

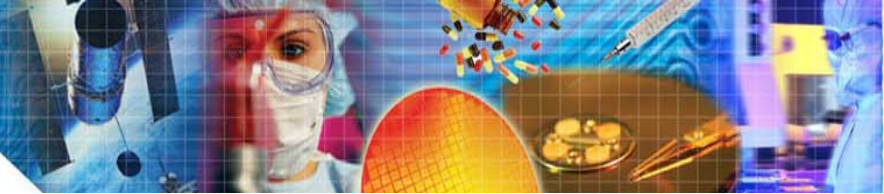


Handheld Particle Counters



LIGHTHOUSE
WORLDWIDE SOLUTIONS

RELIABILITY YOU CAN COUNT ON



Overview Lighthouse Handhelds

Handheld 2016
0.2µm



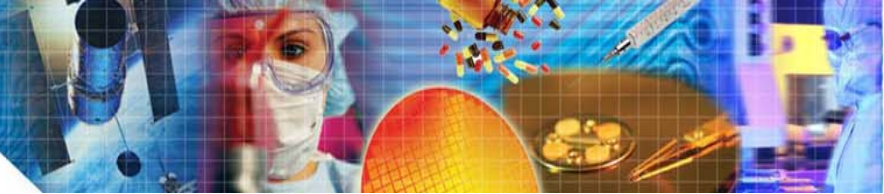
Handheld 3016
0.3µm



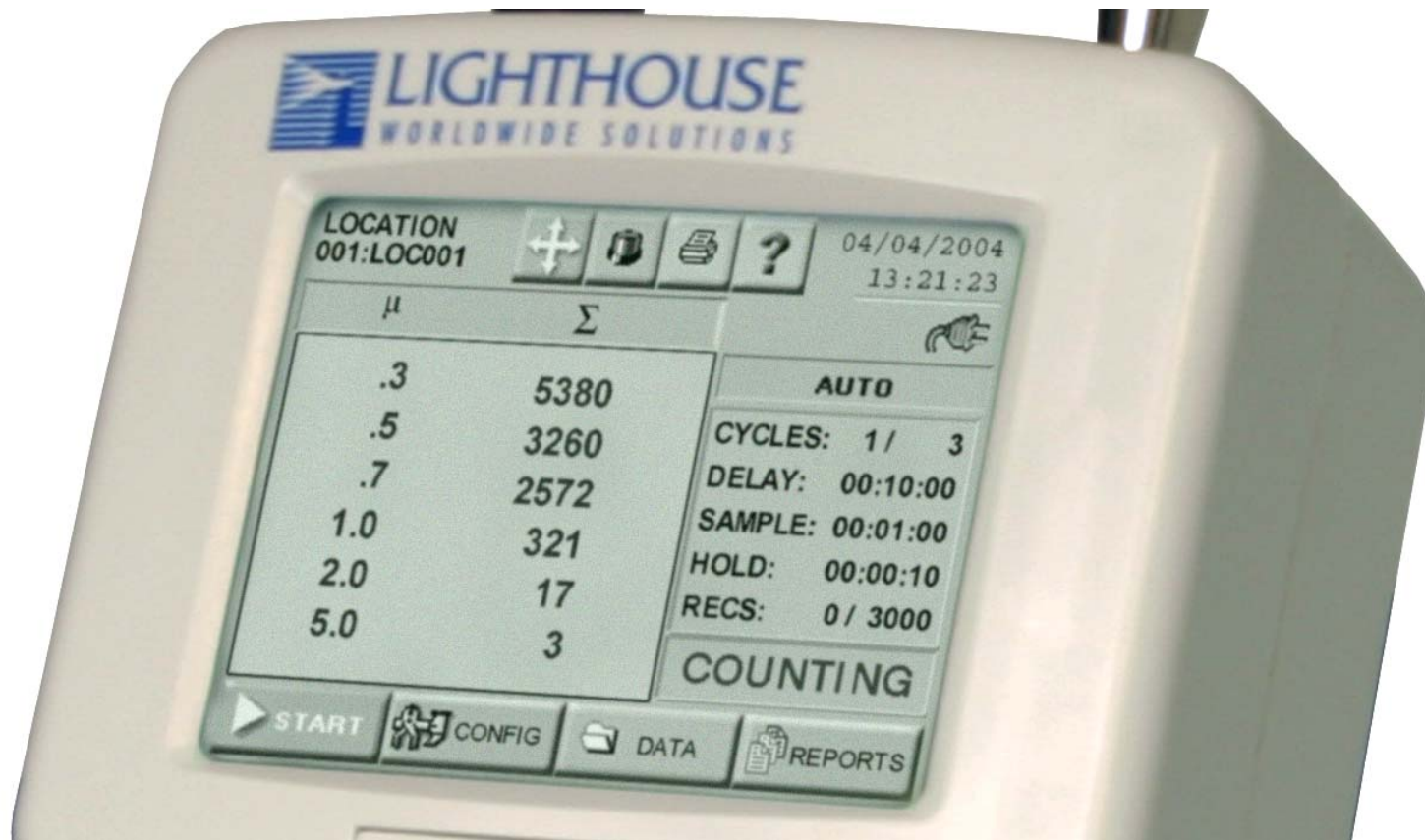
Only Lighthouse Offers
This Variety of Handhelds
With Sensitivity of 0.2 Micron
and a Concentration Limit of
4,000,000 Particles / Ft³

