

Keeping your world up and running.®

How to successfully accelerate healthcare facility expansions

Ahed Abedrabuh
Routine Maintenance and Analysis Solutions
Middle East, Africa, Russia Region



Fluke – a Fortive company



Professional Instrumentation

Field Solutions

FLUKE®

QUALITROL
Defining Reliability

GARDIAN®

INDUSTRIAL SCIENTIFIC

accruent

Product Realization

Tektronix®

PACIFIC SCIENTIFIC
ENERGETIC MATERIALS COMPANY

Health

ASP®

Invetech

Sensing Tech.

SPT SPECIALTY PRODUCT TECHNOLOGIES

setra

Gems™
Sensors & Controls

HYGIENIC BY DESIGN
ANDERSON-NEGELE

HENGSTLER DYNAPAR

Industrial Technologies

Transportation Tech.

GILBARCO VEEDER-ROOT

GTT™ GLOBAL TRAFFIC TECHNOLOGIES

TELETRACNAVMAN



Franchise Distribution

MATCO TOOLS

HENNESSY INDUSTRIES, INC.

Strong Brands and Leading Market Positions

FLUKE

BY THE NUMBERS

1948 — **73** — 2021
YEARS

 **1250** TOOLS



4000+ EMPLOYEES



100+ COUNTRIES

1497
PATENTS



562
BLOG ARTICLES

565
VIDEOS



5
ONLINE
COURSES



789 APPLICATION
NOTES



76
ON-DEMAND
WEBINARS



Worldwide locations



Why professionals choose **Fluke**

Every Fluke tool is built around one idea... **You!**

FLUKE®



Solutions

- Preventive Maintenance
- Energy
- Online Solution Centers



F.A.C.T.

- Local hands-on seminars and trainings
- Webinar programs
- On-line training
- Application notes



Solutions



Training



Products and services



Products and services

- Technical support
- Customer support
- Lifetime warranty
- Calibration & repair
- Service center locations
- Software updates/ downloads
- Recycle program



You

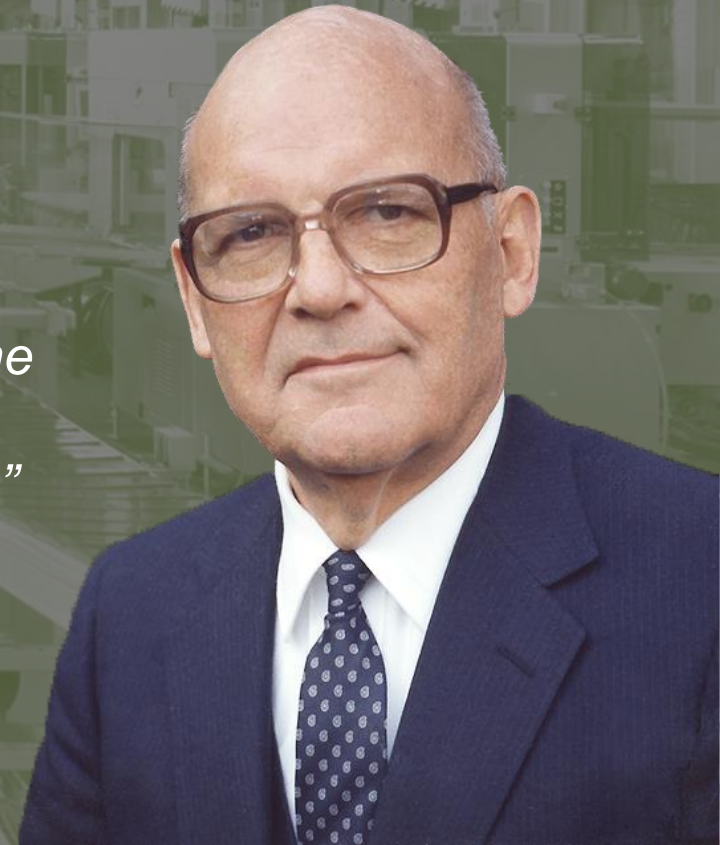
Growth through innovation

Our founder John Fluke Sr. redefined precision testing when he made a business come to life in his basement.

Since 1948, we've helped define and grow a unique technology market, providing testing and troubleshooting capabilities in manufacturing and service industries in more than 80 countries.

“Our customers have the right to get a little more than what they paid for.”

