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THE SUBMINIATURE TIMES

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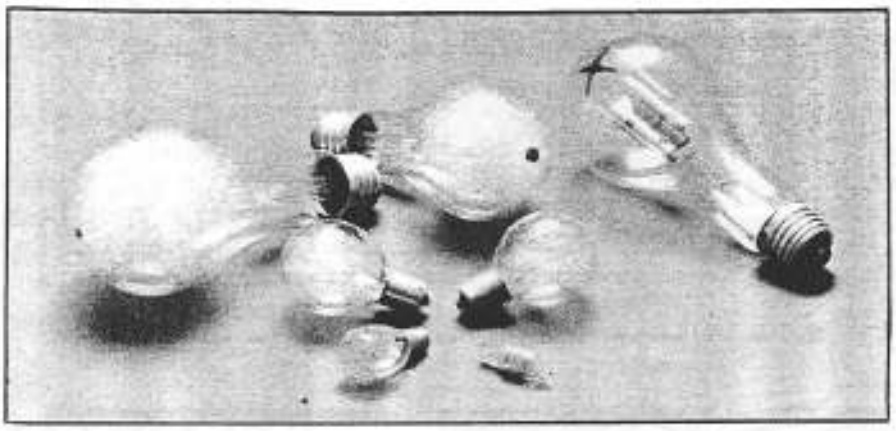


Bulbs currently available from Sylvania. Rear row, (left to right) Type 3, Type 2, FF-33; middle row, Press 25, FP-26; front row, M-3, AG-1B.

EDITOR'S JOURNAL: A LITTLE LIGHT ON THE SUBJECT

Subminiature technology and flash photography seem always at odds. Using a flash makes it possible to use slow films in low light, but extra hardware makes a small camera larger. If it isn't pocketable is it subminiature? If a pocketable flash gun is too weak to illuminate your subject, is it practical?

The first flash that I used with my little Mamiya-16 was salvaged from an old 4 x 5 Speed Graphic. The reflector was the size of my outspread hand. It used a #40 bulb which had the same size and base as a household 40 watt. Since I didn't use a gadget bag, I was limited to carrying 2 bulbs at a time.

At parties, after I'd taken 2 pictures, I had to carry the mismatched reflector around for the rest of the evening. Inebriates asked if I'd washed my camera and it shrunk!

The smaller #5 bulb mercifully replaced the large base bulbs. To get rid of our old bulbs an ongoing photo club prank was to put a #40 in a lamp in the school library.

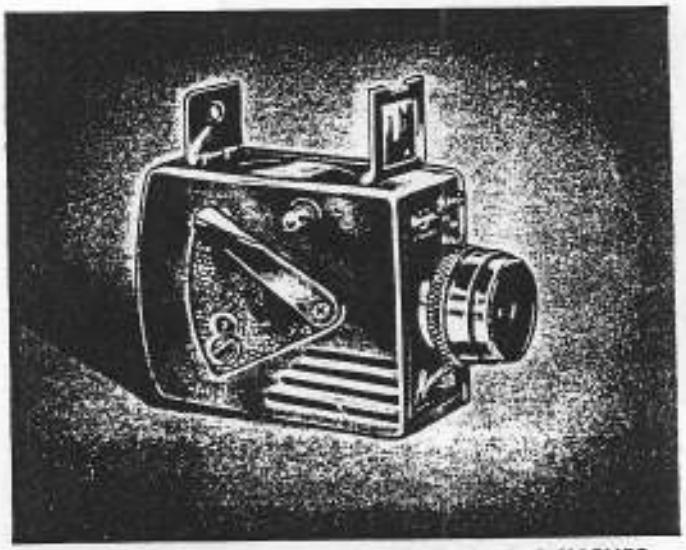
There was a learning curve with the smaller bulbs. You definitely couldn't put fresh bulbs and fresh batteries in the same pocket.

When a battery was in contact with bulbs at both ends one of them would fire.

For some reason this bulb-battery-bulb configuration only happened when I was reaching for a fresh bulb.

There'd be a beam of light, and I'd pull up a hand smelling of toast. I learned to keep fresh bulbs in right side pockets, used bulbs and batteries on the left.

