ATEC 1531-AB Electronic Stroboscopes Owner's Manual

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ATEC 1531-AB Electronic Stroboscopes

Product Information

The Strobotac electronic stroboscopes by Advanced Test Equipment Corp. are high-quality instruments designed for various applications. The product line includes two models: 1531-AB and 1538-A.

The 1531-AB model is suitable for most applications and offers flash rates up to 25,000 fpm with an accuracy of +1.0%. It features a unique, rugged carrying case for portability and a flash duration ranging from 0.8 s to 3.0 s for clear, crisp images.

The 1538-A model is designed for situations requiring very high flash rates. It provides six times the maximum flash rate of the 1531-AB model and can be operated with a rechargeable battery for portability. The 1538-A can also be used with an optical extension lamp (1538-P2 accessory).

Both models offer versatile synchronization options, allowing various trigger inputs such as contact closures, pulses, or sinewave signals to trigger the flash. They also provide an output trigger for triggering another device. Single-flash photographs of high-speed motion can be easily captured with any still camera.

Model 1531-AB and 1538-A Strobes

Specifications

- MODEL 1538-A:
- High speed, adjustable fl ash rates up to 150,000 fpm provide direct reading in four ranges with ±1.0% accuracy
- Flash duration from 0.5 µs to 3.0 µs for clear, crisp images
- Unique, rugged carrying case for portability
- Can be battery operated

SERIES 1531-AB:

- Flash Rate: 110 to 25,000fpm in 3 ranges; speeds up to 250,000rpm can be measured.
- Accuracy: +1.0% of reading after calibration on one range against 50-to-60Hz line frequency.
- External Trigger: Input and output connections are phone jacks
  - Input: Contact opening, pulse ≥ +6V pk-pk, sinewaor v ≥e 2V rms for f>5Hz.
  - Output: Negative pulse ≥ 500 to1000V
- Power: 100 to 125 V or 200 to 250 V, 50 to 400 Hz, 25 W max
- Light Output: Beam width 10º degrees at ½-intensity points.

Flashes per minute	Duration* (µs)	Energy** (watt-seconds)	Beam intensity*** (candela)
at 690	3	0.5	11×10^6
at 4170	12	0.09	3.5×10^6
at 25,000	0.8	0.014	0.6×10^6

- * Measured at 1/3 peak intensity.
- ** Electrical input to lamp.
- *** Measured with silicon photo detector 1 meter from lamp; single-fl ash beam intensity is 18 x 106 candela

SERIES 1538-A:

- Flash Rate: Flashes per minute at 690, 4170, and 25,000 110 to 150,000fpm in 4 ranges; speeds up to

1,000,000 rpm can be measured

- Accuracy: 1% of reading after calibration on 670-to- 4170fpm range against 50-to-60Hz frequency
- External Trigger: Input and output connections are phone jacks
  - I Conput: ntac closurt e, ≥pulse +1V pk-pk, sinewaor v ≥e 0.35V rms for f>5Hz (3.5V at 10Hz)
  - ≥Output: +6V behind 400 Ω.
- Power: 100 to 125 V or 200 to 250 V, 50 to 400 Hz, 15 W max (can also be powered from 20 to 30 V DC, 12 W max)
- Light Output: Beam width 10º at ½-intensity points.

Flashes per minute	Duration* (µs)	Energy** (watt-seconds)	Beam intensity*** (candela)
at 690	3	0.5	15×10^6
at 4170	1.2	0.09	5×10^6
at 25,000	0.8	0.014	1×10^6
at 150,000	0.5	0.0023	0.16×10^6

- * Measured at 1/3 peak intensity.
- ** Electrical input to lamp.
- *** Measured with silicon photo detector 1 meter from lamp; single- fl ash beam intensity with – P4 is 44 x 106 candela

