FUJINON'S LARGE FORMAT LENSES SORTED BY SERIES

RECTAR

Some historians suggest that World War II really started when Germany invaded the Soviet Union on June 22, 1941. Others consider that it actually started ten years earlier, in 1931, when Japan invaded Manchuria. That was eight years before Germany invaded Poland and England & France declared war, and ten years before Japan attacked the USA at Pearl Harbor and Wake Island. And WWII didn't end when Hitler committed suicide, as many think. It didn't end until Japan surrendered -- with conditions -- on September 2, 1945. A few say that WWII wasn't completely over until the last Japanese soldiers surrendered in 1974! Anyway, in the midst of the War, in 1938, the Fuji Film Company saw potential in the world of optics, and produced lenses and cameras needed by the military. After the War, they slowly rebuilt and started making lenses for various, developing, civilian, photographic companies and businesses. Most were for cameras with formats that had been common in Japan before the war. Fuji named their lenses "Rectar" -- after many well-known German lenses by Steinheil -- which the uninformed called "Rectsr" (because the "a" kinda, sorta, looked like an "s"), and the ignorant call "Rectal" (in an attempt to belittle their quality). Some even claimed that these lenses were filled with water, instead of glass -- no kidding! Undoubtedly, these Fuji lenses were modeled after German, Tessar-type lenses that were common in Japan before the War. There were at least four of Fuji's Rectar lenses that were made for what we nowadays refer to as "large format". The early Rectar lenses were made with uncoated glass, but it is possible that all Rectar lenses were uncoated. Afterall, the first, coated, Japanese lenses did not appear until Minolta produced them in 1947. It might be that when Fuji added coating to their lenses that they changed the name to Fujinar (see below). It is possible that there were other focal lengths than those listed here, but not too likely. The Rectar name was also used on Fuji's early enlarger and camera lenses. If you can find a Rectar, you own a piece of history.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
RECTAR	18cm	?	4.5-64	4/3	?	?	BARREL (56x1mm?)	49mm?	?	It is marked inside the filter ring.
RECTAR	21cm	?	4.5-64	4/3	?	?	BARREL (62x1mm?)	58mm?	?	It is marked inside the filter ring.
RECTAR	25cm	?	4.5-64	4/3	?	?	BARREL (75x1mm?)	67mm?	?	It is marked inside the filter ring.
RECTAR	30cm	?	4.5-64	4/3	?	?	BARREL (90x1mm?)	82mm?	?	It is marked inside the filter ring.

FUJINAR

An evolutionary outgrowth of the Rectar series, the Fujinar series of lenses were Fuji's second series of large format lenses. They changed the name of their lenses from "Rectar" to "Fujinar" in 1954. This early series offers at least four lenses for large format users -- from 180mm to 300mm. All are single-coated Tessar designs (four elements in three groups) with wide apertures of f4.5. All came as in-barrel lenses without shutters. The only probable difference between these lenses and their predecessors -- besides the name -- is the lens coating. These lenses lived on as the later Fujinon in-barrel Tessar lenses (see below). Fuji used the Fujinar name on many of its enlarging, medium format, 35mm and smaller format camera lenses.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
FUJINAR	18cm	?	4.5-64 ?	4/3	?	?	BARREL (56x1mm?)	49mm?	SINGLE	It is marked inside the filter ring. It may be the same, optically, as the SC version. It might have a 56mm screw-mount and be an early version of the later Fujinon 180mm in-barrel lens. It was an inexpensive Tessar design. It is probably exactly the same as the earlier Rectar 18cm, but that might not have been coated.
FUJINAR	21cm	?	4.5-64 ?	4/3	?	?	BARREL (62x1mm?)	58mm?	SINGLE	It is marked inside the filter ring. It may be the same, optically, as the SC version. It might have a 62mm screw-mount and be an early version of the later Fujinon 210mm in-barrel lens. It was an inexpensive Tessar design. It is probably exactly the same as the earlier Rectar 21cm, but that might not have been coated.
FUJINAR	25cm	?	4.5-64 ?	4/3	?	?	BARREL (75x1mm?)	67mm?	SINGLE	It is marked inside the filter ring. It might have a 75mm screw-

										mount and be an early version of the later Fujinon 250mm in-barrel lens. It was an inexpensive Tessar design. It is probably exactly the same as the earlier Rectar 25cm, but that might not have been coated.
FUJINAR	30cm	?	4.5-64 ?	4/3	?	?	BARREL (90x1mm?)	82mm?	SINGLE	It is marked inside the filter ring. It might have a 90mm screw-mount and be an early version of the later Fujinon 300mm in-barrel lens. It was an inexpensive Tessar design. It is probably exactly the same as the earlier Rectar 30c m, but that might not have been coated.