It's New It's Sensational It's UNIVERSAL'S Minute 16



TRULY "MINUTE" IN SIZE—2¾ x 1¾ x 1 INCHES

Here's a perfect jewel-of-a-camera that anyone can use effectively. A magazine-loading, fully-automatic little gem that's up to ALL your picture taking opportunities. The MINUTE-16 fits into your smallest pocket . . . your smallest purse . . . can go with you everywhere. Ready for use in an instant, its simplified operation has been fined-down to the point where only one simple adjustment (the lens aperture) is all you need to make. As a color camera, it's in a class by itself. 14-exposure, color or black & white film loads sell for the same price. You can shoot all the color you want, AT NO EXTRA COST. Three photo-finishing labs (in New York, Chicago, and Hollywood) are at your service for processing your exposed films.

- ALL METAL CONSTRUCTON (Satin chrome-plate)
- PRECISION BUILT THROUGHOUT
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- AUTOMATIC EXPOSURE COUNTER (complete with Manual Reset)
- AUTOMATIC DOUBLE EXPOSURE PREVENTION
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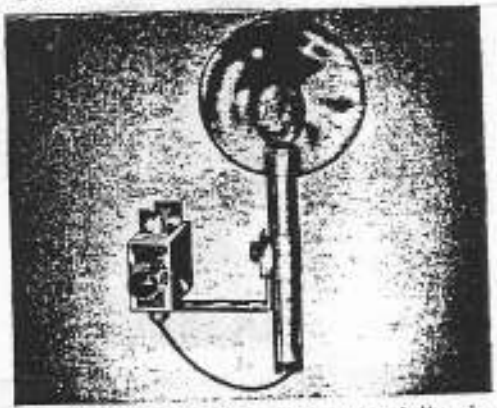
- MAGAZINE LOADING
- 14-EXP. BLACK & WHITE OR COLOR FILM LOADS
- COATED COLOR-CORRECTED f6.3 LENS (variable apertures)
- BUILT-IN LENS SHADE
- OPTICAL EYE-LEVEL VIEW FINDER
- BUILT-IN FLASH SYNCHRONIZATION

FILMS FOR THE MINUTE-16

UNI-PAN: 14-exposure, fine grain Panchromatic film magazines.

UNI-COLOR: 14-exposure, daylight type, direct color transparency film magazines.



The MINUTE-16 Flash Unit, especially designed for use with the MINUTE-16 Camera, lets you take your light along with you. With it, you retain lighting control at all times.

The Flash Unit may be disassembled and, like the camera, carried in your pocket. It uses "midget" flashlamps; electrical current is supplied by 2 "penlite" batteries.

MINUTE-16 CAMERA	MINUTE-16 FLASH UNIT	UNI-FILMS
$7.95	$3.95	35c EACH
		3 FOR $1.00

All prices include Federal Excise Tax.

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28 West 23rd Street, New York 10, N. Y.

Gentlemen:

I'M INTERESTED! Rush me your descriptive brochure on the MINUTE-16 CAMERA & FLASH UNIT.

While you're at it send along literature on:

☐ UNIFLEX ☐ MERCURY II ☐ CINEMASTER II ☐ ROAMER
☐ BUCCANEER ☐ CINEMATIC ☐ P-500 ☐ TONEMASTER ☐ BINOCULARS

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THE UNIVERSAL TREND

- UNIFLEX
- MERCURY II
- BUCCANEER
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- TONEMASTER
- BINOCULARS

By the time folding fan reflectors and the still smaller M-3 bulbs made pocketable flash photography a reality, everyone else I knew had already made the change to electronics.

I was extremely reluctant to change over because I always needed to use slow film for image quality.

One of the last large base bulbs I used was the Type 2. It had a guide number of 420 with ASA 100 film. I took portraits of people leaning from fifth floor windows from the sidewalk on the opposite side of the street.

By comparison, the best small electronic flash gun I could find had a guide number of 20 with Plus-X. What a tradeoff that was! I relegated it to copying until I learned to use faster films.

For a long time it wasn't even clear that the tradeoff for abysmal power was low cost per flash. I had to replace flash guns so frequently (from bouncing around the locker room, burst batteries, and other trauma normal to a kid's life.) When a strobe died, you couldn't just lick the base of the bulb or jiggle the circuitry with a paper clip to coax fire out of it. The whole reflector was useless.

We'd remove the capacitor, charge it a bit, and put it out in the hall for a Freshman to discover. Kids!