John Fluke Sr.



Fluke Corporation

Fluke Calibration



Fluke Industrial Group



Fluke Networks



Fluke Process Instruments



Fluke Health Solutions



Fluke Reliability



Together...we are **FLUKE**

FLUKE®

Process
Instruments

FLUKE®



Digital Multimeters.

Hand
and r

FLUKE®

Reliability

FLUKE®

Biomedical



Biomedical
Test Equipment,
Radiation Measurement,
and more

FLUKE®

Calibration



Calibration
Equipment


FLUKE
networks



Network Cabling Infrastructure,
Industrial Ethernet Solutions,
Fiber Inspection Equipment,
and more

Our Solutions

FLUKE®



FLUKE.

Run your healthcare facility at optimum efficiency and safety

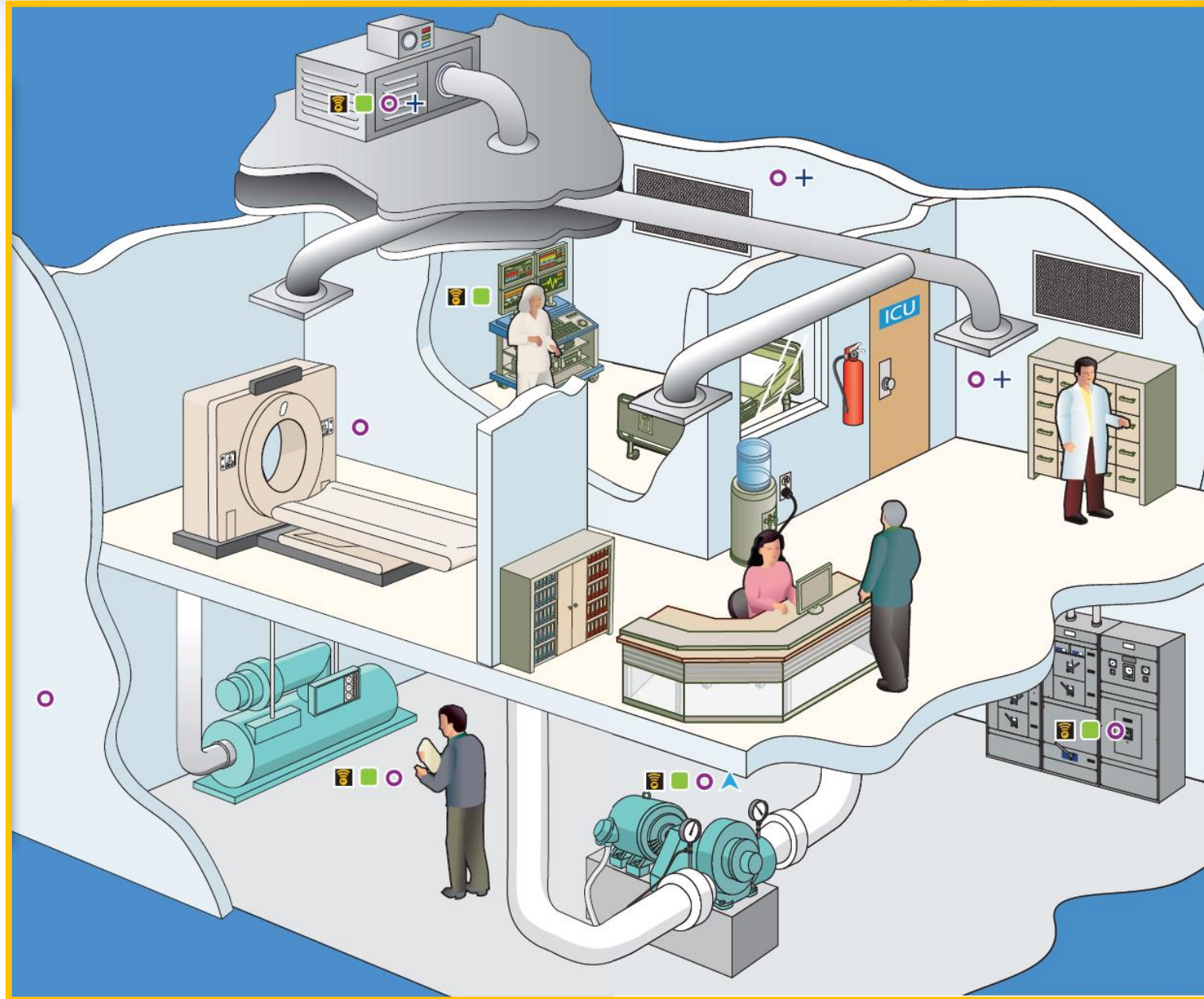
Fluke solutions can help you surpass safety standards with optimum efficiency

Healthcare facility professionals work with mission-critical equipment every day—failure is not an option. Your business faces life-and-death issues around the clock, so maintaining constant uptime is as crucial as finding ways to save on energy costs and adhering to stringent regulatory requirements.

