

### Nikon (Nippon Kogaku) GN AUTO Nikkor 1:2.8 f=45mm "pancake" standard lens

There are only two interchangeable Nikkor lenses that were marked at 45mm focal length. The first was developed and introduced in 1969 called GN-Nikkor ("GN" Stands for Guide number). The GN lens can still be considered as a normal standard lens. As the name suggested, it was developed especially for flash photography as back in those days, automatic flash units weren't available yet and so Nikon developed a solution which actually make use of the lens to couple and provide photographer with an easy calculation for correct flash exposure based on guide number for different distance focused when using the lens. The guide number of older flash bulb being used was simply set on the lens scale and locked in. When it focuses, the lens will also automatically set the appropriate aperture for correct flash exposure. Nikon has also developed a special lens hood for this lens (unusual that lens data was also printed onto the lens hood, HN-4). Besides, it is probably the only Nikkor lens that focuses the other way to its infinity. As electronic flash was soon emerge and provided a wider scope in its application with so many other lenses, this lens with its primary fixed focal length soon find its way out of favor. However, as this ultra-flat Nikkor lens is truly one original conceptual optic pioneered by Nikon and it is now very much favored by many collectors. There are two versions, both are non-Ai lenses, most are titled with Nippon Kogaku but later versions just replaced that with the name, Nikon. The lens has a very simple construction of a 4 elements in 3 group design. Focuses close to 80cm (2.6ft.) but as its main purpose as a lens for flash photography, the minimum aperture has extended down to f/32. It weighs only 150g and measuring only 31mm long. NOTE:- Some later versions may also bear a "C" which signifies the use of improved lens coating onto the lens.

**MORE INFO** and its Technical Specification on the [early versions of GN-Nikkor](#) in MIR. As a matter of a guide; early version may bear serial numbers from 710101 to 746389 (up to 1974); those may have been treated with NIC coating could have been bear with serial number from 760001.



GN-Nikkor was originally only in non-AI, but later spare-AI-ring could be mounted (as in picture). There are 2 versions of GN-Nikkor (pancake-lens) 1. GN-Nikkor, 2. GN-Nikkor.C = both non-AI.



### Nikkor 45mm f/2.8P standard lens

on the 02.2001 at PMA show, Orlando, Florida Nikon did sprung some surprises for the photo community by introducing another all metallic silvery 45mm standard lens again. The lens was followed by a black version in 18.09.2001 which supposedly for matching the colour of the black version of the hybrid (auto and mechanical) [Nikon FM3A](#).

Nikon said "....The lens is targeted at advanced amateur-level photographers looking for a compact manual-focus lens that works well with manual-focus cameras like the Nikon FM3A SLR and was developed in response to popular demand for a black lens to match Nikon's black-bodied camera" in their press release. The MANUAL FOCUS Nikkor lens has removed the GN feature found on the older lens type introduced some 30 years ago with the GN-Nikkor. Replacing the missing feature was the incorporation of a chipset inside the lens where the "P" stands for which permits the tiny pancake size lens to act as the old [MF-Nikkor 500mm f/4.0sP IF-ED super telephoto](#), relaying essential data from lens to camera for all the exposure and metering modes when with any of modern Nikon SLRs (including most Nikon AF and digital SLR cameras). Although I don't intend to compare it with the older GN-Nikkor (other than the focal length and the optical composition of 4 elements in 3 group design that both share); but rather, I would termed it as a separate lens type all together because for the last 30 years, things have changed a lot. The Nikkor 45mm f/2.8 P employs with a classic Tessar-type optical design which has resulted for its comparatively compact, thin dimension. The late birth of this lens has made it enjoyed many benefits though, for an example, Nikon Super Integrated Coating was treated, and it has a rounded diaphragm opening, which makes out-of-focus objects appear more natural. With the built-in CPU, the lens is compatible with all exposure modes of Nikon SLRs currently on the market, including the [Nikon F6](#), [Nikon F5](#), [F100](#), F80, F65 and of course, the classic FM3A cameras where it was designed to complement with. As most mentioned models herein have been discontinued but what about the newer models or Nikon Digital SLRs? With a little restriction on choices of exposure and metering modes (simply locked your aperture to f/22), they should work fine as it is an Ai-S native lens - **with the EXCEPTION** for those Nikon SLRs which treats all those Manual Focus lenses like a non-compatible optic...