As bulbs became scarce I started using flash guns that would let me hang the camera pistol-style on an inside jacket pocket. I use this combination to this day whenever I use Mamiya-16 Automatics at social events. Its small, and neat.

Besides the bulb versus strobe issue, subminiature hardware has problems that go beyond Murphy's laws to a more basic tenet of science: No two things go together perfectly.

A pocket is a dynamic environment. Connections detach. The only subminiature flash equipment that I trust completely are dedicated units built into the camera. I'll mention the Kodak Instamatics at this point.. Never had a misfire. Using black and white microfilm requires respooling the pesky 110 cartridges, but if you're going for maximum image quality, a rule of thumb is the ability to copy a journal size newspaper, or six typewritten pages from a distance of 4 feet, and read every word.

Using Minolta flash equipment correctly takes skill. One of the smallest flash units in all subminiature is the tiny Minolta 16-MG reflector. It uses the AG-1 bulb which is pound for pound a world class flamethrower. Its good for pictures out to 40 feet with a 500 speed film. But the 16-MG is one of the older cameras calibrated for thick films. For closeups or copying it compares with a Rollei-16. It can't give you a tack sharp image at 40 feet.


SYLVANIA BLUE DOT
FLASHBULBS AG1

The sharpest subminiature Minolta ever made was the 16-QT. But the factory equipment for the 16-QT is an electronic flash that has such limited reach that using ISO 100 film, subjects as close as 12 feet can be underexposed. And the two flash units can't be interchanged!

Specification for Acmel MD

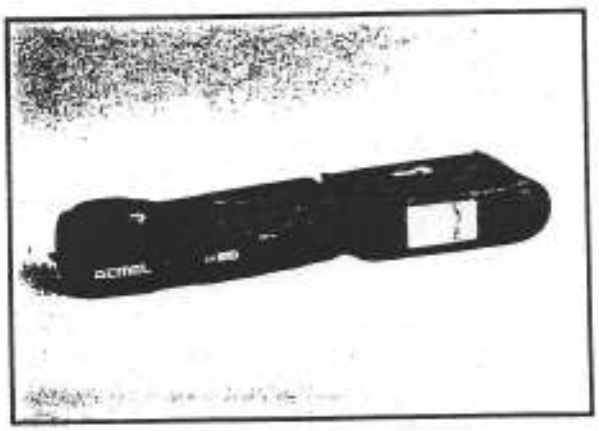
Film Size:	Universal 8 x 11 mm Minox type cartridge
Lens:	Azonon f3.5 Focal length: 15 mm 3G4E Tessar
Focus:	Total group focus type, shooting range: 1 ft. - infinity
Lens Diaphragm:	f4.8 (fixed)
Shutter:	2-piece feather touch electronic shutter automatically set after winding film.
Shutter Speed:	Approx. 2 sec. - 1/500
Light Signal:	Red LED for slow shutter speed warning (longer than 1/30 sec.)
Exposure Control:	EV5-17 automatic light sensor with CDS
Sensitivity Setting:	Manual dial type ISO 25, 50, 100, 400
Film Winding:	Manual rotating knob with double light prevention structure.
View Finder:	Albata type bright frame, with close up mark 1 ft.

Acmel MDX flash

Guide Number:	8 (ISO100/M) 16 (ISO400/M)
Sensor:	CDS method
Battery Switch:	Built-in auto-off circuit
Setting:	3-pins one touch type
Re-charging:	Within 3 sec. (with a new battery)
Recharge light:	Neon tube display

ACMEL MD/MDX Camera

The Acmel MD/MDX incorporates an Azonon lens (3G4E f3.5=15mm focal length). This lens makes it possible to capture extreme details on the small 8 x 11 mm film. The combination of this outstanding lens and Minox films, with new emulsion technology such as minicolor HG100 and minicolor HG400, will produce superb pictures.



Minox flash units perform well. The pictures are bright and crisp.

Longtime users mention irksome connection problems with all models except the EC. It uses my old friend the AG-1 bulb in the guise of a 4-shot flash cube. A super compact package.

The Acmel MD flash is pivotal technology. This $75 unit has a guide number of 24 with ISO 100 film.