FUJINAR-W

This early series offers at least one lens of 150mm. It is single coated and probably a Tessar design with four elements in three groups. It is unusual to see a Tessar lens with this short of a focal length. But this might explain why the aperture is limited to 6.3 and the lens is designated W. It lived on as the various, later Fujinon W and W S 150mm f6.3 lenses (see below) which were also Tessar type, single-coated lenses.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
FUJINAR-W	15cm	?	6.3-64	4/3	?	?	S0	40.5mm	SINGLE	It is marked inside the filter ring. This is Fujinon's first 150mm lens. It came on a Seikosha #0 shutter which later became Seiko. It was an

										inexpensive Tessar design.

FUJINAR-SC

This early series offers at least three lenses from 180mm to 250mm. All are single coated, Tessar designs with four elements in three groups. All came in Copal #3 shutters. It has been suggested that the "SC" means "Single Coated", but this is unlikely since Fuji had not developed EBC coating at the time, so all of their lenses were single coated. Plus not all of the lenses of this era are marked "SC" even though all of them were single coated. Another "idea" is that the "SC" means "Soft Coated", but that is even sillier since they were not designed as soft-focus lenses. A better idea would be "Shuttered-Copal" or "Synchro-Copal".

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
FUJINAR-SC	18cm	?	4.5-64	4/3 ?	?	?	C3	?	SINGLE	It is marked inside the filter ring. It was probably an inexpensive Tessar design. It may be the same, optically, as the Fujinar 180mm in-barrel lens.
FUJINAR-SC	21cm	?	4.5-64	4/3 ?	?	?	C3	?	SINGLE	It is marked inside the filter ring. It was probably an inexpensive Tessar design. It may be the same, optically, as the Fujinar 210mm in-barrel lens.
FUJINAR-SC	25cm	?	4.7-64	4/3 ?	?	?	C3	?	SINGLE	It is marked inside the filter ring. It was probably an inexpensive Tessar design.

W

There were at least 17 W series lenses from 125mm to 360mm. Most were single coated but two were EBC coated in the later years.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS

W	125mm	121.3mm	5.6-64	6/4	80	210	S0	46mm	SINGLE	It is marked inside the filter ring. It has been seen in different shutters but these were probably after-market modifications.
W	135mm	131.3mm	5.6-64	6/4	80	228	S0	46mm	SINGLE	It is marked inside the filter ring.
W	150mm	143.5mm	6.3-64	4/3	67	198	S0	40.5mm	SINGLE	It is marked inside the filter ring. It was an inexpensive Tessar design and quite probably the same as the earlier Fujinar-W. Why it was designated a member of the W series and not the L series, which are also Tessar designed, is not know.
W	150mm	146.0mm	5.6-64	6/4	80	245	S0	46mm	SINGLE	It is marked inside the filter ring. It is a faster version of the W 150mm 6.3 with two more elements and a larger image circle.
W	150mm	143.5mm	6.3-64	4/3	67	198	S0	40.5mm	SINGLE	It is marked inside the filter ring. It was an inexpensive Tessar design. The Fuji literature suggests that it was EBC coated but this is not the case. Why it was designated a member of the W series and not the L series, which are also Tessar designed, is not known. This is probably because, in reality, it is the same lens as

										the original W 150mm f6.3 which had already been designated as a W series lens.
W	150mm	143.5mm	6.3-64	4/3	67	198	C0	40.5mm	SINGLE	It is marked inside the filter ring. It was probably just a late variant of the W 150mm f6.3 Seiko version.
W	180mm	175.7mm	5.6-64	6/4	80	305	C1	58mm	SINGLE	It is marked inside the filter ring.
W	180mm	175.7mm	5.6-64	6/4	80	305	E1	58mm	SINGLE	It is marked inside the filter ring. It is the same as the W 180mm, but it came with an electronic Copal shutter that has speeds to 32 seconds. It was a special order lens so it is very hard to find.
W	210mm	209.6mm	5.6-64	6/4	80	352	C1	58mm	SINGLE	It is marked inside the filter ring.
W	210mm	209.6mm	5.6-64	6/4	80	352	E1	58mm	SINGLE	It is marked inside the filter ring. It is the same as the W 210mm, but it came with an electronic Copal shutter that has speeds to 32 seconds. It was a special order lens so it is very hard to find.
W	250mm	246.1mm	6.7-64	6/4	80	398	C1	67mm	SINGLE	It is marked inside the filter ring.
W	250mm	246.1mm	6.7-64	6/4	80	398	E1	67mm	SINGLE	It is marked inside the filter ring. It is the same as the W 250mm, but it came with an electronic Copal shutter that has speeds to 32 seconds.