Healthcare facilities depend on Fluke tools because they are the industry benchmark against which all other tools are measured.

See our full line of innovative products at www.fluke.com

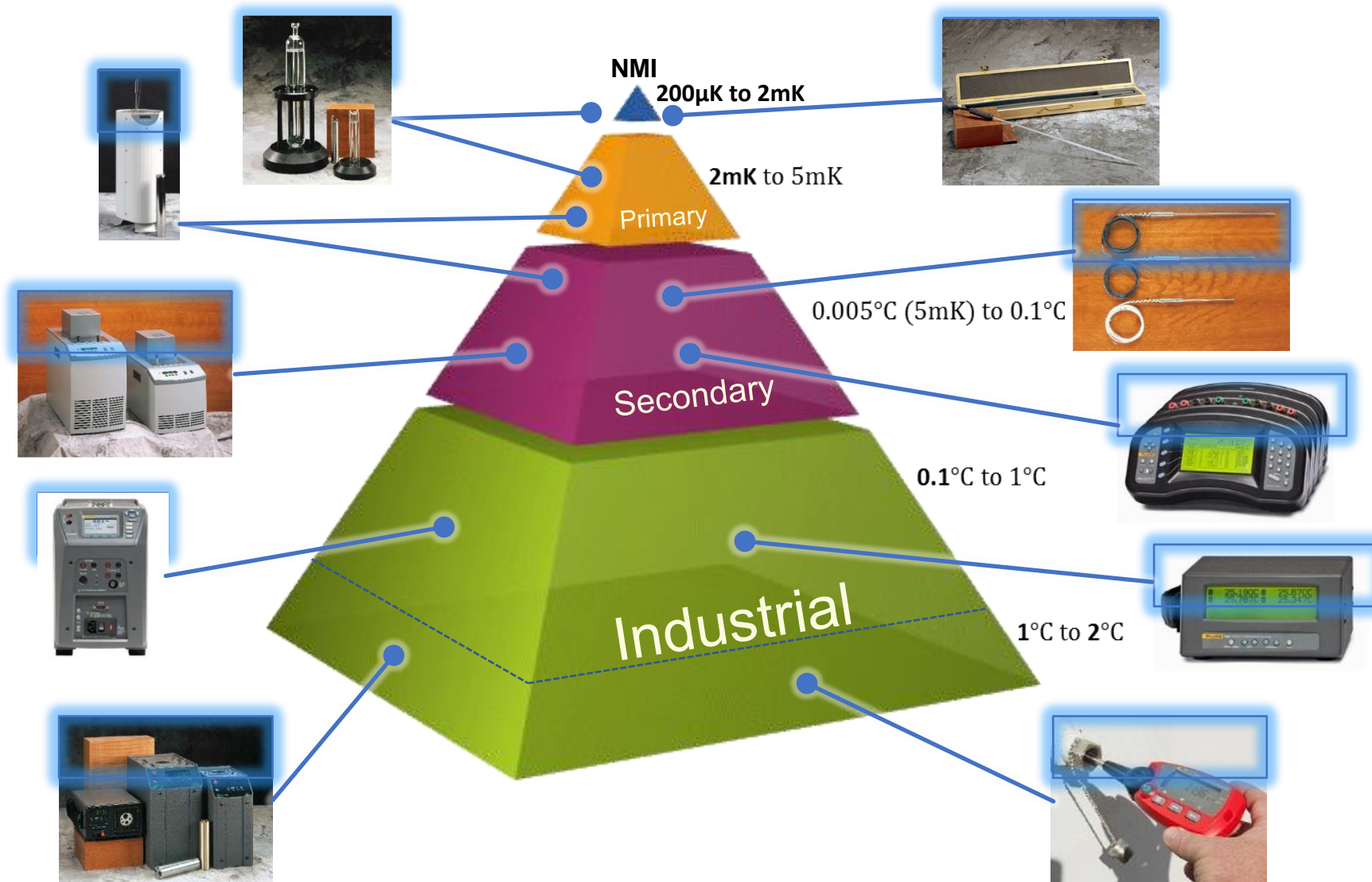
Multiple Points to Check Inside the Healthcare Facility





