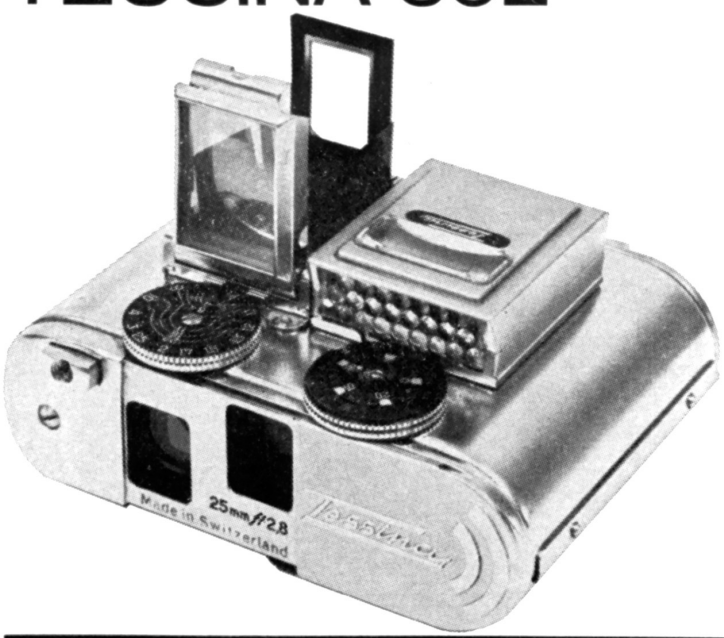
Lab report

TESSINA 35L



Camera Type:	Sub 35-mm twin-lens reflex, using 35-mm film in special 18-20 exposure cassettes.
Lens:	Tessinon 25-mm *f*/2.8; min. focus, 12 in. Diaphragm closes to *f*/22
Shutter:	Between-the-lens; 1/2 to 1/500, plus B
Viewfinder:	Groundglass plus slip-on sports finder
Flash Synchronization:	M, X
Film Transport:	Spring-wound automatic film advance and shutter cocking
Other Features:	Coupled meter (optional), cable socket
Weight:	5 1/2 oz.
Dimensions:	2 1/2x2x1 in.
Accessories:	Wrist strap, focus magnifier, tripod plate
Price:	Basic camera in chrome finish: $149.50, with coupled meter: $169.50
Distributor:	Karl Heitz, Inc., 979 Third Av., N.Y.C. 10022

FIELD CHECK

When I was first asked to test the Tessina 35L, I didn't quite know whether to laugh it off or not. After all, what respectable pro would go out on a job with such a tiny camera? But it only took me a few rolls of film to gain a healthy (although limited) respect for this precision device.

I got excellent 8x10s, using even fast films such as Kodak Tri-X, from the 14x21-mm Tessina negatives. Of course, the main secret is in the processing—fine-grain development, great care to equalize processing and washing temperatures —and a good, sharp enlarging lens. But, of course, your camera's lens must first resolve a sharp image on the film. And unless the shutter, diaphragm, and exposure meter are also functioning right on the button, no amount of critical handling in the darkroom can enable you to produce clean, sharp prints at the more than 12X magnification needed for an 8x10 print from the small Tessina negatives. The Tessina I tested was functioning with all systems "A-OK."

Because it is such a small camera, you can handle and carry the Tessina in a variety of ways. I chose a wrist strap, so that I could carry the camera around with me as if it were a watch. By wearing the Tessina just under my jacket sleeve until ready to shoot, I was able to get some interesting photos that larger, bulkier equipment would have made more difficult if not impossible. The fact that the camera was on my wrist somehow made using it seem less conspicuous than is the case with most other subminiature cameras.

If you are in the spy business, you probably already know that the camera can be focused as close as 12 inches. So far as focus is concerned, photographing papers and documents in tight areas is relatively easy. But the maximum lens aperture of *f*/2.8 makes the really dim-light situations a little tough. Despite its smallness (or perhaps because of it, and the resulting low inertia of the camera) shooting at slower than 1/60 sec can lead to lack of sharpness. And when you've got such small negatives, sharpness is essential.

Both the coupled meter and the viewfinder hood will slip off the camera body. Taking them off makes for less bulk. Of course, without the hood, seeing through the small viewfinder groundglass becomes more difficult, and you have to be pretty good at exposure-guessing without the meter. But it's simple to make bracketed exposures because the spring-wound, automatic film advance mechanism permits fast shooting. One disadvantage here, however, is that the cassettes will hold only enough film for about 20 exposures. When you bracket-shoot, you can use up that much film quickly.

I found it a nuisance that the miniature controls require fairly facile fingers for manipulation. If you've got gross, stubby digits, you may find it a bit troublesome making settings. And the fact that the shutter speed dial must be rotated in only one direction sometimes caused a delay in getting to the shutter speed I wanted. As a result, I lost picture opportunities from time to time.

