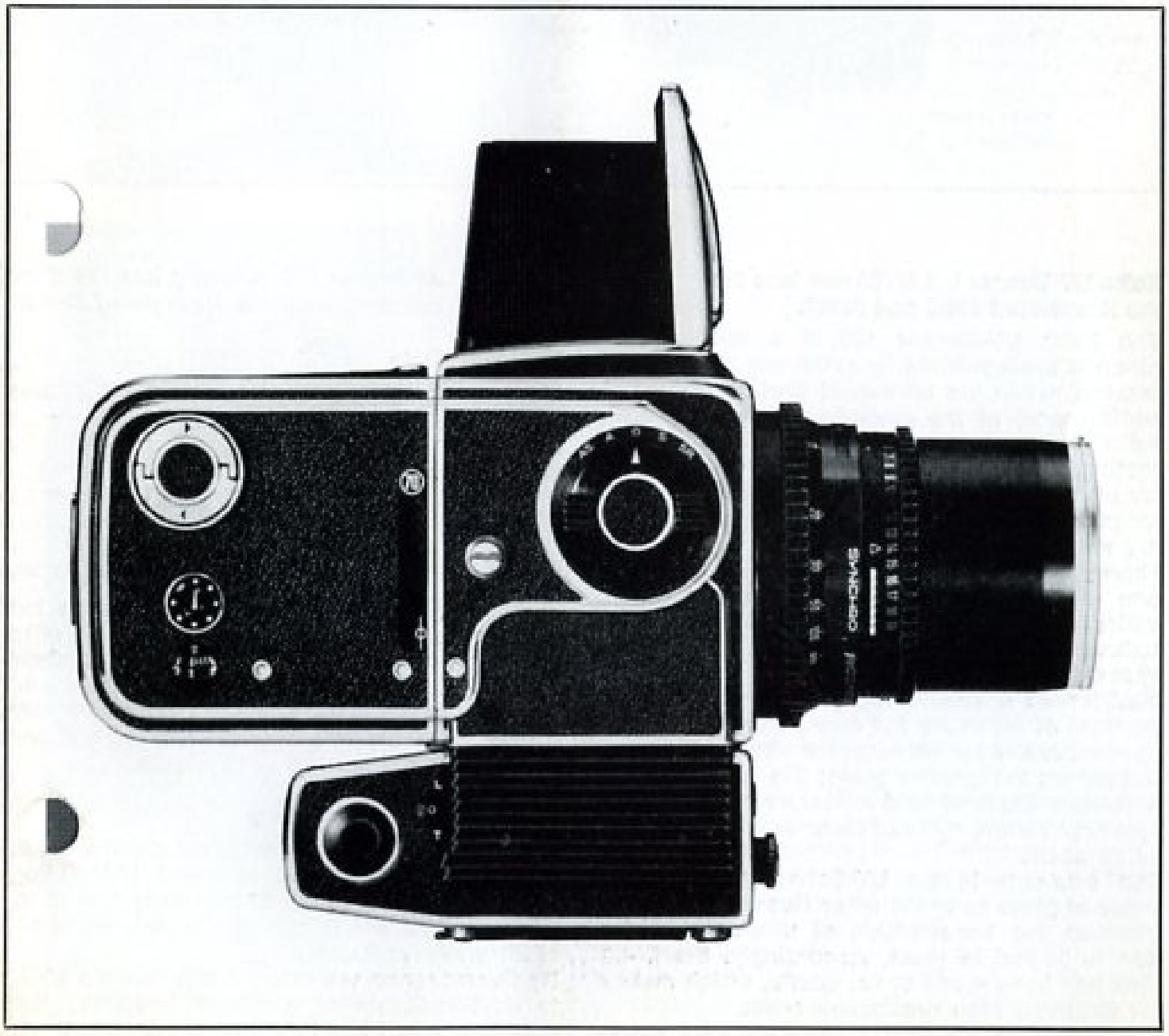
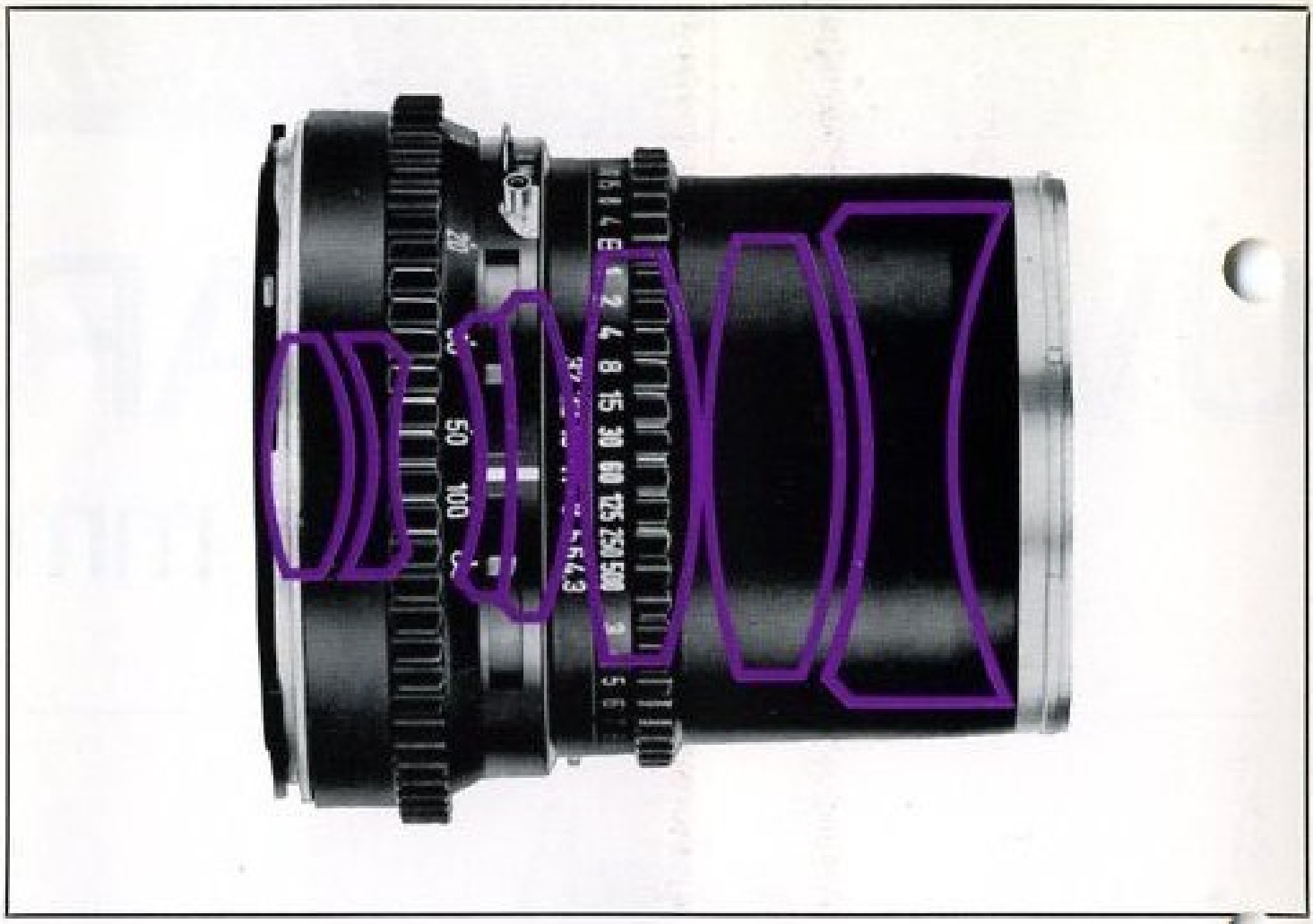
HASSELBLAD

