65mm F4.5

The MACRO Nikkor 65mm F4.5 was designed for use in super-microscopy world with L39 Leica thread. One of the most exciting lens for the Nikon MULTIPHOT system. The MACRO Nikkor 65mm F4.5 is not only a high-performance lens but also a beautiful lens. The fine yellow line is painted to the lens barrel with high-quality enamel. If you mount the MACRO Nikkor 65mm F4.5 for your close-up photography camera, you can find the science dream.

### MACRO Nikkor 12cm F6.3

The MACRO Nikkor 12cm F6.3 was designed for use in super-microscopy world with L39 Leica thread. One of the most exciting lens in the Nikon MULTIPHOT system. The MACRO Nikkor 12cm F6.3 is a special high resolution Lens for the landscape photography. Of course close-up photography is his good work. The MACRO Nikkor 12cm F6.3 is able to shoot a far mountain and beautiful scenery. I think that the most fantastic lens in the MACRO Nikkor is a MACRO Nikkor 12cm F6.3. I am so enamored of the MACRO Nikkor 12cm F6.3 super lens that I won't listen to MICRO Nikkor's objections. The engraving of 12cm F6.3 is the PRIDE of Nippon Kogaku.

## COM-Nikkor 37mm F1.4 No. 800001

One of the more fantastic and rare lenses for the CRT Recording-Nikkor series.

Computer Output Microfilm (COM) photography is defined by certain distinct conditions, such as the color, intensity, and contrast of the traced images. These constitute the distinct performance limits of COM-Nikkor lenses. The range of aberration correction is from 400 to 650 nanometers. The contrast between the traces and the screen background is maximized. High resolution is attained by using a large, high-speed aperture, which also takes care of adequate exposure of the fairly high framing speed of moving traces on the CRT. The COM-Nikkor 37mm F1.4 covers a field diameter of 15mm with standard magnification of 1/8X.

The COM-Nikkor 37mm F1.4 consisted of eight elements set in a little heavy weight and silver tiny barrel. The rim of the lens is engraved as "COM-NIKKOR 1:1.4 f=37mm M=1/8 800001 Nikon".

Look!! The number of the lens is 800001. Yes, 800001!! It's the first manufacturing.

Therefore, the lens is highly efficient and a distortion is +0.07%!!!

You can see very beautiful and elegant tiny body of the super recording lens. And, You can make the fantastic legend with this lens.

### Specifications

Focal length 37.2 mm

Max. aperture f/1.4

Min. aperture f/8

Lens construction 8 elements in 6 groups

Usable magnification range 1/7X - 1/10X

Corrected chromatic aberration range 400 - 650 nm

Vignetting 0 %

Distortion +0.07 %

Image size 15 mm dia.

Original size 120 mm dia.

Image distance at standard magnification 351 mm

Weight 300 g

## Regno Nikkor 10cm F1.5 X-Ray Lens, 1946 or 1947

Regno Nikkor 10.5cm F1.5 is a very unusual lens manufactured by Nippon Kogaku immediately after World War II ends. Regno NIKKOR 10cm F1.5 was mounted into the Indirect X-Ray Photography Camera. This lens was developed for the radiography (X-Ray Photography). The character not "Japan" but "Tokyo" is engraved to the rim of the lens. My lens, #21785, was found in Japan, local city Maebashi in Gunma Prefecture. Detail of front engraving on lens is #21785. Yes 21785!!!!

In Japan the date of "21" signified the 21st year of the reign of Emperor Hirohito, which began in 1925, thus the 21st year would be 1946. We called "Showa-21-Nen(year)" in Japan.

Fuketa-san said that Nippon Kogaku started to design a fluoroscopy camera of 6X6cm format, and in October 1947, Nippon Kogaku put it into production.

Is my lens manufacturing during 1946? Or not? It is a grand mystery story.

### Specifications

Unknown, it is a fantasy.

Only understanding is a heavy weight lens!