										It was a special order lens so it is very hard to find.
W	300mm	292.9mm	5.6-90	6/4	80	420	C3	77mm	SINGLE	It is marked inside the filter ring.
W	300mm	291.9mm	5.6-90	6/4	70	420	C3	77mm	EBC	It is marked on the lens barrel. It is a somewhat improved version of the W 300mm with EBC coating. For some reason, it was not designated as an NW lens like the 250mm NW which shares the same structure. Go figure!
W	360mm	352.7mm	6.3-90	6/4	80	485	C3	86mm	SINGLE	It is marked inside the filter ring.
W	360mm	351.7mm	6.3-90	6/4	68	485	C3	86mm	EBC	It is marked on the lens barrel. It is a somewhat improved version of the W 360mm with EBC coating. For some reason, it was not designated as an NW lens like the 250mm NW which shares the same structure. Go figure!

W S

This series offers the same features as the W series lenses, and they probably are identical. Like many W series lenses, early W S versions came in Seiko shutters, while later models had Copal shutters. There may have other models and focal lenses in this series, such as 125mm or 360mm, but it doesn't seem to appear in any Fuji literature. It has been suggested that the "S" means "SHUTTER" or "SEIKO", but both of these ideas are unlikely since some of the lenses marked with an "S" used a Copal shutter, and because nearly all of Fuji's lenses that came with a shutter were not marked with an "S". It might be that these lenses were marked "S" do designate a "synchro shutter" or a "special market".

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS

					DEGREES @ f22)					
W S	135mm	131.3mm	5.6-64	6/4	80	228	S0	46mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 135mm.
W S	150mm	143.5mm	6.3-64	4/3	67	198	S0	40.5mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 150mm f6.3.
W S	180mm	175.7mm	5.6-64	6/4	80	305	C1	58mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 180mm f5.6.
W S	210mm	209.6mm	5.6-64	6/4	80	352	C1	58mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 210mm.
W S	250mm	246.1mm	6.7-64	6/4	80	398	S1?	67mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 250mm except that it is in a Seiko shutter (probably a #1).
W S	300mm	292.9mm	5.6-90	6/4	80	420	C3	77mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the W 300mm.

SW

This series offers lenses from 65mm to 300mm. The "SW" stands for "SUPER-WIDE" for their wide covering power. All are single coated with a maximum aperture of f8.0. Still, they are all six element optics that offer a 100 degree angle of coverage, and superb coverage at a reasonable price.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS

SW	65mm	71.0mm	8.0-64	6/4	100	155	S0	52mm	SINGLE	It is marked inside the filter ring. It is a slightly slower version of the SWD 65mm f5.6 lens with fewer lens elements, less covering power, less weight, smaller size, and a lower price.
SW	75mm	82.5mm	8.0-64	6/4	100	181	S0	58mm	SINGLE	It is marked inside the filter ring. It is a slightly slower version of the SWD 75mm f5.6 lens with fewer lens elements, less covering power, less weight, smaller size, and a lower price.
SW	90mm	99.4mm	8.0-64	6/4	100	216	S0	67mm	SINGLE	It is marked inside the filter ring.
SW	90mm	99.4mm	8.0-64	6/6	100	216	S0	67mm	SINGLE	It is marked inside the filter ring. If this lens exists, it is just a transitional lens to the NSW 90mm f8.0. It is an improved version of the SW 90mm with full air-spaced design, like the later NSW, but it lacks EBC coating. It would be difficult to distinquish this version from the earlier SW version.
SW	90mm	99.4mm	8.0-64	6/6	100	216	C0	67mm	SINGLE	It is marked inside the filter ring. It is yet another transitional lens to the NSW 90mm f8.0. It features a Copal shutter,

										but it lacks EBC coating.
SW	105mm	116.9mm	8.0-64	6/4	100	250	S0	67mm	SINGLE	It is marked inside the filter ring.
SW	120mm	133.5mm	8.0-64	6/4	100	290	S0	77mm	SINGLE	It is marked inside the filter ring.
SW	300mm	325.3mm	8.0-64	6/4	100	720	C3	145mm	SINGLE	This is probably just a typo in the Fuji literature. The only 300mm SW that we have actually seen is an f9, not an f8 lens.
SW	300mm	325.3mm	9.0-64	6/4	100	720	C3	145mm	SINGLE	It is marked inside the filter ring. It is an enormous lens in terms of size, cost and weight. It weighed in at over seven pounds! It was a special order lens, and reportedly only three were actually made. Think of it as the F-35 jet fighter of the photographic world.