Handheld 5016
0.5µm

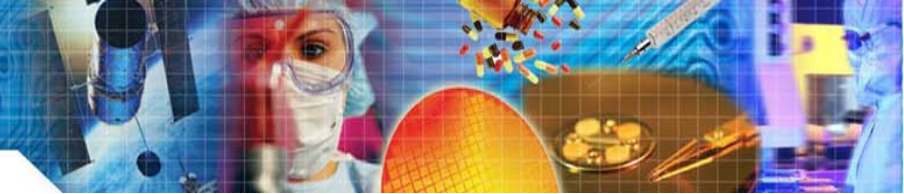




Touch Screen Display



The Handhelds Come with a **Touch Screen Display.**

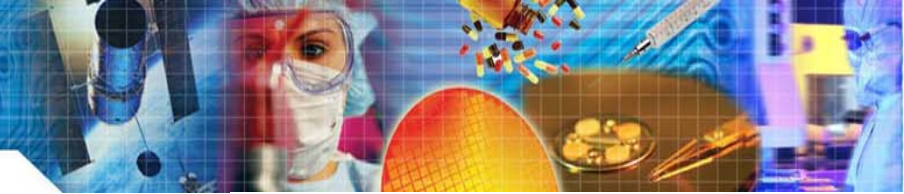


Data Record Storage

The Handhelds Have a Storage Capacity of **3,000 data Records.**

- Each Record Consists of:
- Record Time
 - Record Date
 - Sample Interval
 - Location
 - Particle Data: Raw
 - Particle Data: Cumulative
 - Environmental Data (Temp/RH)**





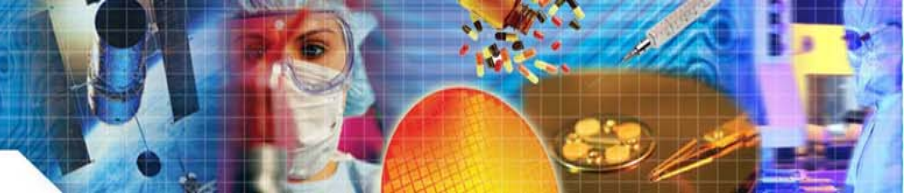
Concentration Limits

Handheld Concentration Limits (5% Coincidence Error)

- ★ **Model 5016: 4,000,000**
Particles / Ft³ @ 0.5μm
- ★ **Model 3016: 4,000,000**
Particles / Ft³ @ 0.3μm
- ★ **Model 2016: 4,000,000**
Particles / Ft³ @ 0.2μm



The Handhelds Have a **2x Higher Concentration Limit**
Than Competitive Products.