Calibration workflow

Temperature Calibration : Product scope



Temperature Calibration

Primary standards, thermometer readouts, probes, baths, industrial calibrators



Temperature Calibration System Inside Healthcare Facilities

Temperature Source/ Supply

Field

- Field Dry-well
- Handheld Dry-well
- Micro-Bath
- TC Furnace



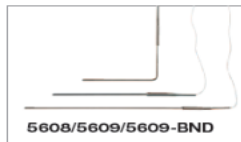
Bench

- Metrology Well
- Calibration Bath

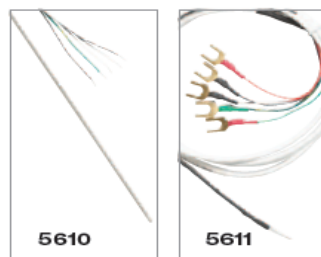


Temperature Reference

• Industrial PRT



• Thermistor probe



• Thermocouple

Temperature Readout

Field

- Handheld 152X
- Stik 155X



Bench

- 1502A
- 1529
- 1586A
- 159X



Thermometers Readouts



- Multiple channels & sensor reading
- Log environmental condition RH & T°
- Data Logging, thermal mapping
- Portability



Drywells & Metrology Wells



Drywells / Metrology Wells use a solid metal block as the controlled temperature volume

- Inserts provide holes to accept various DUT diameters with custom sizes available
- Temperatures range between -95°C and 700°C
- Temperature changes are very fast
- Light and easily portable
- Some have built in automation / documentation and DUT readout



Infra-Red Temperature Calibrators

IR thermometers & Thermal Camera calibration

(-30 to 500 degC)

Target size

Emissivity

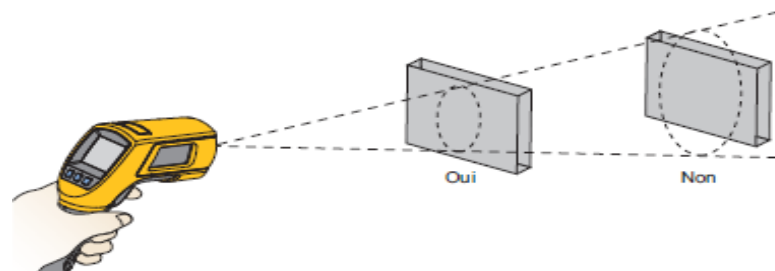
- Consider Calibration method

Radiometric calibration

By contact measurement

- Stability

- Uniformity



Humidity Generator Fluke 5128A

RH probes, meters & transmitters

- Calibrate up to 5 humidity sensors at a time
- Best-in-class specs (accuracy, uniformity, stability) 1% uncertainty
- Offers excellent stability and uniformity specs for accurate humidity probe calibration
- Fast humidity and temperature stabilization
- Compact size and lightweight, easy to transport
- Accommodate different humidity probe sizes and data loggers



Pressure & Flow Calibration

Piston gauges (pressure balances, deadweight testers)