SW S

This series offers the same features as the SW series lenses, and they probably are identical. There probably were other focal lenses in this series, but it doesn't seem to appear in any Fuji literature. It has been suggested that the second "S" means "SHUTTER" or "SEIKO", but both of these ideas are unlikely since some of Fuji's lenses marked with an additional "S" used a Copal shutter, and because nearly all of Fuji's lenses that came with a shutter were not marked with an additional "S". It might be that these lenses all had synchro shutter or were designated "S" for a special market.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
SW S	75mm	82.5mm	8.0-64	6/4	100	181	S0	58mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the SW 75mm.
SW S	90mm	99.4mm	8.0-64	6/4	100	216	S0	67mm	SINGLE	It is marked inside the filter ring. It is

										probably exactly the same as the SW 90mm.
SW S	120mm	133.5mm	8.0-64	6/4	100	290	S0	77mm	SINGLE	It is marked inside the filter ring. It is probably exactly the same as the SW 120mm.

SWD

The SWD (Super Wide Deluxe) series lenses were the first Fujinon lenses to use their newly developed EBC (Electron-Beam) coating. In fact, the first version of each of these three lens has "EBC" inscribed on the front in green letters. EBC was added due to the large number of elements in these lenses (eight) combined with a fast aperture (f5.6).

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
SWD	65mm	72.2mm	5.6-45	8/4	106	172	S0	62mm	EBC	It is marked inside the filter ring. It is a larger, heavier, faster, and costlier version of the SW 65mm with two extra elements, EBC coating, and more covering power.
SWD	65mm	73.4mm ?	5.6-45 ?	8/6 ?	105 ?	169 ?	S0 ?	67mm ?	EBC	It is marked inside the filter ring. Some Fuji literature indicates that the lens configuration was 8/6, like the later Copal-shuttered version. Who knows if this lens actually existed. This could just be a serious typo in the Fuji literature or perhaps it is a late variant of the original SWD version. If it does exist it might be impossible to physically

										distinquish it unless the filter size changed from the earlier version.
SWD	65mm	73.4mm	5.6-45	8/6	105	169	C0	67mm	EBC	It is marked on the lens barrel.
SWD	75mm	84.6mm	5.6-64	8/4	106	200	S0	67mm	EBC	It is marked inside the filter ring. It is a larger, heavier, faster, and costlier version of the SW 75mm with two extra elements, EBC coating, and more covering power.
SWD	75mm	85.1mm ?	5.6-64	8/6 ?	105 ?	196 ?	S0	67mm ?	EBC	It is marked inside the filter ring. Some Fuji literature indicates that the lens configuration was 8/6, like the later Copal-shuttered version. Who knows if this lens actually existed. This could just be a serious typo in the Fuji literature or perhaps it is a late variant of the original SWD version. If it does exist it might be impossible to physically distinquish it from the earlier SWD version.
SWD	75mm	85.1mm	5.6-45	8/6	105	196	C0	67mm	EBC	It is marked on the lens barrel.
SWD	90mm	101.1mm	5.6-64	8/4	106	238	S0	82mm	EBC	It is marked inside the filter ring. It is a larger, heavier and faster, improved version of the SW 90mm with two extra elements, EBC coating, and more covering power.

SWD	90mm	102.5mm ?	5.6-64	8/6 ?	105 ?	236 ?	S0	82mm ?	EBC	It is marked inside the filter ring. Some Fuji literature indicates that the lens configuration was 8/6, like the later Copal-shuttered version. Who knows if this lens actually existed. This could just be a serious typo in the Fuji literature or perhaps it is a late variant of the original SWD version. If it does exist it might be impossible to physically distinquish it from the earlier SWD version.
SWD	90mm	102.5mm	5.6-64	8/6	105	236	C0	82mm	EBC	It is marked on the lens barrel.

NW

This series offers some improvements over the trusted W series -- such as full air-spaced design and EBC coating.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
NW	105mm	99.8mm	5.6-45	6/6	76	162	C0	46mm	EBC	It is marked on the lens barrel. This is a new style of 105mm lens for Fujinon. It is much smaller and lighter than the previous 105mm lenses, but it has a six element air-spaced design and is a full f-stop faster. It's coverage is just enough for 4x5 film, however. The filter size is substantially smaller than its predecessor.

