



LIGHTHOUSE
WORLDWIDE SOLUTIONS

Lighthouse Worldwide Solutions Master Presentation



R&D / Headquarters / Manufacturing



Medford, OR

- ★ Manufacturing
- ★ Service & Repair Center
- ★ Central Calibration Lab
- ★ RMA Center



Fremont, CA

- ★ R&D
- ★ Engineering
- ★ Pilot Production
- ★ Executive Management



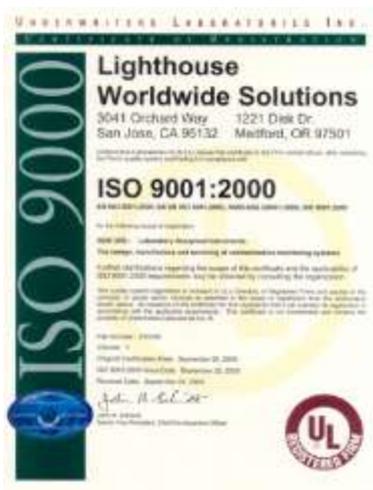
New Headquarters: **Silicon Valley**





Lighthouse Focus on Quality

ISO 9001:2000 Facilities



**United States:
Medford, OR
San Jose, CA**



**The Netherlands:
Alphen**



Singapore



Thailand

5 Lighthouse Locations are ISO 9000 Registered



Lighthouse Worldwide Solutions

★ **Pharmaceutical Capabilities:**

- ★ Particle counters and facility monitoring systems for meeting cGMP monitoring regulations
 - ★ 21 CFR Part 210 & 211
 - ★ 21 CFR Part 11
 - ★ EU GMP Annex 1
 - ★ PIC/S Annex 1
 - ★ WHO Guidelines
 - ★ USP 788/797
- ★ Systems designed for compliance
- ★ Project management services
- ★ Installation services
- ★ Validation services
- ★ Service, repair, retrofit of monitoring systems
- ★ Calibration per ISO 21501 standards
- ★ Contamination control consulting and training



Monitoring Solutions

General Monitoring

- ✓ Air Particle
- ✓ Liquid Particle
- ✓ Temperature
- ✓ Humidity
- ✓ Differential Pressure
- ✓ Electrostatic Charge
- ✓ Air Velocity
- ✓ TOC

Specific Applications

- ✓ Current on FFU's
- ✓ Chillers/Refrigerators
- ✓ Door Switches
- ✓ Oven Temp
- ✓ Dry Box Humidity
- ✓ Gas Purity
- ✓ Incubators
- ✓ Large LCD Displays



Lighthouse Systems Experience

- ★ **Lighthouse experience in FMS system installation, particle counter integration and software**
- ★ **Over 200 FMS system installations worldwide**
- ★ **Lighthouse is the number one shipper of remote particle counters (numbers exceeding 900 units / month)**



Pharmaceutical Customers





Lighthouse Pharma Customers (System)

Large multi-building Pharma system which consists of particles counters and environmental sensors. These sensors are integrated to the FMS software with alarm beacons.

- ★ **Baxter System**
- ★ **ROCHE**
- ★ **Sandoz**
- ★ **Bimagen**
- ★ **Beta Plus Pharma**
- ★ **Budelpack NV**
- ★ **Galapagos NV**
- ★ **Helvoet Pharma Belgium NV**
- ★ **Mediline NV**
- ★ **Salvamed**
- ★ **Novo Nordisk**
- ★ **Styker Howmedica –system**
- ★ **West Pharmaceuticals**
- ★ **Hospira / Abbott**
- ★ **GE Healthcare – system**
- ★ **Kabi Fresenius**
- ★ **Biogalenica**
- ★ **Favea**
- ★ **Vericore**
- ★ **Jugoremedia**
- ★ **Octapharma**
- ★ **Q- Med**
- ★ **Alcomed BV**



Lighthouse Pharma Customers (System) – Cont'd

- ★ **Crucell**
- ★ **Dutch Veterian Institute**
- ★ **Fresenius Hemocare BV**
- ★ **Mallinckodt Medical/ Tyco**
- ★ **Microclean B.V**
- ★ **Nelipak / Seal Air**
- ★ **Sandoz**
- ★ **Schenker International**
- ★ **TNO –Dimes**
- ★ **ACE Pharmaceuticals**
- ★ **Allergy Therapeutics – system**
- ★ **Aston University (Mayne-Parma)**
- ★ **Astra Zeneca – system**
- ★ **Baxter system**
- ★ **Glan Clywdd Hospital**
- ★ **Medtronic**
- ★ **Glaxo Smith Kline – system**
- ★ **NIBSC Stem Cell Bank**
- ★ **Pfizer-system**
- ★ **University College London system**
- ★ **Vericore (Novartis) –system**
- ★ **Astra Zeneca – system**
- ★ **Bassaire**
- ★ **IBA Molecular**
- ★ **Amgen**
- ★ **Chiron**
- ★ **Organogenesis**
- ★ **Pharmaforce**
- ★ **Cell Genesys**
- ★ **McGuff Pharma**
- ★ **MDS Nordion**



LIGHTHOUSE
WORLDWIDE SOLUTIONS
Technology That Counts



Products



LIGHTHOUSE
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Lighthouse Family of Products



World's Number One Particle Counters!