Pressure controllers / calibrators, monitors & software

Gas flow calibration standards, accessories

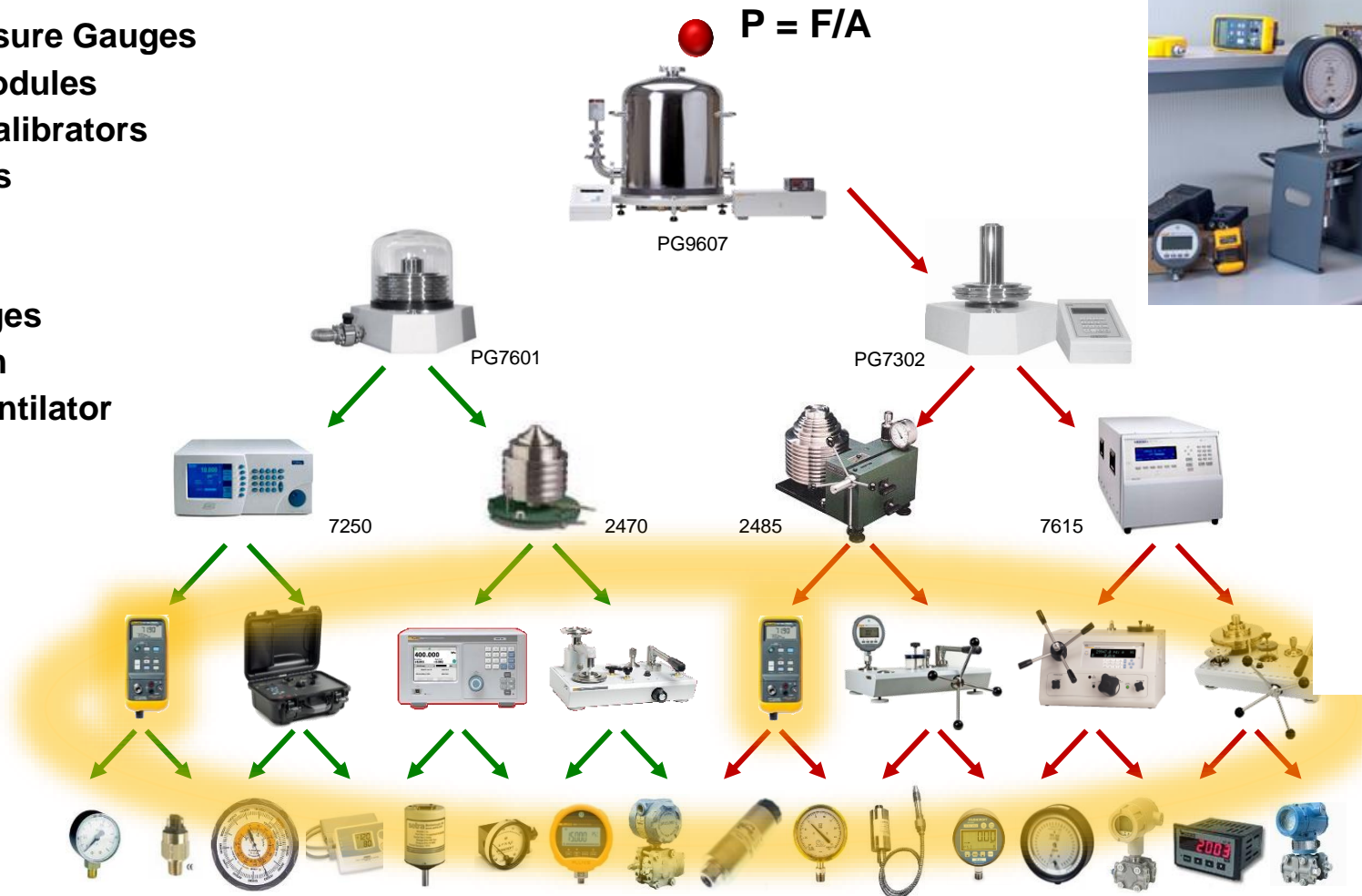


Pressure and Flow Calibration

- Digital Pressure Gauges
- Pressure Modules
- Handheld Calibrators
- Hand Pumps

Calibrate :