NW	125mm	120.0mm	5.6-64	6/6	76	198	C0	46mm	EBC	It is marked on the lens barrel. It is a slightly larger and heavier, improved version of the W 125mm with full air-spaced design and EBC coating. The fact that it is simply labeled "W" leads to some confusion. It's hard to know where to list this lens. I'm listing it first because it retained the 46mm filter thread of the earlier W 125mm lenses, but who knows, it might have actually come after the 52mm version.
NW	125mm	120.0mm	5.6-64	6/6	76	198	C0	55mm	EBC	It is marked on the lens barrel. It is a slightly larger and heavier, improved version of the W 125mm with full air-spaced design and EBC coating. The fact that it is simply labeled "W" leads to some confusion.
NW	125mm	120.0mm	5.6-64	6/6	76	198	C0	52mm	EBC	It is marked on the lens barrel. It is the second version of the NW 125mm with a slightly smaller filter thread. The only other change listed in the Fuji literature is a drop in weight of three ounces -- somehow. Except for the filter diameter they are probably

										impossible to tell apart. The fact that it is simply labeled "W" leads to some confusion.
NW	135mm	127.6mm	5.6-64	6/6	76	206	C0	52mm	EBC	It is marked on the lens barrel. It is an improved version of the W and W S 135mm lenses with full air-spaced design and EBC coating. The fact that it is simply labeled "W" leads to some confusion.
NW	150mm	143.0mm	5.6-64	6/6	76	224	C0	55mm	EBC	It is marked on the lens barrel. This is the first version of the NW 150mm. It is an improved version of the W 150mm 5.6 with full air-spaced design and EBC coating. The fact that it is simply labeled "W" leads to some confusion.
NW	150mm	143.0mm	5.6-64	6/6	76	224	C0	52mm	EBC	It is marked on the lens barrel. It is the second version of the NW 150mm with a slightly smaller filter thread. There are no other changes listed in the Fiji literature. Except for the filter diameter they are probably impossible to tell apart. The fact that it is simply labeled "W" leads to some confusion.
NW	180mm	179.1mm	5.6-64	6/6	76	280	C1	67mm	EBC	It is marked on

										the lens barrel. It is an improved version of the W 180mm with full air-spaced design and EBC coating. The fact that it is simply labeled "W" leads to some confusion.
NW	210mm	204.4mm	5.6-64	6/5	71	300	C1	67mm	EBC	It is marked on the lens barrel. The fact that it is simply labeled "W" leads to some confusion.
NW	250mm	228.5mm	6.3-64	6/4	64	312	C1	67mm	EBC	It is marked on the lens barrel. The fact that it is simply labeled "W" leads to some confusion.

NSW

This series offers three lenses that are improved versions of the SW alternatives -- i.e., NEW SUPER WIDE. They are all six element in six group, air-spaced designs with EBC coating and wide covering power. They all still retained the f8 aperture.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
NSW	90mm	99.2mm	8.0-45	6/6	100	216	C0	67mm	EBC	It is marked on the lens barrel. It is an improved version of the SW 90mm with EBC coating. The fact that it is simply labeled "SW" leads to some confusion.
NSW	105mm	116.2mm	8.0-45	6/6	100	250	C0	77mm	EBC	It is marked on the lens barrel. It is a slightly larger and heavier, improved version of the SW 105mm with full air-spaced design

										and EBC coating. The fact that it is simply labeled "SW" leads to some confusion.
NSW	125mm	138.8mm	8.0-45	6/6	96	280	C0	82mm	EBC	It is marked on the lens barrel. It is an improved version of the SW 120mm with full air-spaced design and EBC coating -- and a slightly longer focal length. The fact that it is simply labeled "SW" leads to some confusion.

C

This series offers very small size and lightweight portability. The non-Tessar, four element in four group design is unsurpassed for medium and long range work.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
C	300mm	282.3mm	8.5-64	4/4	66	380	C1	52mm	EBC	It is marked on the lens barrel.
C	450mm	425.3mm	12.5-64	4/4	57	486	C1	49mm	EBC	It is marked on the lens barrel. Sure it's 1.5f -stops slower than the CM-W 450mm version but it is a LOT smaller and lighter. There were three versions of this lens and who knows which came first. The differences are to the filter size and the shutter color. In any event, they are all amazingly small lenses.
C	450mm	425.3mm	12.5-64	4/4	57	486	C1	52mm	EBC	It is marked on the lens barrel. The only difference

										appears to be the filter size, like some other Fujinon lenses.
C	450mm	425.3mm	12.5-64	4/4	57	486	C1	52mm	EBC	It is marked on the lens barrel. This one has a black Copal shutter.
C	600mm	573.0mm	11.5-64	4/4	55	620	C3	67mm	EBC	It is marked on the lens barrel. It is very small and lightweight for a 600mm lens -- if your camera has enough bellows extension to use it!