**You have everything in this lovely photo - both for this 45mm f/2.8P as well as features offered by a [Nikon FM3A](#) and it takes a creative eye and skill to utilize them.**

**Credit:** Image courtesy of Jeff M, UK, who prefers to stay anonymous. Image copyright © 2006. All rights reserved. Please respect the visual property of the contributing photographer.

The lens has some familiar, traditional Nikon manual focus Nikkor lens features of the old feel, the depth of field scales are colored with infra index as a red dot; the aperture ring is very well presented with a positive grip; but the manual focusing ring can be a disaster because it was so narrow. However, just when I thought Nikon has forgotten how their old Nikkor lenses looks like, this lens serves as a optical piece to remind you they still remembered it may look a little odd when mounted onto a sizable Nikon SLR but for those who may never experience how a GN-Nikkor feels like, this lens also serves to provide you a taste with the old days. Lastly, Nikon did published a series of charts which suggested the use of singular or in combination with many older system accessories where you can explore in such possibilities for your photography. Any more? it was priced rather expensive, just like a collector set.

**Technical Highlights**

- \* Ultra-compact, 17mm thin and 120g in weight - the lightest and most compact modern Nikkor lens today.
- \* Compatible with all exposure modes of CPU-controlled Nikon SLRs
- \* Treated with Nikon Super Integrated Coating which claimed by Nikon offers superior color reproduction, while minimizing ghosting and flare



- \* Incorporating a 7 blades, rounded diaphragm which resulted in out-of-focus elements appear more natural
- \* Provided with a front and rear caps and lens hood (black/Silvery color)
- \* Although feels light in its weight but it has a rather high built quality
- \* Dedicated NC filter (black/Silvery color)
- \* Filter attachment does not rotate while focusing

**Credit:** Image of this comparison shot of a Nikkor 45mm and 50mm AF f/1.8 courtesy of 3stones from Texas, whose [online PORTFOLIO](#) can be accessed at PBase. Image copyright © 2006.



**Technical Specifications for MF-Nikkor 45mm f/2.8P Standard Lens**

**Focal length:** 45mm  
**Lens Type:** Standard lens with built-in CPU, Ai-S  
**Maximum/Minimum aperture:** f/2.8 / f/22  
**Optical construction:** 4 elements in 3 groups  
**Depth of Field Scales:** f/22 (orange); f/16 (blue) and f/8.0 (yellow)  
**Infra Index:** provided by a red dot.  
**Picture angle:** 50°



**Focusing Range:**  
 0.45m (18") to infinity  
**Max. reproduction ratio:** 1/7.6  
**Aperture scale:**  
 f/2.8 to f/22  
**Attachment size:**  
 52mm  
**Dimensions:**  
 Approx. 61.5mm (2.57") dia. x 17mm (0.7")  
**Weight:** Approx. 120g (4.2oz)

**System accessories (supplied):** HB-35 lens hood; NC protective filter, matching colored lens (front and rear) caps.

Focused distance	Depth of field							Reproduction ratio
	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22	
2	1'11" 9/16-2'0" 7/16	1'11" 3/8-2'0" 5/8	1'11" 1/8-2'0" 7/8	1'10" 13/16-2'1" 5/16	1'10" 3/8-2'1" 7/8	1'9" 3/4-2'2" 7/8	1'9"-2'4" 1/8	1/11.1
3	2'10" 7/8-3'1" 1/8	2'10" 7/16-3'1" 11/16	2'9" 13/16-3'2" 7/16	2'9"-3'3" 9/16	2'8" 1/16-3'5" 3/16	2'6" 9/16-3'8" 1/8	2'4" 15/16-4'0" 3/8	1/17.8
5	4'8" 11/16-5'3" 11/16	4'7" 3/8-5'5" 7/16	4'5" 3/4-5'7" 15/16	4'3" 1/2-6'0" 1/8	4'0" 15/16-6'6" 3/16	3'9" 3/16-7'7"	3'5" 1/2-9'5" 3/4	1/31.1
10	8'10" 5/8-11'5"	8'5" 13/16-12'2"	8'0" 1/16-13'4"	7'4" 9/16-15'8"	6'8" 3/4-20'0"	5'10" 9/16-3'7'5"	5'1" 15/16-∞	1/64.2
∞	74'9"-∞	52'5"-∞	37'6"-∞	26'4"-∞	19'3"-∞	13'4"-∞	9'9"-∞	1/∞

