

# How much does wasted energy cost you every year?

An energy audit helps by revealing how and where energy is being wasted. Unnecessarily energy wastages lead to unwanted costs, reduced lifespan and reduced efficiency of machines.

Fluke has a variety of instruments to help you evaluate and identify areas to reduce energy wastage in your facility. Accurate, rugged and easy to use, these tools can be easily incorporated into a daily maintenance process for increased efficiency.





## Fluke ii910 Precision Acoustic Imager

### Application:

Other than causing energy wastage and increasing costs, leaks can also be a form of contamination entering the systems. **If not rectified in time, leaks can become worse and incur significant hidden costs.**

### Benefits:

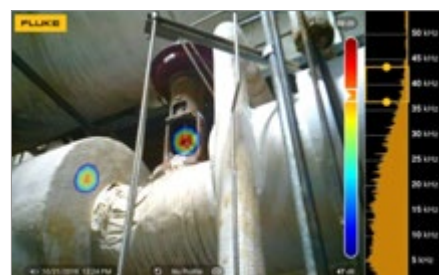
Through a routine maintenance, Fluke ii910 Precision Acoustic Imager allows user to detect compressed air/gas/vacuum leaks or partial discharge from electrical systems. The Fluke ii910 is easy to operate and can be used in a noisy environment. With all the leaks and partial discharges fixed, this can help to minimize energy wastage and ensure a safe working environment.



Detection of Partial Discharges and Arcing in HV/MV cabinets and on bus-bars

Default Leak Summary					
#	Mode	File Name	LeakID	Location	Est. Leak Rate
1	X	Default_101001010101	0.7		6.3 l/min
2	X	Default_101001010101	0.8		6.6 l/min
				Total:	12.9 l/min
				Est. Costs	
				64 EUR/year	
				67 EUR/year	
				131 EUR/year	

Models	ii910
Specifications	
Number of microphones	64 digital MEMS
Frequency band	2 kHz to 100 kHz
Operation distance range	0.5 to > 120 meters
Field of view	63° +/- 5°
Minimum frame rate	25 FPS
Resolution	1280 x 800 (1,024,000 pixels)
Touchscreen	Capacitive
Acoustic Image	SoundMap™ image
Image format	.jpg or .png
Video format	.mp4
Rechargeable batteries	2x with each lasting 6 hours
Standard palettes	3: Grayscale, Ironbow, Blue-Red
Warranty	2 year



Leaks in the steam trap





## Fluke 1777 Power Quality Analyzer

### Application:

Apart from conducting energy studies for power consumption, it is also important to analyze the power quality condition. Power quality problems such as harmonics and unbalance can contribute to hidden electrical power losses. A simplified platform to support demand for logging and analysis needs can be found in the Fluke 1777 Power Quality Analyzer.

### Benefits:

The portable and rugged design supports operations even in harsh environment. The guided interface eliminates the complexities to meet power quality studies – dips, swells, voltage, current, power measurements. Do not miss a critical power quality event with transients capability as high as 20MS/s.



Power Quality measurements is easier than ever before

Models	1777
Applications	
Energy surveys and load testing	•
Harmonic surveys	•
Nuisance circuit breaker tripping	•
Power utility power quality surveys	•
Discovery of equipment failures caused by transients	•



## Fluke 805 Vibration Meter

### Application:

The Fluke 805 FC is not a vibration pen; it's a meter. A Fluke meter that eliminates the confusion of vibration screening and provides reliable measurements you can trust to make critical go or no-go maintenance decisions. With the Fluke 805, you can identify the strength and severity of vibration and easily track the data over time to monitor an asset's condition

### Benefits:

It is an essential screening tool to quickly determine which assets has signs of mechanical problem based on the overall vibration and to test the condition of the bearings.



Overall vibration levels for screening and trending

Models	805
<b>Vibration Meter</b>	
Low frequency range (overall measurement)	10 Hz to 1,000 Hz
High frequency range (CF+ measurement)	4,000 Hz to 20,000 Hz
Severity levels	Good, satisfactory, unsatisfactory, unacceptable
Vibration limit	50 g peak (100 g peak-peak)
A/D converter	16-bit
Signal to noise ratio	80 dB
Sampling rate	Low frequency 20,000 Hz High frequency 80,000 Hz
Real time clock backup	Coin battery
<b>Sensor</b>	
Sensitivity	100 mV g $\pm$ 10%
Measurement range	0.01 g to 50 g
Low frequency range (overall measurement)	10 Hz to 1,000 Hz
High frequency range	4,000 Hz to 20,000 Hz
Resolution	0.01 g
Accuracy	At 100 Hz $\pm$ 5% of measured value
<b>Amplitude Units</b>	
Acceleration	g, m/sec <sup>2</sup>
Velocity	in/sec, mm/sec
Displacement	mils, mm

