PORTABLE STROBOSCOPES (Deluxe and Basic)

Nova-Strobe x Series

RoHS NIST CE

Nova-Strobe dbx

Nova-Strobe x - The standard for high intensity multi-function portable stroboscopes. Models are available with digital displays, battery or AC power, and a useful range of features which provide unmatched performance and value. Four models range from the Nova-Strobe **dbx** Deluxe the most versatile battery powered digital stroboscope with internal phase shifting, down to the Nova-Strobe **bax** Basic, the most cost effective AC powered digital stroboscope.

Both the battery powered Nova-Strobe **dbx** and AC powered Nova-Strobe **dax** provide a range of 30 to 20,0000 flashes per minute and an accuracy of ±0.002 of setting. Flash rates are easily adjusted to fractional RPM by a coarse/fine control knob. Individual TTL compatible input and output jacks are provided for 'daisy chaining' of multiple strobes, triggering from an external source, or providing a trigger signal to external equipment.

Both dbx and dax provide internal phase shifting to keep the target precisely in view. Both provide x2 and ÷2 capability for distinguishing actual RPM from harmonic frequencies. In addition, 9 user presetable memory flash rates for repetitive measurements and storage of the last flash rate measured are included.

Features All Nova-Strobes, Deluxe and Basic:

- Internal rechargeable batteries or AC powered models
- Weighs less than 2.0 Lbs. for easy handling
- More than 20% brighter Xenon light than competitors
- Electronic switching provides continuous cool operation
- Tripod mounting bushing in handle

In addition, Nova-Strobe **dbx** and **dax** Plus models have:

- N.I.S.T. Traceable Certificate of Calibration included
- Internal phase shifting for easy reference target viewing
- Tachometer mode, speed measurement up to 250,000 RPM
- Power for optional sensors
- Low battery indicator

Nova-Strobe dbx Deluxe

Common Applications:

- Non-contact RPM
- Diagnostic Inspection
- Bent blades/shafts
- Slipping/worn belts
- Printing Press
- Stop-action Inspection
- Textiles

Select optional sensors for tachometer mode (see page 9)

TTL compatible input/output 1/8" (3.5mm) phone plugs

Nova-Strobe bbx/bax Basic Digital LCD Display

Nova-Strobe dbx Kit

Ordering Information

Nova-Strobe bax 115 Stroboscope, AC powered
Nova-Strobe bax 230 Stroboscope, AC powered
Nova-Strobe dax 115 Stroboscope, AC powered
Nova-Strobe dax 230 Stroboscope, AC powered
Nova-Strobe bbx 115/230 Stroboscope, battery Powered, universal PSC-2U (115/230 VAC) recharger (USA, UK, AUS, EURO plug)
Nova-Strobe dbx 115/230 Stroboscope, battery powered, universal PSC-2U (115/230 VAC) recharger (USA, UK, AUS, EURO plugs)
Also available in Kit form including; Stroboscope Recharger, spare lamp and carrying case.

Specifications	Nova-Strobe dbx, Deluxe Battery Powered	Nova-Strobe dax, Deluxe AC Powered	Nova-Strobe bbx, Basic Battery Powered	Nova-Strobe bax, Basic AC Powered
Range Flashes/Minute	30-20,000 FPM (Flashes Per Minute)		30-10,000 FPM (Flashes Per Minute)	
Display	6 Digit Numeric and 5 digit Alphanumeric LCD			
Accuracy/Resolution	0.002% of setting or +/- 1 lsd /0.01 FPM			
Flash Energy/Duration	230 mJoule up to 3450 FPM / 8-20 µsec			
Average Power-Watts	>13W above 3450 FPM			
Flash Tube & Life	High Power Xenon - 100 million flashes typical			
External Triggers - in/out 1/8" (3.5mm) Phone Jacks	TTL (24Vdc Max) Input. Provides 3.3 Vdc TTL output		N/A	
Tachometer Mode	5-250,000 RPM - Use with Optional Remote Sensor		N/A	
Programmable Memory	Yes	Yes	N/A	
Internal Phase Shift	Yes	Yes	N/A	
Operating Time	2 hours typical @ 1800 FPM	Continuous	2 hours typical @ 1800 FPM	Continuous
Power Supply	Internal NiMH rechargeable batteries	115 Vac, 50-400 Hz or 230 Vac, 50-400 Hz	Internal NiMH rechargeable batteries	115 Vac, 50-400 Hz or 230 Vac, 50-400 Hz
Weight	1.9 Lbs. (.86 kg)	1.5 Lbs. (0.68 kg)	1.9 Lbs. (.86 kg)	1.5 Lbs. (0.68 kg)
Size (L x W x H)	Body: 9" x 3.66" x 3.56" (229 x 93 x 90 mm); Reflector Housing: 4.8" (122 mm) diameter; Handle: 4.25" (108 mm) long			