Loading and unloading also require some agility, but I think that nearly anyone can master this in a short time.

The Tessina cassettes are made of thin plastic, and I found that I had some fogging troubles at first—at least until I learned to take seriously the manufacturer's advice about loading and unloading the camera in subdued light.

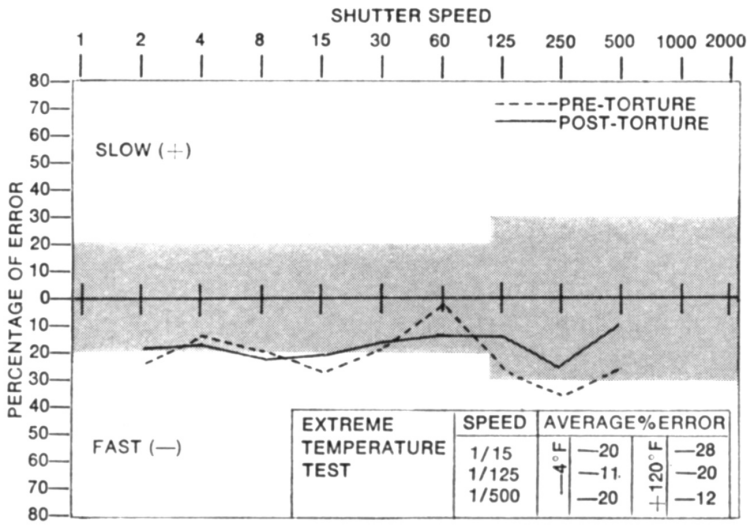
I have a Tessina cartridge loader (the manufacturer calls it a daylight selfloader for bulk film, but it accepts standard 35-mm cassettes—not bulk film), so reloading into them from standard 35-mm cassettes proved to be no trouble. If you intend to get into Tessina photography, I strongly advise you to get the loader for convenience.

Do-it-yourself darkroom people will have to get used to printing the negatives from the Tessina with the emulsion facing away from the sensitized surface of their printing papers. The internal reflex mirror of *(continued on page 124)*

INSTRUMENT READOUTS

CAMERA: TESSINA 35 No. 865643 **LENS:** 25-mm TESSINON *F*/2.8

SHUTTER PERFORMANCE: Most errors are within tolerances; since all are on fast side, they can easily be adjusted for accuracy.

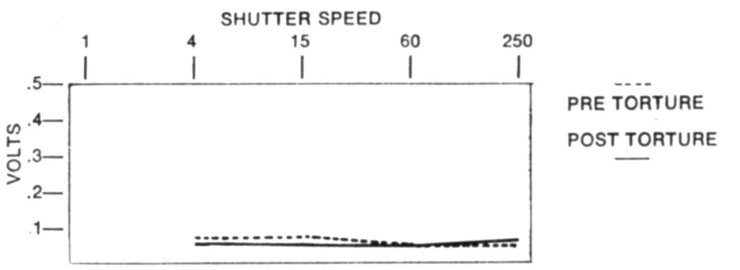


EXTREME TEMPERATURE TEST	SPEED	AVERAGE %ERROR	
		−4°F	+120°F
	1/15	—20	—28
	1/125	—11	—20
	1/500	—20	—12

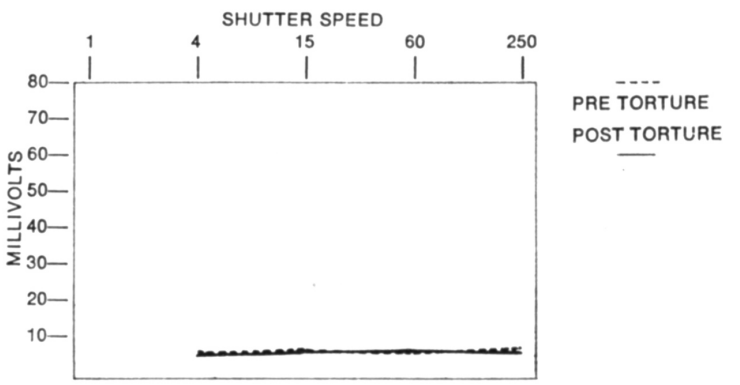
Suggested USA (formerly ASA) shutter accuracy standards are shown by shaded area. Higher speeds have more tolerance.

SHUTTER TRIP AND TRAVEL: The gentle release of the Tessina is especially appropriate for the low inertia of this tiny camera.

VIBRATION LEVEL: The Tessina shows less vibration than all the more conventional cameras tested, putting it in the Minox league.



NOISE LEVEL: This, too, is below level of conventional cameras.



Noise and vibration standards do not exist, but relative levels become evident when charts for several cameras are compared.