<b>Infrared Thermometer (Temperature Measurement)</b>	
Range	-20°C to 200°C (-4°F to 392°F)
Accuracy	±2°C (4°F)
Focal length	Fixed, at ~3.8 cm (1.5 in)
<b>External sensor</b>	
Fluke supports but does not provide external sensors	
Frequency range	10 Hz to 1,000 Hz
Bias voltage (to supply power)	20 VDC to 22 VDC
Bias current (to supply power)	Maximum 5 mA
<b>Firmware</b>	
External interfaces	USB 2.0 (full speed) communication
Data capacity	Database on internal flash memory
Upgrade	Through USB
Memory	Up to 3,500 measurements
<b>Radiated Emission</b>	
Electrostatic discharge: burst	Standard EN 61000-4-2
Electromagnetic interference	Standard EN 61000-4-3
RE	Standard CISPR 11, Class A
<b>Environmental</b>	
Operating temperature	-20°C to 50°C (-4°F to 122°F)
Storage temperature	-30°C to 80°C (-22°F to 176°F)
Operating humidity	10% to 95% RH (non-condensing)
Operating/storage altitude	Sea level to 3,048 meters (10,000 feet)
IP rating	IP54
Vibration limit	500 g peak
Drop test	1 meter
<b>General Specifications</b>	
Battery type	AA (2) Lithium Iron Disulfide
Battery life	250 measurements
Size (L x W x H)	24.1 x 7.1 x 5.8 cm (9.5 x 2.8 x 2.3 in)
Weight	0.40 kg (0.89 lb)
Connectors	USB mini-B 7-pin, stereo audio output jack (3.5 mm Audio Plug), external sensor jack (SMB connector)





## Fluke 810 Vibration Tester

### Application:

Whether it is coupling, bearing or looseness, these mechanical inefficiencies will result in frictional wear and energy waste. The only way to determine a problem is to measure. However, a vibration pen or meter is unable to identify what the exact problem is. Diagnose the root cause of a problem with the Fluke 810 Vibration Tester.

### Benefits:

The Fluke 810 comes with built-in smart algorithm to diagnose mechanical problems and provides answers right in the field. It can provide important details such as the cause, location, severity of the issue and repair recommendations.



Identify bearing problems, misalignment, looseness, and unbalance



Models	810
Diagnostic Specifications	
Standard Faults	Unbalance, looseness, misalignment and bearing failures
Analysis For	Motors, fans, blowers, belts and chain drives, gearboxes, couplings, centrifugal pumps, piston pumps, sliding vane pumps, propeller pumps, screw pumps, rotary thread/gear/lobe pumps, piston compressors, centrifugal compressors, screw compressors, closed coupled machines, spindles
Motor Rotational Speed Range	200 rpm to 12000 rpm
Diagnosis Details	Plain-text diagnosis, fault severity (slight, moderate, serious, extreme), repair details, cited peaks, spectra
Tester specifications	
IP rating	IP54
A/D converter	4 channel, 24 bit
Dynamic range	128 dB
FFT resolution	800 lines
Battery	Lithium-ion, rechargeable, 8 hours operating life
Onboard storage capacity	2 GB internal + user accessible slot for additional storage
Sensor Specifications	
Sensor Type	Accelerometer
Tachometer Specifications	
Detection	Laser Diode Class 2





## Fluke 830/BT, Laser Alignment Tool W/BLUETOOTH Installed

### Application:

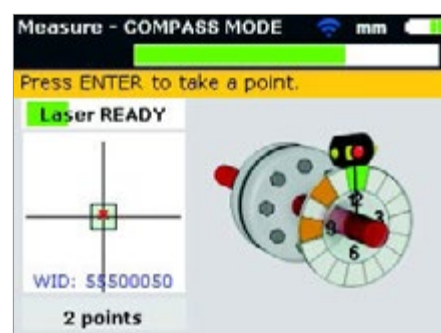
Rotating machinery often face mechanical issues that can be a result of shaft misalignment. The mechanical issues can deteriorate and lead to severe wear and energy losses. Having fast, accurate and actionable solutions is essential to keep your plant up and running.