PORTABLE STROBOSCOPES (external phase-shifting)

Phaser-Strobe pbx

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The Phaser-Strobe pbx incorporate the unique design features of the Nova-Strobe dbx with an increased operating range of 30 to 50,000 flashes per minute, as well as external phase- shifting. The unique digital adjustment knob can select the decade for adjustments, so coarse and fine adjustments of flash rates are made quickly and with significantly better resolution than competitive units. The memory feature of the **Phaser-Strobe pbx** allows nine flash rates to be stored - displayed in flashes per minute or flashes per second. **Phaser-Strobe pbx** operates with internal rechargeable batteries or continuously from AC line power with the power supply/recharger.

Features:

- N.I.S.T. Traceable Certificate of Calibration included
- Phase Shift adjustable as phase angle or time with resolution to 0.01º and 0.01 msec
- Virtual RPM mode provides slow motion viewing for high speed events
- Backlit alphanumeric LCD shows flash rate, degrees, time
- Store and recall nine memory settings
- TTL compatible input/output jacks, power for optional sensors
- Tachometer mode from Remote Sensors (see page 9)

Specifications	Phaser-Strobe pbx
Flash Range	30-50,000 FPM (Flashes/Minute) 0.5-830 FPS (Flashes/Sec) (Hz)
Accuracy	±0.002% of Setting +/- least significant digit
Digital Adjustment Knob	36 detents per revolution and blinking decade selection
Flash Rate Resolution (Internal Triggering)	0.01 to 1.0 FPM (Menu Selectable)
Operating Time	2 hours typical @ 1800 FPM or continuos AC power
Phase Delay - Degrees	0.1 to 359.9 degrees
Time Delay - Seconds	0.01 to 1000 msec.
Virtual RPM (Slow Motion)	0-200 VRPM
Flash Energy (Typical)	230mJoule up to 3450 FPM
Flash Duration (Typical)	8-20 usec
Average Power - Watts	11W @ 3000 FPM; >13W @ 3450 FPM
Tachometer Mode	5-250,000 RPM from external trigger
External Input	Input Pulse - 0.5 usec min, TTL to 24V max (1/8" phone plug)
Trigger Output/Remote Sync	3.3V TTL Compatible 40 usec pulse-Positive/Negative
Power	Internal rechargeable batteries with AC power supply/recharger
Weight	1.9 Lbs. (0.85 kg) including batteries

Phaser-Strobe pbx

Common Applications:
- Calibration of Tachometers
- Diagnostic Inspection
- Engine R&D
- Textiles
- Centrifuges
- Shaker Tables

Compatible with Remote Sensors (see page 9).

Ordering Information
Phaser-Strobe pbx 115/230 - Stroboscope with PSC-pbxU (115/230 Vac) Power Supply/ Recharger
Phaser-Strobe pbx Kit 115/230 - Same as above with Spare Lamp and Latching Carrying Case

PORTABLE STROBOSCOPES (for use with Vibration Data Collectors)

Vibration-Strobe vbx

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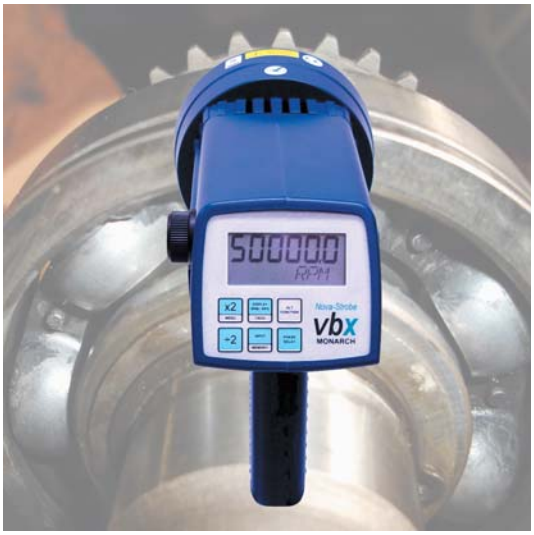
The vbx vibration strobe is uniquely designed to provide precise, instantaneous synchronization to a number of data collectors and FFT Analyzers triggered by an accelerometer. Built for portable applications, the **vbx** is the perfect lightweight phase analysis tool. **vbx** allows for the measurement of phase without stopping the machinery to install reflective tape. Phase analysis is quick and accurate using the Filter Bandwidth Selector and the Relative Phase Adjustment. Unique "Tracking Filter" maintains phase lock to input pulse. **vbx** can power and be triggered by accelerometers with or without data collectors.