SF

These lenses come with two insertable grids to adjust the amount of diffusion. Adjusting the f-stop provides even more soft-focus flexibility. Unlike typical shutters that have one f-stop scale, the special Copal shutters on the SF (Soft Focus) Fujinon lenses have three, color-coded, f-stop scales. The main scale, in white, is used when no grid is attached. The second scale, in yellow, is used when the yellow grid is attached. The third scale, in red, is used when the red grid is attached. None of these SF lenses were ever EBC coated since that is not needed in soft-focus work. All of these lenses were marked inside the filter ring, regardless of when they were made. Apparently these lenses were only made with specially marked Copal shutters (not the 420mm, of course), so it will be difficult to determine the age of the lens except by the serial number and by small changes that Copal made in the shutter f-stop spacing and shutter speed knurles size -- but you would have to be able to compare the lenses side-by-side.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
SF	180mm	176.3mm	5.6-22	3/3	58	200	C1	46mm	SINGLE	It is marked inside the filter ring. As a slight wide-angle, it is great for landscapes, group shots and full-length portraits.
SF	250mm	257.8mm	5.6-22	3/3	58	300	C3	67mm	SINGLE	It is marked inside the filter ring. It, and perhaps the other SF lenses, came in two different Copal shutter styles -- the first did not have evenly spaced f-stops, while the second did.
SF	420mm	413.0mm	5.6-22	3/3	58	500	BARREL	82mm	SINGLE	It is marked

							(90x1mm)			inside the filter ring. This was the longest of Fujinon's Soft Focus lenses. It was not made for long, but it is superb for portrait work. You will have to figure out for yourself what the f-stops are when using either of the disks.

A

This series offers lenses from 180mm to 1200mm. They are super-apochromatic lenses with a six element in four group design. While optimized for 1:5 to 1:1 work, they offer fine performance at long distances as well.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
A	180mm	178.2mm	9.0-90	6/4	70	252	C0	46mm	SINGLE	It is marked inside the filter ring.
A	180mm	178.2mm	9.0-90	6/4	70	252	C0	46mm	EBC	It is marked on the lens barrel. It is an improved version of the A 180mm with EBC coating.
A	240mm	237.9mm	9.0-90	6/4	70	336	C0	52mm	SINGLE	It is marked inside the filter ring.
A	240mm	237.9mm	9.0-90	6/4	70	336	C0	52mm	EBC	It is marked on the lens barrel. It is an improved version of the A 240mm with EBC coating.
A	300mm	299.4mm	9.0-90	6/4	70	420	C1	55mm	EBC	It is marked on the lens barrel.
A	360mm	?	10.0-90	6/4	70	500	C1	58mm	SINGLE	It is marked inside the filter ring.
A	360mm	359.1mm	10.0-90	6/4	70	504	C1	58mm	EBC	It is marked on the lens barrel. It is an improved version of the

										A 360mm with EBC coating.
A	600mm	603.3mm	11.0-90	6/4	70	840	C3	95mm	SINGLE	It is marked inside the filter ring. This was a special order lens so it is very hard to find and very expensive. You will need a lot of extension to use this puppy -- if you can find one.
A	1200mm	1202.3mm	24.0-90	6/4	50	1120	C3	102mm	SINGLE	It is marked inside the filter ring. It weighted in at an impressive FIVE pounds and needed FOUR AND A HALF FEET of bellows to focus at infinity! If you want a 1:1 magnification, you'll need NINE FEET of bellows. But it was really too long for most photographers, so it was not produced for very long. This was a special order lens so it is nearly impossible to find -- let alone to afford. The Fuji literature lists the minimum aperture as f90, but the picture in their literature shows f128.

A S

This series may have been designated S for a special market. It is likely that all of the A series lenses were also sold with the A S designation.