### Benefits:

Unlike using straight-edge method or dial indicators, the Fluke 830 computes the alignment and provides you the answers to quickly align your machine. The unique "All-in-One" result screen shows you both coupling results and feet corrections (vertical and horizontal) in real terms making it easy to take corrective action.



I. Set-up



II. Measure



III. Diagnose



Guided laser measurement technology for shaft alignment



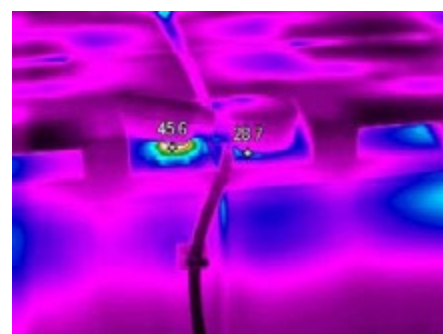
## Fluke TiS75+ Thermal Imager

### Application:

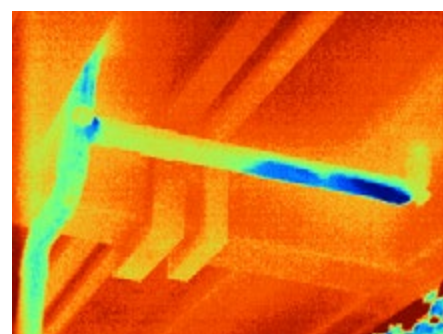
Thermal Imager for use in Predictive Maintenance is critical in ensuring electrical, mechanical, process systems are in a healthy state. It is a noncontact tool that can be easily incorporated into your routine maintenance tasks to inspect your building/facility area.

### Benefits:

Be proactive instead of reactive and ditch the clipboard. The Fluke TiS75+ thermal imaging solution plays an important role in reducing unplanned downtime and cost through the various inspections. Store inspection notes and location information directly with the captured images with this camera for a proactive maintenance (PM) program.



Loose Termination



Building Leaks

Models	TiS75+
<b>Key features</b>	
Infrared resolution	384 x 288 (110,592 pixels)
IFOV	1.91 mRad
Field of view	42° x 30°
Minimum focus distance	0.15 m
Focus system	Manual focus
Wireless connectivity	Yes, to PC, iPhone® and iPad® (iOS 4s and later), Android™ 4.3 and up, and WiFi and LAN (where available)
Fluke Connect app compatible	Yes*, connect your camera to your smartphone, and images taken automatically upload to the Fluke Connect app for saving and sharing
Fluke Connect Assets optional software	Yes*, assign images to assets and create work orders. Easily compare measurement types - whether mechanical, electrical or infrared images - in one location
Asset Tagging	Scan a QR code to automatically organize and file thermal images with Fluke Connect™
IR-Fusion technology	AutoBlend continuous 0 % to 100 %. Adds the context of the visible details to your infrared image
Picture-InPicture (PIP)	Yes
Display	3.5" (8.9 cm landscape) touchscreen 640 x 480 LCD
Built-in digital camera (visible light)	640 x 480
Frame rate	9 Hz or 27 Hz models
Dew point calculation	Yes
Thermal sensitivity	40mk
Level and span	Smooth auto and manual scaling
Fast auto-rescale in manual mode	Yes





**LM-200LED:**  
Digital LED Light Meter,  
Silicon Photodiode and Filter

## LM-200LED LED Light Meter

### Application:

A professional, portable, easy-to-use digital light meter specifically designed to accurately measure light output of LED light sources. The Amprobe LM-200LED light meter has a silicon diode sensor and filter and is designed for indoor operation. The dual-scale meter also features an angled light cosine correction to calculate the amount of light, regardless of the light's angle.

### Benefits:

- Dual-scale meter measures light output from LED light sources up to 200,000 lumens per square meter (lux) or 20,000 footcandles (fc)
- Data hold freezes readings on the display
- MAX recording displays the highest light measurement
- Measuring light source includes all visible ranges
- Spectral response close to CIE luminous spectral efficiency