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Technology That Counts



Portable Particle Counters



Portable Particle Counters: SOLAIR



SOLAIR 5100 / 3100

0.5 / 0.3 micron

1.0 cfm



Touch Screen Interface



SOLAIR 5200 / 3200

0.5 / 0.3 micron

2.0 cfm or 50 liters per minute



Removable Battery



SOLAIR 1100LD

0.1 micron

1.0 cfm



Alphanumeric Labels



SOLAIR 3100 & 5100



On-Screen Recipes



- ★ SOLAIR 3100: 0.3-25.0 μ m
- ★ SOLAIR 5100: 0.5-25.0 μ m
- ★ All stainless steel enclosure
- ★ Easy to wipe down surface
- ★ Removable plastic bezel
- ★ Sealed inlet port prevent ingress of cleaning / sterilization solutions
- ★ Multiple communication interfaces
 - ★ Ethernet
 - ★ RS-485 MODBUS
 - ★ Universal Serial Bus (USB)



SOLAIR 3350 & 5350

 **EXTREME LIFE LASER DIODE TECHNOLOGY**



- ★ Built-in thermal printer
- ★ Stainless steel construction
- ★ USB CF flash drive support
- ★ Multiple communication interfaces:
 - ★ Ethernet
 - ★ RS-485
 - ★ Universal Serial Bus (USB)
- ★ Designed for ISO 21501-4 compliance:
 - ★ Unit-to-Unit accuracy & repeatability assured

**USB
Compact
Flash Drive
Support!**





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Portable Particle Counters: **SOLAIR 1100LD**



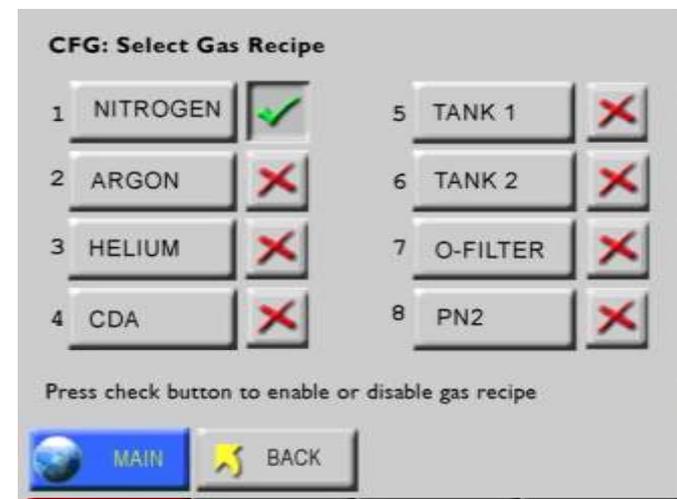
- ★ 0.1 micron detection
- ★ 1.0 cfm flow rate
- ★ Battery powered
- ★ Smallest and lightest
- ★ Touch screen interface





SOLAIR 1100LD GSO (Gas Sampling Option)

- ★ 8 particle channel sizes
- ★ Wide dynamic range, 0.1 to 5.0 μM
- ★ Battery powered
- ★ Customizable gas sampling recipes
- ★ 3,000 sample records
- ★ May be used with any inert gases
- ★ Auto flow rate compensation ensures accurate measurement
- ★ Gases sampled: Argon, Nitrogen, Carbon Dioxide, Helium, CDA, Neon, Xenon





Portable Particle Counters: Accessories



SOLAIR
Carrying Case

Differential
Pressure Sensor



Temp / Humidity
Wand



Air Velocity
Sensor



HEPA Scanning
Probe



High Pressure
Diffusers





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Updated Accessories: Particle Counter Cart

- ★ **Stainless steel cart for particle counter**
 - ★ **Version A for SOLAIR 3100 / 3200**
 - ★ **Version B for SOLAIR 1100LD**
- ★ **Top shelf is perforated stainless steel.**
- ★ **Conductive wheels**
- ★ **Adjustable bar for holding isokinetic probe for sampling**





Updated Accessories: Intelligent Filter Scan

- ★ Start and stop sampling from probe
 - ★ Flash light based upon alarm threshold
 - ★ Beep (sounder) based upon alarm threshold
- ★ Several pole lengths available
- ★ Plugs into auxiliary connector on SOLAIR units (round connector)





Thank You