Kit includes: Strobe, interface cable, universal p.s./recharger, spare lamp in carry case.

Specifications	Vibration-Strobe vbx
Flash Range	30-50,000 FPM (Flashes/Minute) 0.5-830 FPS (Flashes/Sec) (Hz)
Accuracy	±0.002% of Setting +/- least significant digit
Digital Adjustment Knob	36 detents per revolution and blinking decade selection
Flash Rate Resolution (Internal Triggering)	0.01 to 1.0 FPM (Menu Selectable)
Indicators	Battery Level, On Target, Time, Auto, Alt, Tach, Lock, and EXT icons
Operating Time	2 hours typical @ 1800 FPM or continuos AC power
Phase Delay - Degrees	0.1 to 359.9 degrees
Tracking Filter	Selectable Wide and Narrow Bandwidths. Filter may not lock below 100 fpm
Time Delay - Seconds	0.01 to 1000 msec.
Virtual RPM (Slow Motion)	0-200 VRPM
Flash Energy (Typical)	230mJoule up to 3450 FPM
Flash Duration (Typical)	8-20 usec
Average Power - Watts	11W @ 3000 FPM; >13W @ 3450 FPM
Tachometer Mode	5-250,000 RPM from external trigger
External Input	Input Pulse - 0.5 usec min, TTL to 24V max (1/8" phone plug)
Trigger Output/Remote Sync	3.3V TTL Compatible 40 usec pulse-Positive/Negative
Power	Internal rechargeable batteries with AC power supply/recharger
Weight	1.9 Lbs. (0.85 kg) including batteries



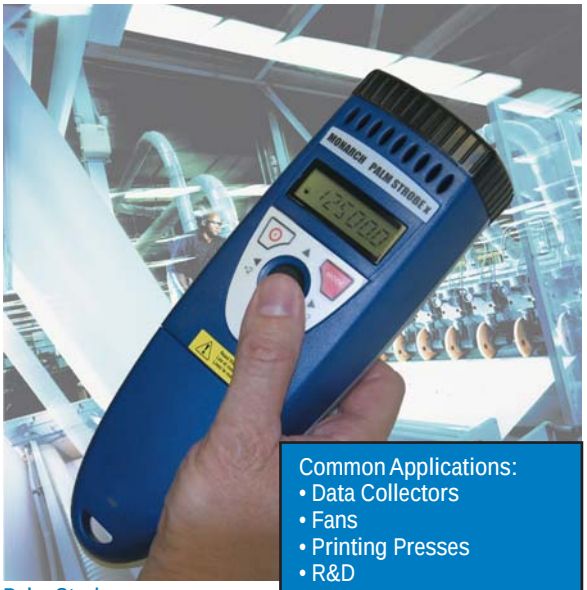
Vibration Strobe vbx

Ordering Information
Contact Factory for available Models.

PORTABLE STROBOSCOPES

Palm Strobe x (psx)

RoHS NIST CE



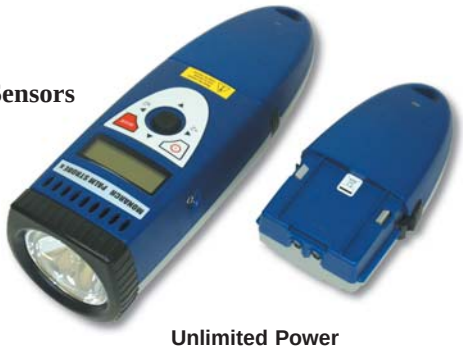
Palm Strobe x

Common Applications:
- Data Collectors
- Fans
- Printing Presses
- R&D
- Utilities
- Felt Belts/Conveyor
- Vibration Studies
- Textiles

PALM STROBE x Offers excellent brightness, exceptional features and extra long battery life. Unique one-touch joystick-type button allows single hand operation for fast fractional RPM tuning. Select mode of operation for internal tuning, external TTL input, tachometer display and x2 ÷2 functions. Eight memory positions provide rapid recall of user defined frequencies.