Product Usage Instructions

1. Choose the appropriate model based on your application requirements. The 1531-AB is suitable for most applications, while the 1538-A is designed for situations requiring very high flash rates.
2. Ensure that the stroboscope is connected to a power source within the specified voltage and frequency range. The 1531-AB can be powered by 100 to 125 V or 200 to 250 V, 50 to 400 Hz, with a maximum power consumption of 25 W. The 1538-A has the same power requirements but can also be powered from 20 to 30 V DC with a maximum power consumption of 12 W.
3. If synchronization is required, connect the appropriate trigger input to the stroboscope. Contact closures, pulses, or sinewave signals can be used as trigger inputs.
4. To trigger another device using the stroboscope, use the provided output trigger connection.
5. Adjust the flash rate according to your needs. The flash rate range varies between models.
6. For machine maintenance, real-time inspection of moving parts, printing press applications, motor troubleshooting, or stopping motion, position the stroboscope in a suitable location.
7. Use the stroboscope in conjunction with a still camera to capture single-flash photographs of high-speed motion.
8. If using the 1538-A model, consider using an optical extension lamp (1538-P2 accessory) for enhanced functionality.
9. When finished using the stroboscope, disconnect it from the power source and store it in a safe place.

For more detailed information, refer to the user manual provided by Advanced Test Equipment Corp.

Strobotac provides two high quality models to chose from to fulfi ll your electronic strobo-scopic needs. The 1531-AB for most applica-tions and the 1538-A for situations requiring very high fl ash rates. Both instruments offer

proven reliability.

Product Uses

- For machine maintenance
- Real time inspection of moving parts
- Printing press applications
- Motor troubleshooting
- For stopping motion
- MODEL 1531-AB:
- Flash rates up to 25,000 fpm with accuracy of +1.0%
- Unique, rugged carrying case for portability
- Flash duration ranging from 0.8 µs to 3.0 µs for clear, crisp images

Compact and accurate. These strobes are small portable fl ash-ing-light sources used to measure the speed of fast-moving devices or to produce the optical eff ect of stopping or slowing high-speed motion for observation. A build-in system uses the power-line frequency for quick and easy checks and adjustment of the fl ash-rate calibration. Each fl ash lamp/refl ector assembly is hinged at the panel and the refl ector swivels 360 degrees, for complete fl exibility. The cases have standard sockets (0.25 x 20 threads/inch) for tripod mounting. Versatile synchronization: A variety of trigger inputs can be used for fl ash synchronization. Contact closures, pulses, or sinewave signals will trigger the fl ash, and an output trigger is provided so the stroboscope, in turn, can trigger another device. Single-fl ash photo-graphs of high-speed motion are a snap with any still camera.
The diff erence: The 1531 is more economical to buy. On the other hand, the 1538 gives you six times the maximum fl ash rate of the former, and enable portable operation with a rechargeable battery. The 1538-A can also be used with an optical extension lamp.

*** 1538-P2 Extension Lamp; accessory for the 1538-A**

Features

- **Power:** 100 to 125 V, or 200 to 250 V, 50 to 400 Hz, 25 W max for 1531, 15 W max for 1538; 1538 can also be powered from 20 to 30 V DC, 12 W max.
- **Mechanical:** Flip-Tilt Case.
- Dimensions: 16.8 cm H x 27.0 cm W x 15.6 cm D (6.63″ x 10.63″ x 13″)
- **Weight:** 3.5 kg (7.5 lb.) net, 4.6 kg (10 lb.) shipping

ORDERING INFORMATION

Catalog Number	Item	Voltage Model (V)
1531-9430	1531-AB	115
1531-9440	1531-AB	230
1538-9701	1538-A	115
1538-9702	1538-A	230

OPTIONS

Calibration Data
1538-9601 1538-P1 Replacement Strobotron Flash Lamp, for 1531/1538

INCLUDES:
Calibration Certifi cate Traceable to NIST Adjustable Neck Strap Phone plug for input and output jacks Power Cord

Accessories for 1538-A only

- 1538-9602 1538-P2 Extension Lamp
- 1538-9603 1538-P3 Battery and Charger
- 1538-9604 High Intensity -Flash Capacitor; increases output

Advanced Test Equipment Corp.

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  - (800) 899-8438
- FAX: (516) 334-5988

Documents / Resources

	ATEC 1531-AB Electronic Stroboscopes [pdf] Owner's Manual 1531-AB, 1538-A, 1531-AB Electronic Stroboscopes, 1531-AB, Electronic Stroboscopes, Stroboscopes

References

- Test Equipment Rentals, Sales, Calibration | ATEC

- IET Labs a World Standard In Metrology - Home Page