- Oxygen Gages
- Flow system
- Pressure ventilator







Routine Maintenance workflow

Healthcare solutions

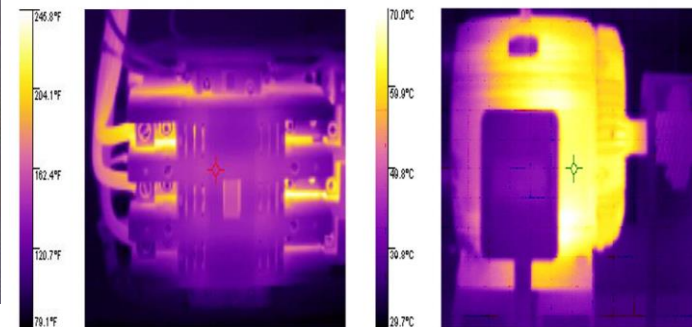
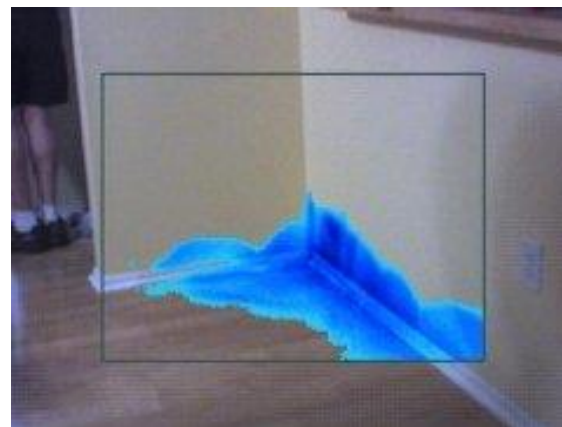
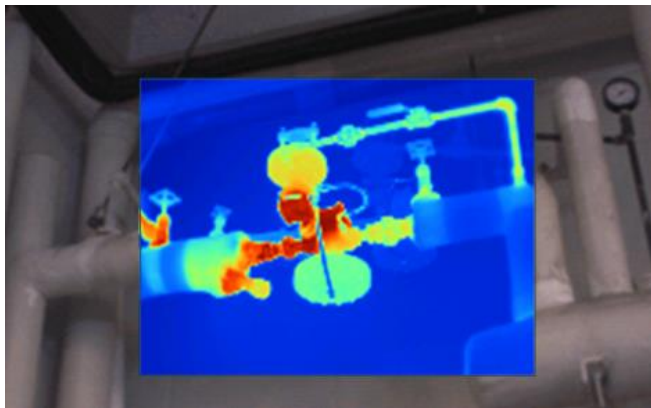
Process Calibration Tools		Electrical Test Tools			
Pressure gauges and calibrators	Process test tools	Power quality analyzers	Portable oscilloscopes	Earth ground testers	Clamp meters
 <p>700G 729</p>	 <p>789 773</p>	 <p>430 Series II 1738</p>	 <p>190 Series II</p>	 <p>1625-2 Kit</p>	 <p>376 FC 902 FC</p>

Infrared and Vibration Tools			Air Quality	Software			
Insulation multimeters	Digital multimeters	Fluorescent light tester	Thermal imagers professional	Infrared thermometers	Vibration testers	Indoor air quality	Maintenance software
 <p>1587 FC</p>	 <p>289</p>	 <p>1000FLT</p>	 <p>Ti400</p>	 <p>568</p>	 <p>810 805 FC</p>	 <p>985</p>	 <p>Fluke Connect®</p>

HVAC, Refrigeration / Freezer Compartments, Cryocoolers and MRI Chiller Units

Detect Issues in the facility with Thermal Imagers & Infrared Thermometers

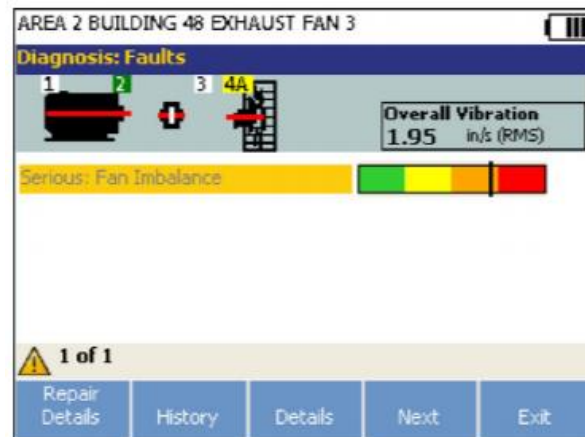
- Detection of “hot spots” on motors, pumps, VFDs, bearings and compressors.
- Capturing and troubleshooting tank levels.
- Inspecting fuse boxes, insulators, transformers and other electrical system components.
- Monitoring of roof moisture, building insulation and thermal bridging state.