Models	LM-200LED
Specifications	
Sensor	Silicon photodiode and filter
Range	200, 2000, 20000, 200000 Lux      20, 200, 2000, 20000 Foot-candles
Display	Display
Zero	•
Low Battery Indication	The 'E' is displayed when the battery voltage drops below the operating level
Temperature / Humidity	<b>Operating</b> 14 °F to 122 °F (-10 °C to 50 °C), 0 to 80%RH <b>Storage</b> 14 °F to 122 °F (-10 °C to 50 °C), 0 to 70%RH
Altitude/Environment	Up to 2000m, Indoor operation
Accuracy	+/-3% (Calibrated to standard incandescent lamp 2856° K) and corrected LED day while-light spectrum. +/-8% other visible light sources
Operating	14 °F to 104 °F (-10 °C to 40 °C), 0 to 80 % RH
Storage	14 °F to 122 °F (-10 °C to 50 °C), 0 to 70 % RH
Power Supply	9V NEDA 1604, IEC 6F22, JIS 006P battery
Battery Life	200 hours
Auto Power Off	Approximately 6 min
Dimension	<b>Base</b> 5.1 x 2.5 x 1.5 in (130 x 63 x 38 mm) <b>Sensor</b> 3.2 x 2.2 x 1.1 in (80 x 55 x 29 mm)
Weight	0.48 lb (220 g) (including battery)
Agency Approvals & Certifications	CE - EMC EN61326-1



Measure in lux or foot-candles,  
with one button to switch  
between display options

## Fluke 941 Light Meter

### Application:

Designed for use in multiple environments, the Fluke 941 light meter is easy to use and provides clear data display for clean rooms, agriculture and HVAC operations.

### Benefits:

The Fluke 941 is a handheld luminometer that can measure visible light sent from a variety of light sources, including fluorescent, metal halide, high pressure sodium and incandescent lamps. It is a portable tool that measures light up to 20,000 fc of lux with an accuracy of .01 fc/lux.

Models	941
Measurement parameter	
Range	20, 200, 2000, 20000, 200000 Lux 20, 200, 2000, 20000FC (footcandle)
Precision	±3% (at 2854°K - calibrated by the common incandescent lamp) ±6% other visible light sources Cosine error 30°±2% 60 °±6 % 80 °±25 % Cosine angle corrected according to the grade A general specifications of JIS C 1609:1993 and CNS 5119 A
Specifications	
Sampling rate	2.5 times/second for the digital display
Display	3½ digit 1999-point LCD screen
Sensor	Silicon photoelectric diode and optical filter
Environment	For indoor use
Power supply	9V NEDA 1604, IEC 6LR61
Battery life	200 hours; in about 6 minutes after auto power-off
Dimension (main unit)	130 × 63 × 38 mm
Dimension (sensor)	80 × 55 × 29 mm
Weight:	220 g (including the battery)
Warranty period:	1 year





## Fluke 922 Airflow Meter

### Application:

Today's HVAC technicians need a simple solution for diagnosing ventilation issues. The Fluke 922 makes airflow measurements easy by combining pressure, air flow, and velocity into a single, rugged meter. Compatible with most pitot tubes, the Fluke 922 allows technicians to conveniently enter duct shape and dimensions for maximum measurement accuracy.

### Benefits:

Monitor air pressure across key HVAC components. Ensure proper air flow balance. Promote good indoor air quality. Maintain a comfortable environment.

Models		922
Technical Specifications		
Air pressure	Range/Resolution/Accuracy	$\pm 4000$ Pascals / 1 Pascal / $\pm 1\% + 1$ Pascal $\pm 16$ inH <sub>2</sub> O / 0.001 inH <sub>2</sub> O / $\pm 1\% + 0.01$ inH <sub>2</sub> O $\pm 400$ mmH <sub>2</sub> O / 0.1 mmH <sub>2</sub> O / $\pm 1\% + 0.1$ mmH <sub>2</sub> O $\pm 40$ mbar / 0.01 mbar / $\pm 1\% + 0.01$ mbar $\pm 0.6$ psi / 0.0001 psi / $\pm 1\% + 0.0001$ psi
Air velocity	Range/Resolution/Accuracy	250 to 16,000 fpm / 1 fpm / $\pm 2.5\%$ of reading at 2000 fpm (10.00 m/s) 1 to 80 m/s / 0.001 m/s / $\pm 2.5\%$ of reading at 2000 fpm (10.00 m/s)
Air flow (volume)	Range/Resolution/Accuracy	0 to 99,999 cfm / 1 cfm / Accuracy is a function of velocity and duct size 0 to 99,999 / 1 m <sup>3</sup> /hr / Accuracy is a function of velocity and duct size 0 to 99,999 l/s / 1 l/s / Accuracy is a function of velocity and duct size
Temperature	Range/Resolution/Accuracy	0°C to 50°C / $\pm 1\% + 2^\circ\text{C}$ / 0.1°C 32°F to 122°F / $\pm 1\% + 4^\circ\text{F}$ / 0.1°F
General Specifications		
Operating temperature	0°C to +50°C (+32°F to +122°F)	
Storage temperature	-40°C to +60°C (-40°F to +140°F)	
Relative humidity	0% to 90%, non-condensing	
IP rating	IP40	
Operating altitude	2000 m	
Storage altitude	12000 m	
EMI, RFI, EMC	Meets requirements for EN61326-1	
Vibration	MIL-PREF-28800F, Class 3	
Max pressure at each port	10 psi	
Data storage capacity	99 readings	
Warranty	2 years	
Power, battery life	Four AA batteries	
Battery life	280 hours without backlight, 60 hours with backlight	