UV-SONNAR

f.4.3/105 mm





Zeiss UV-Sonnar f. 4.3/105 mm lens for the Hasselblad 500C and 500EL

The Zeiss UV-Sonnar 105 is a special lens which is distinguished by extremely good transmission within the ultraviolet portion (215—400 millimicrons) of the electromagnetic spectrum. As a result of its exceptional chromatic correction, the lens despite its special construction for ultraviolet radiation (UV), can also be used for photography in visible light and in the infrared area of the spectrum (IR).

The manufacturer is Carl Zeiss, West Germany, one of the world's leading manufacturers of optical equipment; a guarantee of the finest optical performance. The Compur shutter has speeds from 1—1/500 sec. Like all Hasselblad lenses it automatically stops down at the moment of exposure but may be stopped down conventionally for an accurate check on depth-of-field on the ground glass; the lens also has moveable depth-of-field indicators, "M" and "X" synchronization, "V" self-timer and an exposure value scale.

The elements in the UV-Sonnar 105 are not made of glass as in the other Hasselblad lenses because the transmission of ultraviolet radiation is limited in glass. Accordingly, the f. 4.3 lens has been made of i.a. quartz, which makes for relatively high production costs.

In addition to its design for ultraviolet radiation, the UV-Sonnar 105 naturally has the same technical qualities as other Hasselblad lenses.