HVAC, Refrigeration / Freezer Compartments, Cryocoolers and MRI Chiller Units

Predictive & Condition-based Maintenance with Fluke 805 Vibration Meter and Fluke 810 Vibration Tester

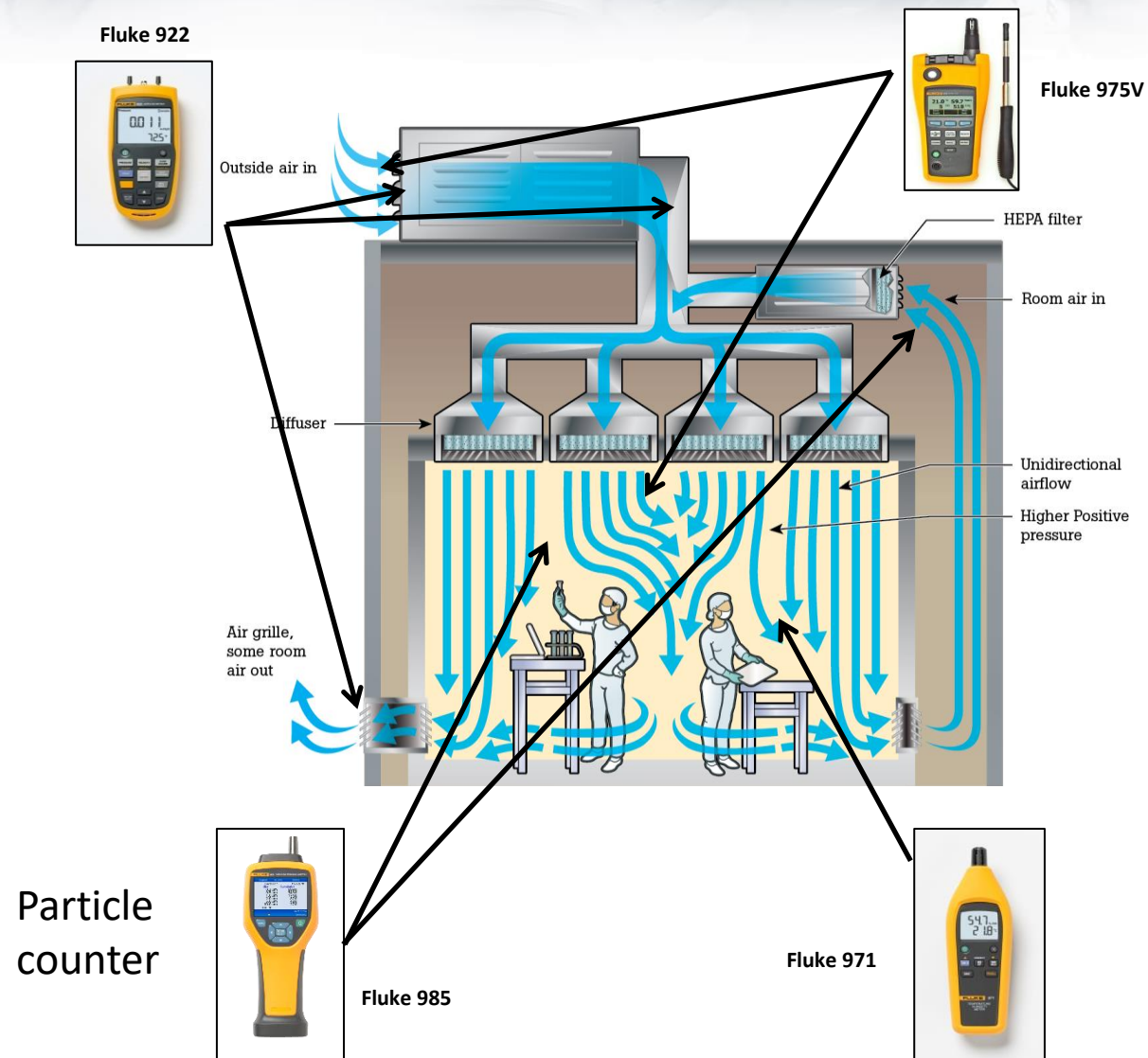
- Identify root cause and diagnosing severity of machine's condition
- Prioritizing critical repair and replacement options
- Use with motors, pumps, fans, compressors, belt/chain drives, gearboxes and spindles
- Analyze if your asset has misalignment, bearing wear, looseness or unbalance.