SERIES	OPTICAL	FLANGE	f-	ELEMENTS	ANGLE OF	IMAGE	SHUTTER	FILTER	LENS	OTHER /

	FOCAL LENGTH	FOCAL LENGTH	STOPS	/ GROUPS	COVERAGE / COVERING POWER (IN DEGREES @ f22)	CIRCLE (IN MM @ f22)		THREAD	COATING	COMMENTS
A S	600mm	603.3mm	11.0-90	6/4	70	840	C3	95mm	SINGLE	It is marked inside the filter ring. This was a special order lens so it is very hard to find and very expensive. You will need a lot of extension to use this puppy -- if you can find one. It is probably exactly the same as the A 600mm.
A S	1200mm	1202.3mm	24.0-90	6/4	50	1120	C3	102mm	SINGLE	It is marked inside the filter ring. It weighted in at an impressive FIVE pounds and needed FOUR AND A HALF FEET of bellows to focus at infinity! If you want a 1:1 magnification, you'll need NINE FEET of bellows. But it was really too long for most photographers, so it was not produced for very long. This was a special order lens so it is nearly impossible to find -- let alone to afford. The Fuji literature lists the minimum aperture as f90, but the picture in their literature shows f128.

L

The L (Long) series lenses offer modified Tessar-type lenses that feature excellent performance due to a reduction in the angle of coverage. Consequently there are no wide-angle lenses in this series. While shorter focal length lenses could be made with a Tessar design they would not cover the 4x5 film format. By reducing the angle of coverage of these lenses, the number of elements can be reduced -- as well as the price tag -- without any significant reduction in the quality of the image. All of these lenses were designed as budget lenses and did not have EBC coating as a result. All of these lenses were marked inside the filter ring, regardless of when they were made, so it will be difficult to determine the age of the lens except by the serial number and by small changes that Copal made in the shutter f-stop spacing -- but you would have to be able to compare the lenses side-by-side.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
T-NAVITAR	150mm	?	5.6-64	4/3 ?	60	?	C0	?	SINGLE	Navitar is best known for its lenses for 16mm movie cameras, as well as slide and movie projectors. This T-Navitar lens may or may not have been made by Fuji but it is listed in Fuji's large format lens list of 1986 so it is included here. It is noted as being an "Inexpensive Tessar Lens" but it is not listed as a Fujinon L such as the Fujinon L 210mm which was also a less expensive Tessar lens. It is hard to find and little is known about it. All Tessar-type lenses made by Fujinon were single coated. The main intent was to reduce cost without reducing quality. Consequently

										the number of elements was reduced which also reduced the image circle. EBC coating was not added as another cost saving measure.
L	210mm	192.9mm	5.6-64	4/3	59	240	C1	49mm	SINGLE	It is marked inside the filter ring. It is a less expensive Tessar design.
L	210mm	192.9mm	5.6-64	4/4	59	240	C1	49mm	SINGLE	This lens is probably just a typo in the Fuji literature. It's probably the 4/3 version.
L	300mm	280.7mm	5.6-64	4/3	59	343	C3	67mm	SINGLE	It is marked inside the filter ring. It is a less expensive Tessar design.
L	300mm	280.7mm	5.6-64	4/4	59	343	C3	67mm	SINGLE	This lens is probably just a typo in the Fuji literature. It's probably the 4/3 version.
L	420mm	397.6mm	8.0-64	4/3	53	480	C3	67mm	SINGLE	It is marked inside the filter ring. It is a less expensive Tessar design. Despite the lower cost, it was not sold for long.
L	420mm	397.6mm	8.0-64	4/4	59	480	C3	67mm	SINGLE	This lens is probably just a typo in the Fuji literature. It's probably the 4/3 version.

FUJINON

The lenses in this series are simply inscribed "FUJINON" and offers four lenses from 180mm to 300mm. All are single coated Tessar designs (4 elements in three groups) with wide apertures of f4.5. All came as in-barrel lenses without shutters, just like the earlier Rectar and Fujinar lenses. In fact, they can be thought of as a continuation of the Fujinar series which were all Tessar lenses without shutters and with wide apertures of f4.5. All lenses in the series are single coated.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
FUJINON	180mm	163.6mm	4.5-64	4/3	59	205	BARREL (56x1mm)	49mm	SINGLE	It is marked inside the filter ring. 56mm screw-mount. It might be a later, unmarked version of the Fujinar 18cm barrel lens. It was an inexpensive Tessar design, like the Fujinon L series lenses.
FUJINON	210mm	188.6mm	4.5-64	4/3	59	240	BARREL (62x1mm)	58mm	SINGLE	It is marked inside the filter ring. 62mm screw-mount. It might be a later, unmarked version of the Fujinar 21cm barrel lens. It was an inexpensive Tessar design, like the Fujinon L series lenses.
FUJINON	250mm	223.2mm	4.5-64	4/3	59	286	BARREL (75x1mm)	67mm	SINGLE	It is marked inside the filter ring. 75mm screw-mount. It might be a later, unmarked version of the Fujinar 25cm barrel lens. It was an inexpensive Tessar design, like the Fujinon L series lenses.
FUJINON	300mm	268.7mm	4.5-64	4/3	59	343	BARREL (90x1mm)	82mm	SINGLE	It is marked inside the filter ring. 90mm screw-mount. It might be a later,

										unmarked version of the Fujinar 30cm barrel lens. It was an inexpensive Tessar design, like the Fujinon L series lenses.