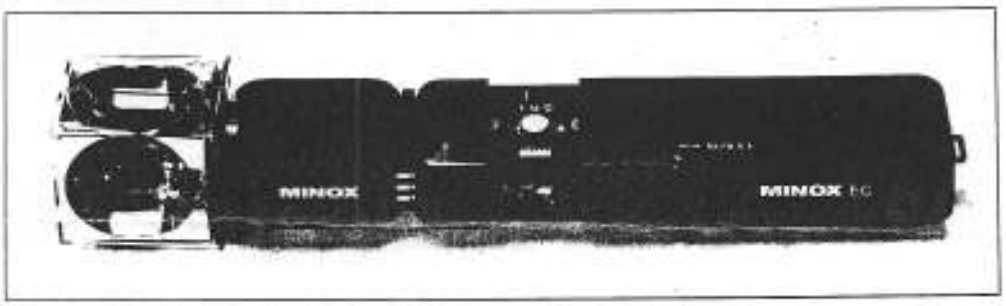
Using a camera with a fixed aperture of f/4.8, this works out to a reach of 5 feet. The numbers are significant because tiny digital cameras can now return a

FLASH BULBS

Great selection especially for railroaders to shoot trains passing in the night! **No 50ies ea....$1.35. 20 for....$25. 100 for....$115. No. 22 or 22B. ea. ....$1.25. 20 for....$23. 100 for....$95 No. 11 or 40ies....$59 ea. 20 for....$10. 100 for....$43.50. No. 3 or 30 or 31 ea.....$1**

AG1B ....$60 dozen, 12 dozen @ ....$6. AG 3 B ...$.36/dozen. M2B loose @ ...$2/dozen. **M2B's box.**

8 x 11 flash: electronic flash for EC camera.
Guide number: ISO 100: 14 (m)/56 (ft)



The FE 4 flash cube adapter for electrically fired flash cubes is powered by the camera battery.
With 100 ASA film the flash range is up to 5.5 m or 18 ft.

■ Minox 35 PE has the programmed exposure system of the Minox 35 PL, with a built-in computerized flash. Extending the flash turns charging current on. A yellow LED in the finder and atop the camera indicates flash is ready. Lens is a

retractable 35-mm Color Minotar f/2.8. Exposure program selects apertures to f/16, coupled with shutter speeds from 4 to 1/500 sec. Price, $315; ready case, $39. *DIST.*: Leitz Independent Photo Group, Rockleigh, N.J. 07647.

better image at a subject distance of 5 feet than an enlargement from an ISO 100 Acmel color negative! The handwriting is on the wall for subminiature film.

My track record with other systems is uneven. I've never had a Pentax-110 flash that lasted very long. Vibration and battery problems have knocked them all out of service. I'm hoping that other photographers haven't had this problem. The camera won't accept any other manufacturer's flash guns. I've run out of "one more times" with the system.

The Minolta-110 SLRs present a different challenge. They'll accept any flash, and have dedicated hot shoes, but I can't seem to get tack sharp prints focusing with their microprism. I love using zoom lenses, but if I can't get a sharp picture..at least an Instamatic will fit in your pocket.

Put a flash on the Mark II and we're talking Monday night football.

If you are collecting original equipment, excellent reference works are J.D. Cooper's "Ultraminiature Photography" and "New Ultraminiature Photography". Both contain photos of early subminiature flash relectors.

POPULAR 16C

ELECTRONIC FLASHGUN FLASH ELECTRONIQUE INSTRUCTIONS

Description of parts:

1. Battery compartment cover
2. Flash guide table
3. ON-OFF switch
4. Ready lite
5. Mounting foot
6. PC synchro cord
7. Test flash button
8. Auto-Manual selector switch

Inserting batteries:

Slide open the battery compartment cover. Insert two penlite (AA size) batteries according to the polarity indicated.
Close battery compartment cover. Turn the switch to the "on" position and wait for the ready lite to glow. The flash may be tested with the test flash button. (The test flash button cannot be used when the PC synchro cord is detached from its storage socket on the side of the mounting foot.)
Replace batteries if the ready lite takes a long time (30 sec.) to glow.

Mounting onto camera:

Slip the flash unit's mounting foot into the accessory shoe of your camera. If your camera is equipped with a hotshoe, this will automatically couple with the flash and trigger the flash when the camera shutter is released.
If your camera does not have a hotshoe, use the PC synchro cord. Pull the PC synchro cord out of its storage channel and connect its tip into the synchro socket on your camera. Select "X" position on camera or use the "X" synchro socket.