Photographic Range With Close-Up Attachments			
Accessories macro	Reproduction ratio	Subject field	Focused distance
Close-Up Lens No. 0	1/30.3-1/6.0	72.7 × 109-14.5 × 21.7 (cm)	148.1-37.2 (cm)
		28.62 × 42.91-5.71 × 8.54 (inch)	58.31-14.65 (inch)
Close-Up Lens No. 1	1/14.7-1/4.9	35.3 × 52.9-11.8 × 17.7 (cm)	74.9-32.0 (cm)
		13.9 × 20.83-4.65 × 6.97 (inch)	29.49-12.6 (inch)
Close-Up Lens No. 2	1/7.4-1/3.6	17.6 × 26.5-8.7 × 13.1 (cm)	41.3-25.7 (cm)
		6.93 × 10.43-3.43 × 5.16 (inch)	16.26-10.12 (inch)
Close-Up Lens No. 1+2	1/5.0-1/2.9	11.9 × 17.8-7.0 × 10.5 (cm)	30.6-22.6 (cm)
		4.69 × 7.01-2.76 × 4.13 (inch)	12.05-8.9 (inch)
PK-series rings	1/5.8-1/1.3	13.8 × 20.7-1.9 × 2.9 (cm)	3.7-1.9 (cm)
		5.43 × 8.15-0.71 × 1.14 (inch)	1.46-0.75 (inch)
PW-series rings	1.1-1.3	2.1 × 3.2-1.8 × 2.7 (cm)	1.9 (cm)
		0.83 × 1.26-0.71 × 1.06 (inch)	0.75 (inch)
Bellows PB-6	1.0-4.5	2.3 × 3.5-0.53 × 0.80 (cm)	1.9-3.1 (cm)
		0.91 × 1.38-0.21 × 0.31 (inch)	0.75-1.22 (inch)
Extension Bellows PB-6E	1.8-9.5	1.3 × 2.0-0.25 × 0.38 (cm)	2-5.4 (cm)
		0.51 × 0.79-0.1 × 0.15 (inch)	0.79-2.13 (inch)

\* The first values are for the PK-11A ring used alone and the other ones for the PK-11A-PK-13 rings used together

Focused distance	Depth of field							Reproduction ratio
	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22	
0.45	0.445-0.455	0.443-0.458	0.44-0.461	0.436-0.465	0.431-0.472	0.423-0.482	0.414-0.495	1/7.62
0.7	0.685-0.716	0.679-0.723	0.67-0.733	0.67-0.748	0.659-0.768	0.622-0.805	0.598-0.854	1/13.11
1	0.966-1.04	0.952-1.05	0.934-1.08	0.909-1.11	0.88-1.16	0.835-1.26	0.787-1.4	1/19.7
1.2	1.15-1.26	1.13-1.28	1.1-1.32	1.07-1.38	1.02-1.46	0.96-1.62	0.9-1.87	1/24
2	1.85-2.17	1.8-2.26	1.73-2.38	1.63-2.59	1.53-2.93	1.39-3.73	1.25-5.6	1/41.4
5	4.13-6.35	3.88-7.18	3.52-8.71	3.13-12.85	2.75-31.99	2.29-∞	1.92-∞	1/106.6
∞	22.8-∞	16-∞	11.4-∞	8-∞	5.9-∞	4.1-∞	3-∞	1/∞

[CLICK here](#) for focusing screen compatibility Chart with most Nikon SLRs

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