Technical Data

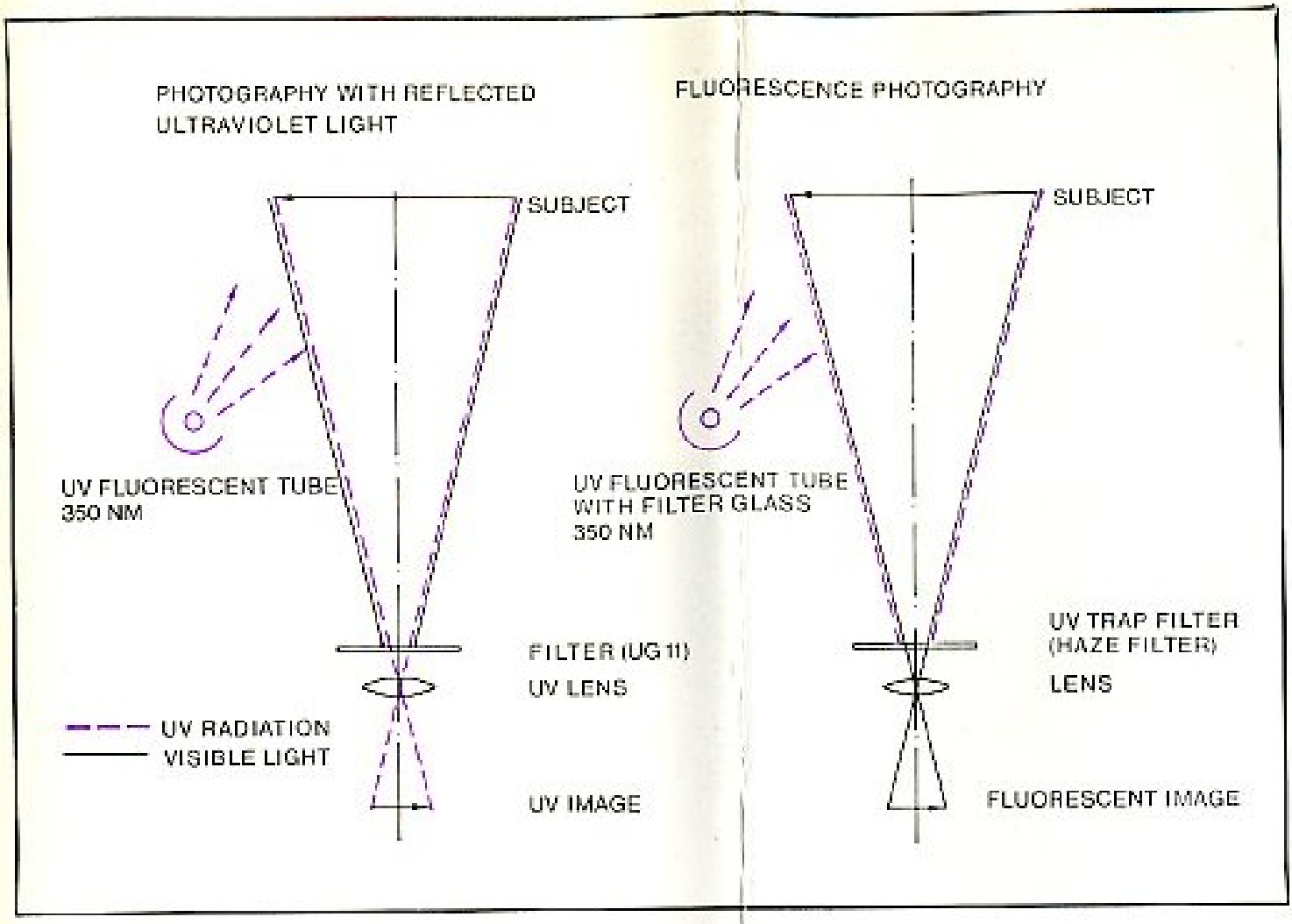
Maximum aperture/focal length	f. 4.3/105 mm
Angle of view	40°
No. of elements	7
Focusing range	6 feet—∞
	1.8 m—∞
Diaphragm	4.3—32
Synchro-Compur shutter	1—1/500 sec, B
Wavelength range	215—700 millimicrons

Just as the visible spectrum is divided up into color radiations (red, yellow, green etc.), ultraviolet radiation is also divided up but into shorter and longer wave ultraviolet, hence shorter and longer wave UV photography. In addition, different films, filters and sources of radiation are used at the various wavelengths.

Fluorescence Photography

Because there is often confusion about the concepts fluorescence and reflected UV photography, we'd like to try and explain briefly the difference between them since both make use of ultraviolet radiation.

By fluorescence we mean a substance's ability to emit radiation of a longer frequency than that to which it has been exposed.



Pictures at left:

This painting of Saint Agatha (Göteborg's Konstmuseum) shows how new painting and repairs can be disclosed with UV light.

The top picture was taken conventionally with photofloods. The fluorescence glow picture (right) shows how the painting fluoresces (the light parts) when exposed to invisible long-wave UV radiation from a UV fluorescent tube with filter glass. The gold colored parts (the hem of the robe and halo) do not fluoresce. This method of investigation is common in the examination

Since ultraviolet rays have a shorter wavelength than that of visible light they can, thus, produce visible fluorescence in a darkened room. The image attained can be photographed with ordinary photo equipment. However, the light source must be supplied with a UV filter which blocks visible radiation.

With direct UV photography this filter is unnecessary on the radiation source but a special filter must be used on the lens. (See diagram above).

Photographic Materials

Since the sensitivity of normal photographic emulsions extends to about 250 millimicrons, ordinary black-and-white film can be used. But