Camera shutter speed:

For cameras with a leaf shutter, the flash will synchronize at all speeds. For general use, a shutter speed of 1/125 sec. is recommended.
For cameras with focal plane shutter (most reflex cameras), the flash will synchronize at 1/60 sec. in most cameras, or 1/125 sec. in some cameras. See camera's operating manual for the correct shutter speed to be set. Shutter speed faster than the recommended ones will cause shadows on the picture.

Determining lens aperture:

Automatic operation

This flash unit has a computer for automatic light output regulation with an effective distance range between 3 to 13 feet. Switch on the computer by sliding the Auto-Manual selector switch downward. The lens aperture (f-stop) to be set on your camera can easily be found in the flash guide table on the back of the flash. Always set the lens aperture to the value indicated in the white area associated with the particular film sensitivity in use.

Example: If you are using an ASA 100 film, the lens aperture to be set for automatic flash exposure is f4.

Now the computer will measure the light reflected from the subject and regulate the light output to give correct exposure when the flash is fired with the camera shutter button.

Manual operation

Switch off the computer by sliding the Auto-Manual selector switch upward. Just read the f-stop figure to which the shooting distance and film sensitivity correspond in the flash guide table. Set this figure on your camera.

Example: If you are using an ASA 100 film and your subject is 9 feet away, the lens aperture to be set is f5.6.

maintenance and care:

When not in use, switch the flash off. Take the batteries out when the flash is being stored or when it will be carried for a long time.
Do not use Nickel Cadmium battery.
Do not try to open or repair your flash unit since the electric circuit inside carries a high voltage. If your flash needs repair or does not work correctly, return it to where you bought it. Opening the flash unit voids the warranty.

Specifications:

Type of camera	:	35 mm camera
Guide Number	:	16 m meter with ASA 100 film
Power source	:	Two alkaline-type penlite (AA) batteries
Recycle time	:	About 8 seconds with alkaline batteries
Number of flashes	:	About 200 with alkaline batteries
Flash duration	:	1/1,000th second for manual operation 1/1,000th – 1/30,000th second for auto operation
Illumination angle	:	45° vertical, 55° horizontal
Aperture setting for auto	:	f 4 with ASA 80 – 100 film f 8 with ASA 400 film
Effective distance range for auto	:	3 to 13 feet or 1 to 4 meters

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Which is the best user? I've had brand new fresh out of the box equipment fail miserably (GaMi, Minicord, Univex Mercury,) and some taped-up units that I hide from my friends have been performing flawlessly since 1958. My favorite flash gun smiles the smile of someone who's spent too much time at the bottom of a pick'em bin.

The next time you visit a camera show, look for someone selling flash guns out of a box. You may have to tip the box over to do some serious bottom fishing.

If you find a small half dollar size unit with a distinctive snoot, it's very likely a Toshiba Popular.

Populars were imported by the millions bearing the logos of every distributor and retailer from J.C. Penny, to Star D.

Most have Auto-Manual options. Some have battery test buttons. The guide number is a respectable 56 at ISO 100. You can spot a Popular in the classifieds by the price tag.

The reason I love them, and the reason I'm convinced God smiles on subminiature, is that the smallest and cheapest flash guns have the shortest flash duration.

The reasons are technical. The bottom line is that the dinky little Toshiba Popular goes off at a bullet stopping 1/30,000 of a second.

If you ever want to photograph milk drops or do some serious ballistic analysis, keep it in mind.

All in all, there are so many inexpensive little flash units, now may be the best time in years to toss out all our dust collectors, buy something reliable, and ignore everything else that winks from behind a shiny showcase.

Subminiature lives!

Al D.

STROBE EQUIPMENT

Strobonar 8985 Heavy Duty, Recharges, Bracket But no Battery.....$69
Minolta 280 PX flash.....$69
Minolta 2800 Flash/Macroum. LN.....$89
Vivitar soft bounce light diffuser.....$10
~~Soligor~~ dedicated 24 D NEW.....~~$19~~
JC Penny compact flash.....$5
~~Zeiss Ikon~~-Kobilz 4.....~~$19~~
Braun Hobby F34 R.....$19
Sunpak 933 Dedicated, ex+++.....$59