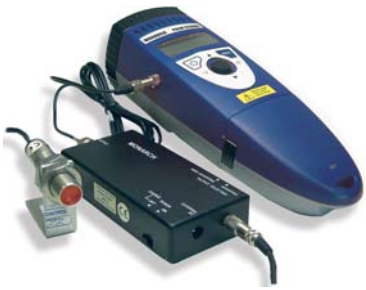
Features:

- **Removable Plug-in Battery Pack**
- **Easy One Hand Operation**
- **Light weight, Pocket Size**
- **Flash Rates to 12,500 FPM**
- **Tachometer Mode from Remote Sensors**
- **TTL Compatible Input/Output**



Unlimited Power
World's First Stroboscope with removable, rechargeable battery pack (patented).

Palm Strobe x Deluxe Kit



Remote Trigger
Supports optional SPSR(self-powered sensor) trigger. See page 10.

Universal Power 115/230Vac
Universal Power Supply allows you to recharge anywhere in the world.

Portable Inspection Light
Unique Field Holster gives you true mobility.

TTL Pulse input/Output Cable
Input/output cable with BNC connector.

Ordering Information

Palm Strobe x 115/230 - Stroboscope with PSC-2U (115/230Vac) recharger *

Palm Strobe x Pak 115/230 - Same as above with spare battery and holster

Palm Strobe x Kit 115/230 - Stroboscope with PSC-2U (115/230 Vac) recharger *, Spare Lamps and Latching Carrying Case

Palm Strobe x Deluxe Kit - Stroboscope and Battery with PSC-2U (115/230 Vac) recharger *, Spare Lamps & Battery, Holster and Latching Carrying Case

* Includes USA, Australian, UK and Euro plug adapters.

Specifications	Palm Strobe x Series
Internal Mode Range	100 - 12,500 FPM (Flashes per Minute)
Light Power	7.9 watts @ 6000 FPM, 150 mJoules up to 3100 FPM
Flash Lamp Life	100 million flashes typical
Flash Duration	10 - 30 microseconds typical
Display	6-digit alphanumeric backlit LCD display
Flash Rate Resolution	0.1 FPM
Flash Rate Accuracy	Greater of ±0.01% of reading or ±0.5 FPM
Tachometer Mode	5 to 250,000 RPM
External Input	0 to 5 Vdc (12 Vdc max.) TTL compatible, positive edge triggered
Output Pulse	0 to 5 Vdc typical- 350 µsec positive pulse
Run Time	2 Hours typical @ 1800 FPM >1 Hour typical @ 6000 FPM
Memory	8 programmable flash rates and last flash rate at power down
Adjustment	Four quadrant tuner button with blinking decade select for flash rate up and down, multiply by 2 and divide by 2
Modes	Internal, External, Tachometer, Preset, x or ÷2, Locked On
Battery Power	Removable 6Vdc rechargeable battery pack
Recharger(s)	PSC-2U Recharger, 100-240Vac, 50/60Hz, includes 4 adapters
Weight	1.2 lbs. (0.55 kg) including battery
Strobe Dimensions	3.04 x 9.34" (77 x 237 mm)

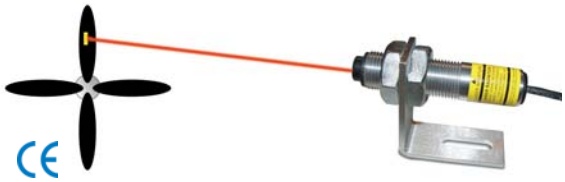
for Tachometers & Stroboscopes or stand alone use

Optical LED (1-250,000 RPM) *Most popular.*

ROS (Remote Optical Sensor): Threaded stainless steel remote optical sensors have a visible red LED light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope. Modulated and High Temperature versions available (to 257°F). **Common usage**: Wide range of general purpose applications in relatively clean environments.

Operating Distance	3 feet (1 m) and 45° from reflective tape
Speed Range	1-250,000 RPM
Operating Temperature	-14° to 158°F (-10° to 70°C)
Power Required	3.3 to 15 Vdc @ 45 mA
Output Signal	TTL same as source
Standard Cable	8 feet (2.4 m)
Dimensions	2.9" (L) x 0.625" diameter (73 x 16mm)

Optical Laser (1-250,000 RPM) *Distances to 25 feet.*



ROLS (Remote Optical Laser Sensor): Threaded stainless steel remote optical laser sensors have a visible red laser light source and green LED 'On Target' indicator. Performs over a wide speed range and operating envelope.