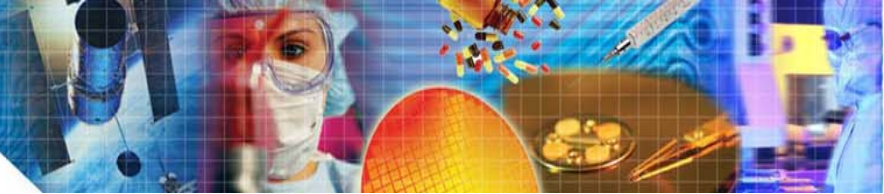


Temperature and Humidity Probe



Temp/RH Probe

Standard Temp/RH Probe
(Temp +/- 0.3C / 0.5F, Hum +/- 3%)



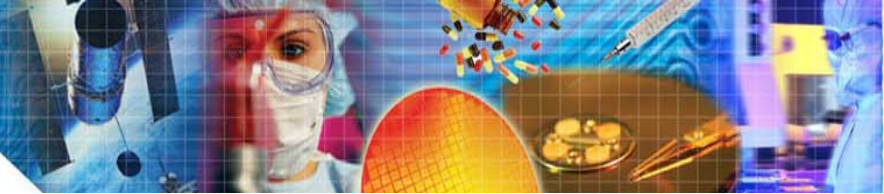
Ergonomic Design – Single Hand Operation



Handle for Single Hand Operation

Handle with Start / Stop Trigger

The Handhelds Have a **Handle with start / stop sampling** button built in for single hand operation.

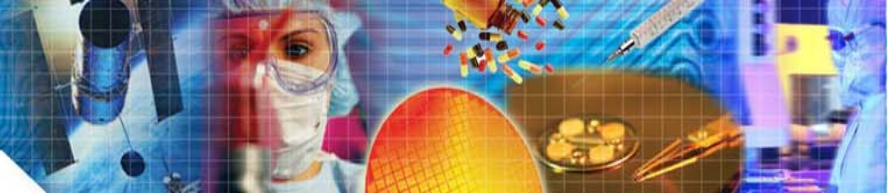


Stainless Steel Kick Stand

Stainless Steel Stand



The Handhelds Have a **Stainless Steel Stand.**

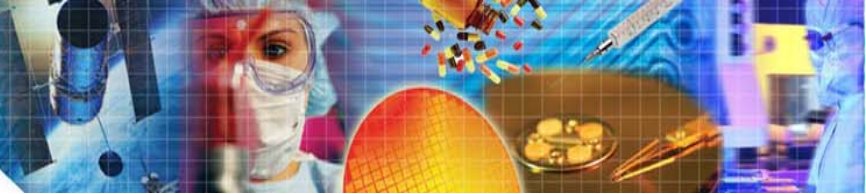


Ease of Operation



← **Handle for Easy Use**

The Handhelds Have an Easy to Hold and Operate Handle.

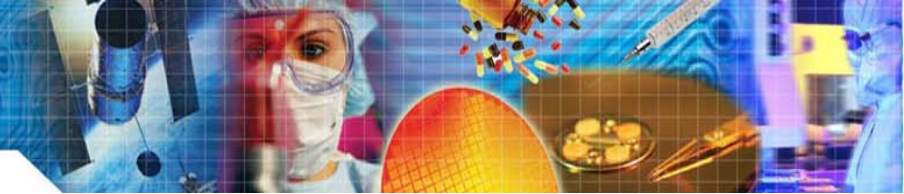


Removable Battery



Removable Battery

The Handhelds Have a **Removable Battery**.
(optional external charger and spare batteries available)