METER SPECIFICATIONS:

Type: Selenium	**Zeroing provision:** No
Accuracy: Within 1/4 stop	**Parallax:** No
ASA range: 12-800	**Battery test:** —
Acceptance angle: 40 degrees	
Response discrimination: Good	
Accessories: None	**Scale legibility:** Fair
Movement balance in various positions: Fair	

LENS PERFORMANCE: Because of the camera's design, the mirror that "folds" the image was considered to be part of the optical system, and therefore all tests performed included the mirror in the system. When off-axis tests were at first somewhat disappointing, the mirror was suspected. Sure enough, there was a smudge on it—my fault. Results with a clean mirror were very much improved. So, take care: when changing film, keep your fingers clear of the mirror chamber to assure the best possible results.

Electronic bench tests indicate that the lens has very good contrast, with the center region peaking at *f*/4. Even at the short edge of the frame (which is quite a pronounced oblong), the optimum was reached by *f*/5.6. On the long side of the oblong, where the lens must cover a field of more than 47 degrees, *f*/8 was needed to optimize performance.

The lens appears to be up to yielding good results on the small, 14x21-mm negative. Color fans should be pleased with it too, as the residual chromatic aberrations were very small.

All of this speaks well for the entire system, both lens and mirror. The latter has just as important a role as the former and too often is considered to be a non-critical component. A mirror not perfectly flat, when placed in the ray-path of a lens, can introduce aberrations (astigmatism, etc.) of which the lens itself may not be guilty.

Conclusion: Because of the small negative, the camera requires a very well corrected lens to answer the demands of greater than average enlargements. This lens can meet those demands.

MISCELLANEOUS DATA

	PRE-TORTURE			POST-TORTURE		
Focusing System: Groundglass and Sports Finder						
Range	1 ft—∞			1 ft—∞		
Accuracy over range	∞	5M	1M	∞	5M	1M
	OK	OK	OK	OK	OK	OK
Shutter-trip force:	265 gm			250 gm		
Shutter-trip travel:	1-1/2-mm			1-1/2-mm		
Self-timer: Minimum	—			—		
Maximum	—			—		
Viewfinder: Twin-lens reflex						
Framing Accuracy	OK			OK		
Parallax Corrected	No			No		
Synchronization: Std. PC outlet						
Flashbulb	8 msec			7 msec		
Strobe	0.0 msec			0.0 msec		
Contact Resist	0.4 Ω			0.5 Ω		
Insulation	OK			OK		

STRIPDOWN REPORT

	Interior	Exterior	
Material choice:	Good	Good	**Modular construction?** Yes
Assembly, Finish:	Good	Good	**Replace key parts easily?** Yes
Repair access: Good			**Seal against dirt:** Poor
Adjustment provision: Good			
Do frequently made adjustments require major stripdown? No			

Comments: There is a confidence-inspiring utilization of space without undue miniaturization of parts. Typical of the good design practices is the placement of the mainspring inside of the take-up spool. Too bad, though, that there is no device to prevent over-winding the spring and limit the amount it uncoils, to retain a bit of spring power at the end of the run. The Swiss watchmaking industry developed such a device—the so-called Geneva stop—so it puzzles me that this neat little Swiss camera doesn't incorporate it. The watchmaker's touch is evident elsewhere, though—the slow-speed gear train features jeweled bearings, for instance.

I have to rate the sealing against dirt "poor" on this camera because of the sensitivity of the tiny gear trains to jamming from dirt or lint creeping in the crevices found both front and rear. The front is particularly vulnerable to dirt jams because the shutter and diaphragm blades are partially exposed when the camera's front is slid open (for making pictures). The gear trains are almost all prone to dust jams every time the back is removed to change film. Even with the back on the camera, I could see portions of the gear trains through the imperfect back-to-body fit.

It must be said that the rear crevices result because portions of the gear trains require more room than the inside of the camera allows. The body has been milled out to provide the needed clearance for these parts and these are the "ports" through which foreign matter may enter. I would have preferred seeing the camera made just a tiny bit thicker (as little as 1/32-in. would eliminate the problem).

Conclusion: A very clever design, in which every cubic centimeter has been utilized without unnecessarily complicating the various modules. However, the small size dictates fine parts, and close tolerances, so it *must* be kept clean —*Norman Goldberg*

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the camera causes the image to land on the film laterally correct—which, compared to the standard of other cameras, is wrong side around.

Having worked with this truly precise, tiny camera, I came away with the impression that the Tessina is potentially a serious piece of photo equipment. But because its small negatives require extra care at every step to insure top notch results, I would choose to use it only in those situations when larger, more conspicuous equipment might keep me from getting my pictures. I would, however, definitely choose the Tessina over the teenie-tiny format of most other subminiatures.—*Harvey Zucker*