CM-W

This series offers selected improvements over the NW series lenses -- and much larger filter threads.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
CM-W	105mm	103.4mm	5.6-45	6/5	78	174	C0	67mm	EBC	It is marked on the lens barrel. It is a slightly improved version of the NW 105mm with a slightly wider angle of coverage and a much larger filter size..
CM-W	125mm	119.9mm	5.6-64	6/5	78	204	C0	67mm	EBC	It is marked on the lens barrel. It is a slightly improved version of the NW 125mm with a slightly wider angle of coverage.
CM-W	135mm	132.4mm	5.6-64	6/6	76	214	C0	67mm	EBC	It is marked on the lens barrel. It is a slightly improved version of the NW 125mm with a slightly wider image circle.
CM-W	150mm	144.3mm	5.6-64	6/6	73	223	C0	67mm	EBC	It is marked on the lens barrel.
CM-W	180mm	170.7mm	5.6-64	6/5	71	260	C1	67mm	EBC	It is marked on the lens barrel.
CM-W	210mm	208.7mm	5.6-64	6/5	72	309	C1	67mm	EBC	It is marked on the lens barrel.
CM-W	250mm	239.9mm	6.3-90	6/6	65	320	C1	67mm	EBC	It is marked on the lens barrel. It is an improved version of the

										NW 250mm with two additional elements, full-air spaced design and a larger image circle
CM-W	300mm	295.5mm	5.6-90	6/5	69	412	C3	77mm	EBC	It is marked on the lens barrel.
CM-W	360mm	354.1mm	6.5-128	6/6	68	485	C3	86mm	EBC	It is marked on the lens barrel. It is an improved version of the W 360mm with full air-spaced design.
CM-W	450mm	442.9mm	8.0-128	6/6	60	520	C3	86mm	EBC	It is marked on the lens barrel.

T

This series offers long focal lengths with short flange distances. This allows telephoto effects even with short bellows.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
T	300mm	195.3mm	8.0-64	5/5	39	213	C0	67mm	EBC	It is marked on the lens barrel. This was Fujinon's third and final true telephoto-design lens for large format cameras.
T	400mm	259.2mm	8.0-64	5/5	33	240	C1	67mm	SINGLE	It is marked inside the filter ring. This was Fujinon's first true telephoto-design lens for large format cameras.
T	400mm	252.4mm	8.0-64	5/5	31	220	C1	67mm	EBC	It is marked on the lens barrel. It is an improved version of the T 400mm with EBC coating, and looks slightly different from its predecessor.
T	600mm	383.9mm ?	12.0-90	5/5	24 ?	260 ?	C1 ?	67mm ?	SINGLE	It is marked inside the filter

										ring. This is obviously an earlier version of the 600mm EBC coated T and the specifications are not known since it is not listed in any Fuji literature. This was Fujinon's second true telephoto-design lens for large format cameras. The specifications are probably the same as the later EBC coated 600mm T, although the appearance is slightly different. On many cameras you will need some extension -- of some sort -- to use this lens, but the results are incredible.
T	600mm	383.9mm	12.0-90	5/5	24	260	C1	67mm	EBC	It is marked on the lens barrel. On many cameras you will need some extension -- of some sort -- to use this lens, but the results are incredible.

S

This series may have been designated S for a special market.

SERIES	OPTICAL FOCAL LENGTH	FLANGE FOCAL LENGTH	f-STOPS	ELEMENTS / GROUPS	ANGLE OF COVERAGE / COVERING POWER (IN DEGREES @ f22)	IMAGE CIRCLE (IN MM @ f22)	SHUTTER	FILTER THREAD	LENS COATING	OTHER / COMMENTS
S	300mm	?	5.6-90	?	?	?	C3	?	SINGLE	It is marked inside the filter ring. It might be exactly the same as the W 300mm. It is only marked Fujinon S. It

										must have been made after the Fujinar 30cm, and it might have appeared before the W 300mm. It is possible that other Fujinon S lenses were made.