Main Screen Information

Location
Date

LOCATION
01:TEST1234

05/25/2004
15:58:00

μ	Σ	ft ³
0.3	176870	
0.5	32450	
1.0	7800	
3.0	460	
5.0	100	
10.0	50	

81.3 F
33.6 %

AUTO

CYCLES: 0 / 3

SAMPLE: 00:01:00

HOLD: 00:00:10

RECS: 0/3000

COUNTING

Time

Power/Battery Status

Flow Status

Environmental Data

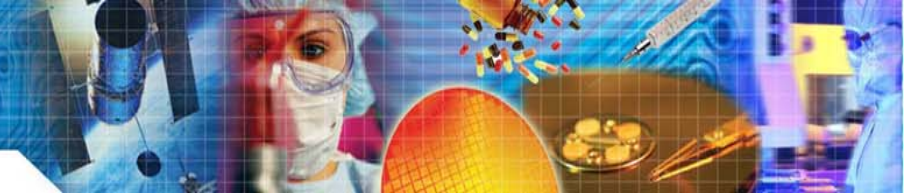
Mode

Cycles

Sample Time

Hold Time

Records







Main Screen Buttons

Alarm
Location About Ack. Print

LOCATION
01:TEST1234

05/25/2004
15:58:00

μ	Σ	ft^3
0.3	176870	
0.5	32450	
1.0	7800	
3.0	460	
5.0	100	
10.0	50	

81.3 F
33.6 %

AUTO


CYCLES: 0 / 3


SAMPLE: 00:01:00


HOLD: 00:00:10


RECS: 0/3000

COUNTING

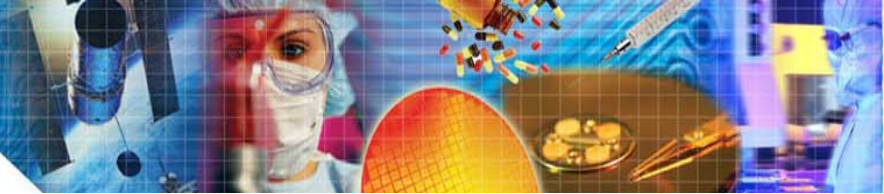
 STOP

 CFG

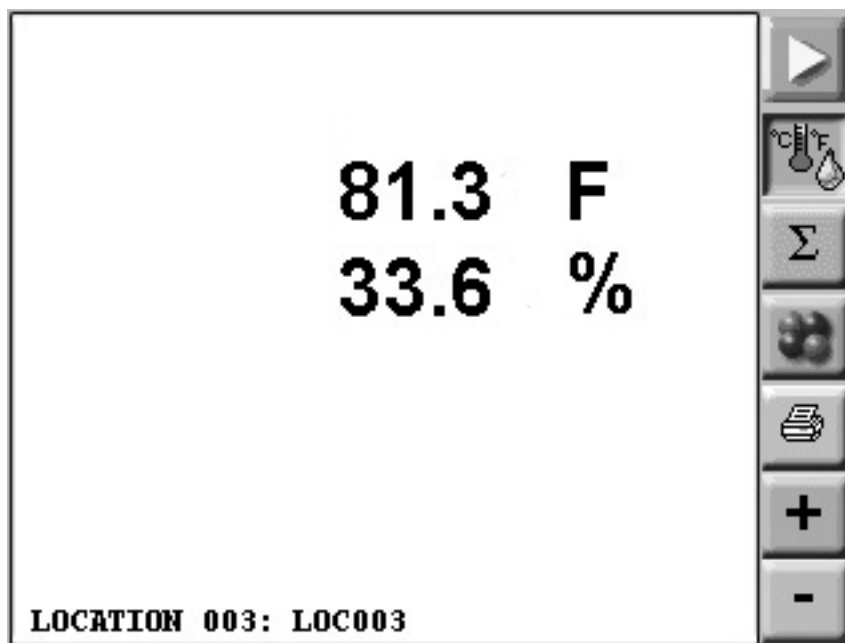
 DATA

 REPORTS

Start / Stop Configuration View Data Run Reports

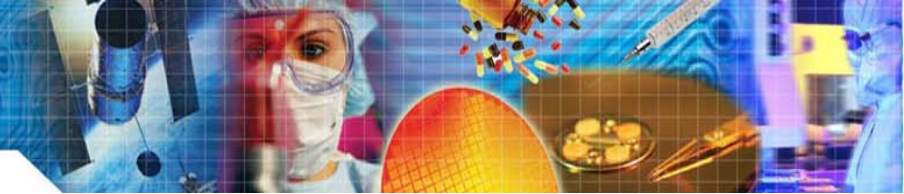


Zoom Screen



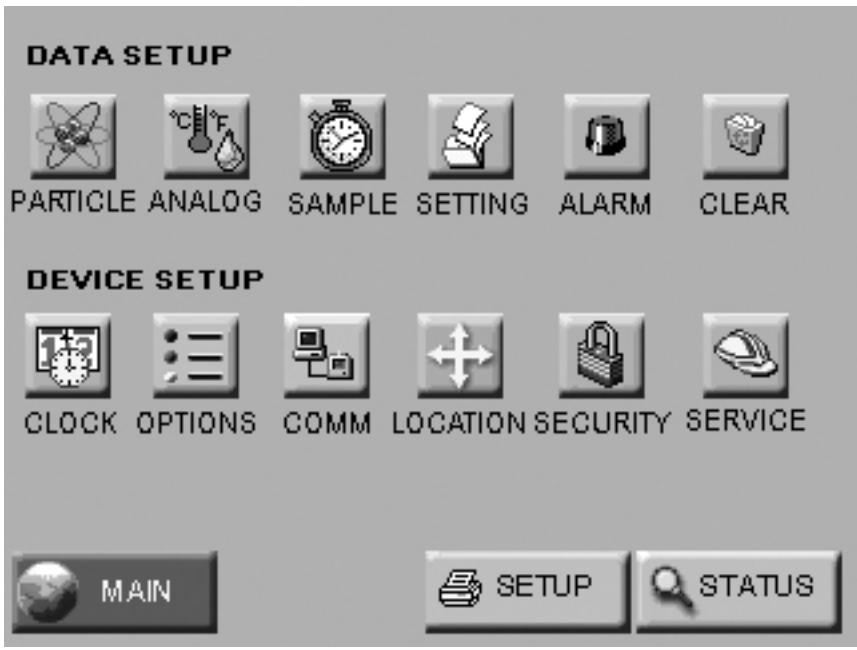
Zoomed View

No Other Handheld Particle Counter Can Zoom!