Operating Distance	Up to 25 feet (7.62 m) and 60° offset from target
Speed Range	1-250,000 RPM
Operating Temperature	-40° to 180° F -40° to 80° C
Power Required	3.3-15 Vdc @ 35mA
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4 m)
Dimensions	3.12" (L) x 0.71" (M16 x 18 x 79.4mm)

Proximity (1-60,000 RPM) *Rugged industrial sensor.*

P5-11: A two wire probe style inductive sensor for use up to 0.2 inches (5 mm) from 0.5 inch (12 mm) metallic target such as bolt head or shaft locking key. **Common usage:** Permanent installation in harsh industrial environments.

Operating Distance	0.2" (5mm) from 0.5" (12mm) metallic target
Speed Range	1-60,000 RPM
Operating Temperature	-4° to 140° F (-20° to 60° C)
Power Required	7.7 to 9 Vdc, 3mA
Output Signal	Namur (DIN 19 234)
Standard Cable	6 Feet (1.8 m)
Dimensions	1.3" (L) x 0.43" (32 x 11 mm)

Magnetic (1-99,999 RPM) *Self-powered gear sensor.*

M-190W or M-190P: Most popular sensor for use with 60 tooth 20 pitch gears. Sensor mounts within 0.005 inches (0.127 mm) of a minimum 0.1 inch (2.5 mm) target. Requires no power from the display module and self-generates an AC signal. **Common usage**: Ferrous metals, primarily gear teeth.

Operating Distance	0.005" (0.127 mm) gap with 0.1" target (2.5mm) min.
Speed Range	1-99,999 RPM
Operating Temperature	-100° to 225°F (-73° to 107°C)
Power Required	None (Self Generating)
Output Signal	190V P-P
Standard Cable	8 Feet (2.4 m)
Dimensions	2.0" (L) x 0.625" (50 x 16mm)

Magnetic with Amplifier Module (1-99,999 RPM) *Enhances performance of M-190 magnetic sensor.*

MT-190W or MT-190P: Amplifier extends operating gap to 0.25 inches (6.35 mm) from the target. Frequently used on gears as the M-190, but can also sense bolt heads or shaft keys and provides a 0-5V TTL output signal. **Common usage:** Ferrous metals including bolt heads or shaft keys in addition to gear teeth.

Operating Distance	0.25" (6.35mm) gap with 0.1" target (2.5mm) min.
Speed Range	1-99,999 RPM
Operating Temperature	-100° to 225°F (-73° to 107°C)
Power Required	3.3 to 24 Vdc, 4mA
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4m)
Dimensions	2.0" (L) x 0.625" (50 x 16mm)

Inductive (200-20,000 RPM) *Gasoline Engine RPM.*

GE-200: Ideal sensor for gasoline engine RPM, working 0.5 to 4.0 inches (12 to 100 mm) from ignition coil or magneto.
Common usage: 2-cycle and 4-cycle gasoline engines.

Operating Distance	Up to 4 inches (100mm)
Speed Range	200-20,000 RPM
Operating Temperature	0° to 175°F (-18° to 80°C)
Power Required	3.3 to 24 Vdc, 4mA
Output Signal	TTL Same as Source
Standard Cable	15 Feet (4.5 m)
Dimensions	2.16" (L) x 0.82" (55 x 21 mm)

Infrared (1-999,990 RPM) *High speed sensor.*

IRS-W or IRS-P: Ideal sensor for working 0.5 to 1.0 inch (12 to 25 mm) from high speed equipment or other applications providing only contrasting light and dark surfaces or beam interruption by solid objects.
Common usage: Dentist and other high speed drills, slots or gear teeth. Does not require reflective tape.

Operating Distance	0.5 to 1.0" (12 to 25 mm)
Speed Range	1-999,990 RPM
Operating Temperature	-10° to 212°F (-23° to 100°C)
Power Required	3.3 to 15 Vdc
Output Signal	TTL Same as Source
Standard Cable	8 Feet (2.4 m)
Dimensions	2.9" (L) x 0.625" diameter (73 x 16mm)

NOTE: W = tinned wire leads, P = 1/8" (3.5mm) phone plug connector. ROS is available with 8 or 25 foot cable.

NOTE: Additional cable length for all sensors (up to 500 feet) can be purchased and added in the field.