Important Parameters in Cleanroom:

- Airflow velocity and uniformity
- Filter integrity
- Airborne particle counting
- Cleanroom pressure and contaminant
- Temperature and relative humidity

Velocity
Temp
Humidity
Flow



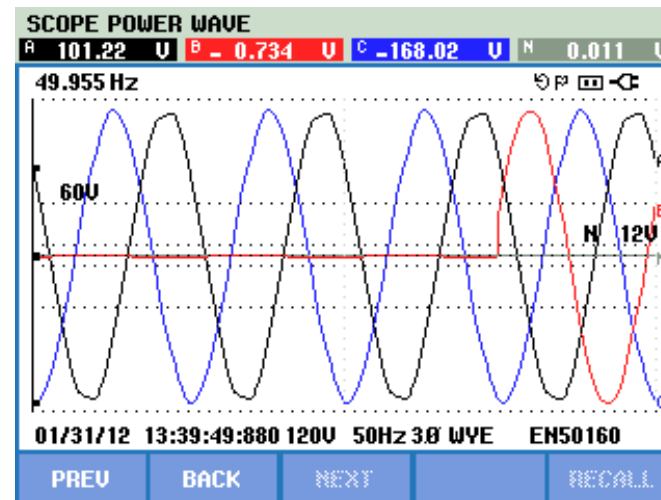
Imaging Systems; X-Ray, Mammography and others

Perform Root Cause Analysis on Imaging Systems with Fluke 435-II Power Quality Analyzer

- Check power quality before installing the new imaging system.
- Check that the power system delivers strong and stable voltage.
- Track intermittent problems; such as dips, swells, transients and record these events.
- Troubleshoot other assets in the hospital; motors, HVAC...



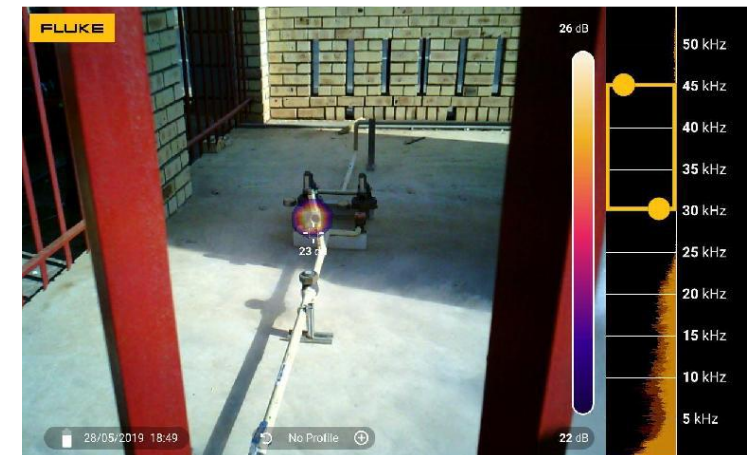
LOGGER				
START 09/08/17 13:08:18		EVENT 1 / 41		
		0:30:01	U P	
DATE	TIME	TYPE	LEVEL	DURATION
09/08/17	13:08:54:751	A DIP	153.4 U	0:00:00:640
09/08/17	13:10:19:501	A SWL	300.5 U	0:00:36:541
09/08/17	13:11:42:033	A DIP	167.9 U	0:00:00:020
09/08/17	13:11:42:552	A DIP	185.0 U	0:00:00:030
09/08/17	13:11:42:562	A TRA	> 100U	
09/08/17	13:12:05:023	A CHG	13.4 U	0:00:03:010
09/08/17	13:12:09:653	A CHG	13.3 U	0:00:02:940
09/08/17	13:12:59:513	A DIP	201.6 U	0:00:05:511
09/08/17	13:13:35:793	A SWL	276.5 U	0:00:00:251
09/08/17	13:13:42:632	A CHG	14.4 U	0:00:01:241
09/08/17	13:13:49:334	A CHG	14.2 U	0:00:01:240
...	
09/08/17 13:38:19		230V 50Hz 1Ø	EN50160	
WAVE	RMS	NORMAL		
EVENT	EVENT	DETAIL	BACK	



Oxygen and Medical Gasses Systems

Use Fluke ii900 Sound Imager to Ensure Efficient Operations without Air Leaks!

- Compressed air, gas and vacuum systems are a vital source of converted energy in different types of facilities.
- Many of these systems are compromised by wear and poor maintenance practices, which contribute to the greatest waste of all; the ever-present leaks.



Maintain a Safe Electrical System Inside the Hospital



Screen your electrical system with Multimeters, Clamps, Electrical Testers



Protect your people and facility with Earth Testing & Insulation Testing



Maintain backup battery systems for maximum usage and reliability



Check your electrical installations and appliances with Multifunction Testers



Deep dive into electrical issues with portable oscilloscopes



Questions?

FLUKE®