Easy to use without sacrificing performance



Powerful meter provides differential and static pressure, air velocity and flow readings



## Fluke 971 Temperature Humidity Meter

### Application:

Quickly take accurate humidity and temperature readings in the air. Temperature and humidity are two important factors in maintaining optimal comfort levels and good indoor air quality. The Fluke 971 is invaluable for facility maintenance and utility technicians, HVAC service contractors, and specialists who assess indoor air quality (IAQ).

### Benefits:

Backlit dual display of humidity and temperature. 99 record storage capacity. Ergonomic design with belt clip and protective holster. Quick response capacitance sensor with protective cover.

Models	971
Specifications	
Temperature	-20°C to 60°C (-4°F to 140°F) 0°C to 45°C (±0.5°C) -20°C to 0°C & 45°C to 60°C (±1.0°C) 32°F to 113°F (±1.0°F) -4°F to 32°F and 113°F to 140°F (±2.0°F)
Temperature accuracy	
Resolution	0.1°C / 0.1°F
Temperature update rate	500 ms
Temperature sensor type	NTC
Relative humidity range	5% to 95% RH
Relative humidity accuracy	10% to 90% RH @ 23°C (73.4°F) (±2.5% RH) (< 10%, > 90%RH @ 23°C (73.4°F) (±5.0% RH)
Humidity sensor	Electronic capacitance polymer film sensor.
Data storage capacity	99 points
Response time (humidity)	For 90% of total range - 60 s with 1 m/s air movement



Fluke 971 is the perfect tool for monitoring problem areas



Lightweight and easy to hold





## CO2-100 CO2 Meter

### Application:

Get Instant feedback on CO2 levels, with additional temperature and humidity measurement. The portable CO2-100 Air Quality Meter is designed to measure air quality compliance in occupied spaces such as offices, production floors, schools or hospitals. Comes with built in alarm to warn against dangerous CO2 levels.

### Benefits:

Low drift portable meter for checking indoor air quality. Triple display with simultaneous CO2, temperature and relative humidity readings. Selectable display of dew point and wet bulb. Air quality analysis with displays of: TWA display (time-weighted average) for 8 hrs period. 15 minutes STEL (short-term exposure limit) value. High performance low drift sensor designed with NDIR (non-dispersive infrared) waveguide technology.

Models	CO2-100
Specifications	
Measuring range	CO2 0 ~ 9999 ppm 5001 ~ 9999 ppm (out of scale range)
Temperature range	-10°C to 60°C (14°F to 140°F)
RH Range	0% ~ 95%
DP (Dew point temperature)	-20°C to 59.9°C (-4°F to 139.8°F)
WB (Wet bulb temperature)	-5.0°C to 59.9°C (24.8°F to 139.8°F)
Resolution	1ppm – CO2 concentration, 0.1°C / °F – Temp, 0.1% RH – humidity
Accuracy	±30ppm±5% of reading(CO2) (0~5000ppm) others rang accuracy are not specified ; ±0.6°C / ±0.9°F, ±3% RH (at25°C ,10~90%) others ±5% for other RH range
Sensing tech	CO2 -NDIR sensor
Humidity	Rotronic capacitor type
Warm-up time	30 seconds
Response time	About 30 seconds
Alarm sound level	80 dB
Operating condition	0°C to 50°C (32°F to 122°F), 0% ~ 95% RH(avoid condensation) for CO2
Storage condition	-20°C to 60°C (-4°F to 140°F), 0% ~ 99% RH(avoid condensation)
Power supply	AA type (UM-3) x 4 pcs
Battery supply	> 10 hours
Standard packing includes	Meter, Manual, Batteries and Hard carrying case
Dimension	210(L) x 70(W) x 58(H) mm (8.3 x 2.8 x 2.3 in)
Weight	Approx. 182g (0.40 lb)



Easy to read large LCD display

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