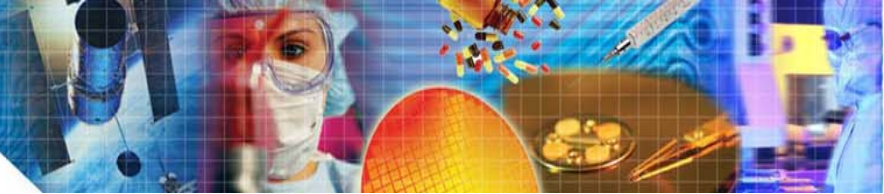


Icon Based Configuration

Configuration Main Screen



Easy to Use and Learn Icon Based Configuration Saves Time and Money When Creating Operating Procedures and Training Operators





Particle Channel Set-up

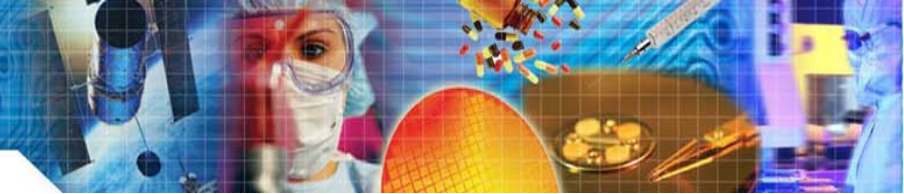
CFG: Particle Channel

CH 1: 0.3	<input checked="" type="checkbox"/>	CH 5: 5.0	<input checked="" type="checkbox"/>
CH 2: 0.5	<input checked="" type="checkbox"/>	CH 6: 10.0	<input checked="" type="checkbox"/>
CH 3: 1.0	<input type="checkbox"/>		
CH 4: 3.0	<input checked="" type="checkbox"/>		

Press button to enable or disable particle channel.

 MAIN  BACK

Users Can Select What Particle Size Channels are Stored and Displayed



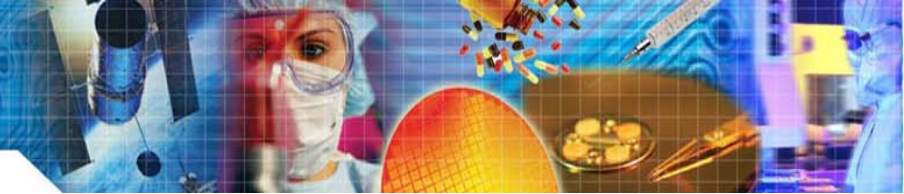
Analog Screen

ANALOGS

	TYPE	MIN	MAX	UNITS
A1	TEMP	0.00	150.00	F
A2	RH	0.00	100.00	PCT
A3	AIRV	0.00	200.00	FPM
X		0.00	100.00	

 MAIN  BACK

Configuration of Analog Sensors












Sample Setup

Programmable:

- Number of Cycles
- Delay Time
- Hold Time
- Sample Time

Sample for Time or Volume:

- Cubic Feet
- Cubic Meter
- Liter

 CYCLES	000													
 DELAY	00:10:00	<table border="1"> <tr><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td></tr> <tr><td>7</td><td>8</td><td>9</td></tr> <tr><td>0</td><td>.</td><td></td></tr> </table>	1	2	3	4	5	6	7	8	9	0	.	
1	2		3											
4	5		6											
7	8		9											
0	.													
 HOLD	00:01:00													
 SAMPLE	00:01:00													
 VOLUME	1.000													
	<table border="1"> <tr> <td>ft³</td> <td>m³</td> <td>ℓ</td> </tr> </table>	ft ³	m ³	ℓ										
ft ³	m ³	ℓ												
 MAIN	 BACK	 ENTER												
		 ERASE												



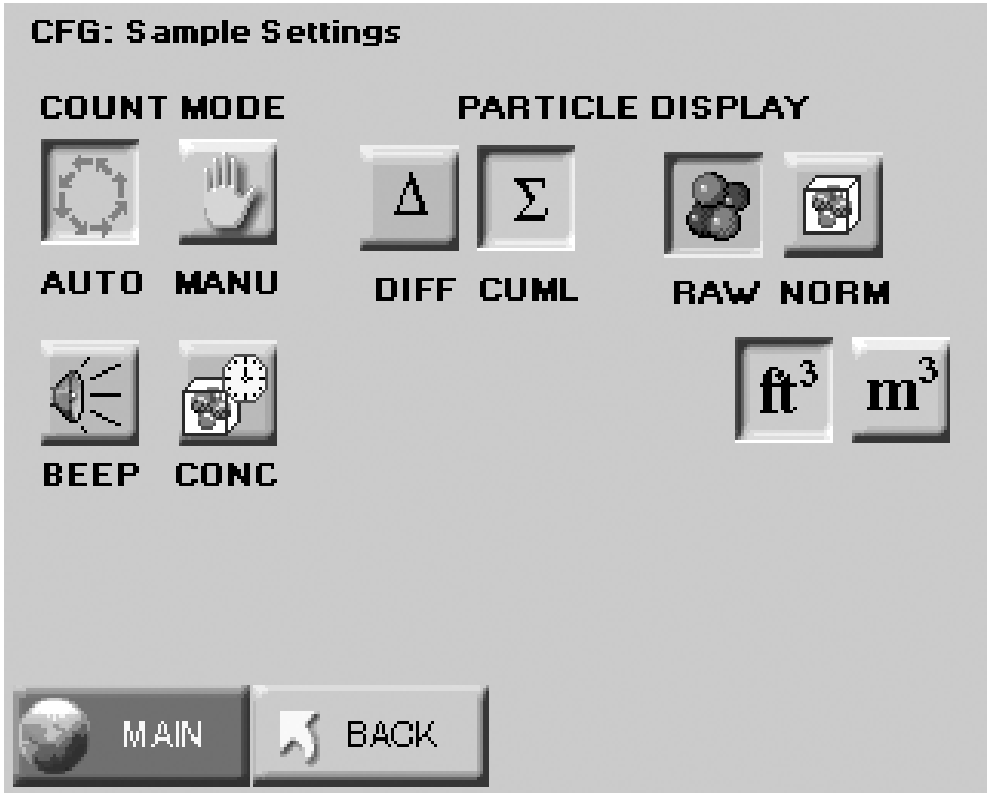
Sample Setting

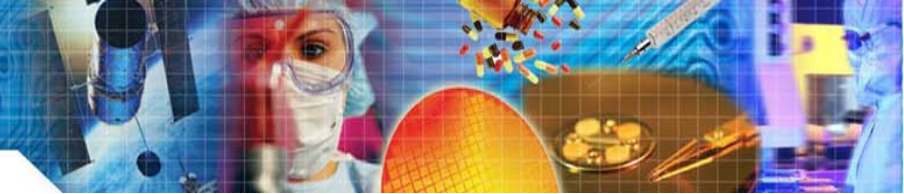
Count Modes:

- Automatic
- Manual
- Beep
- Concentration

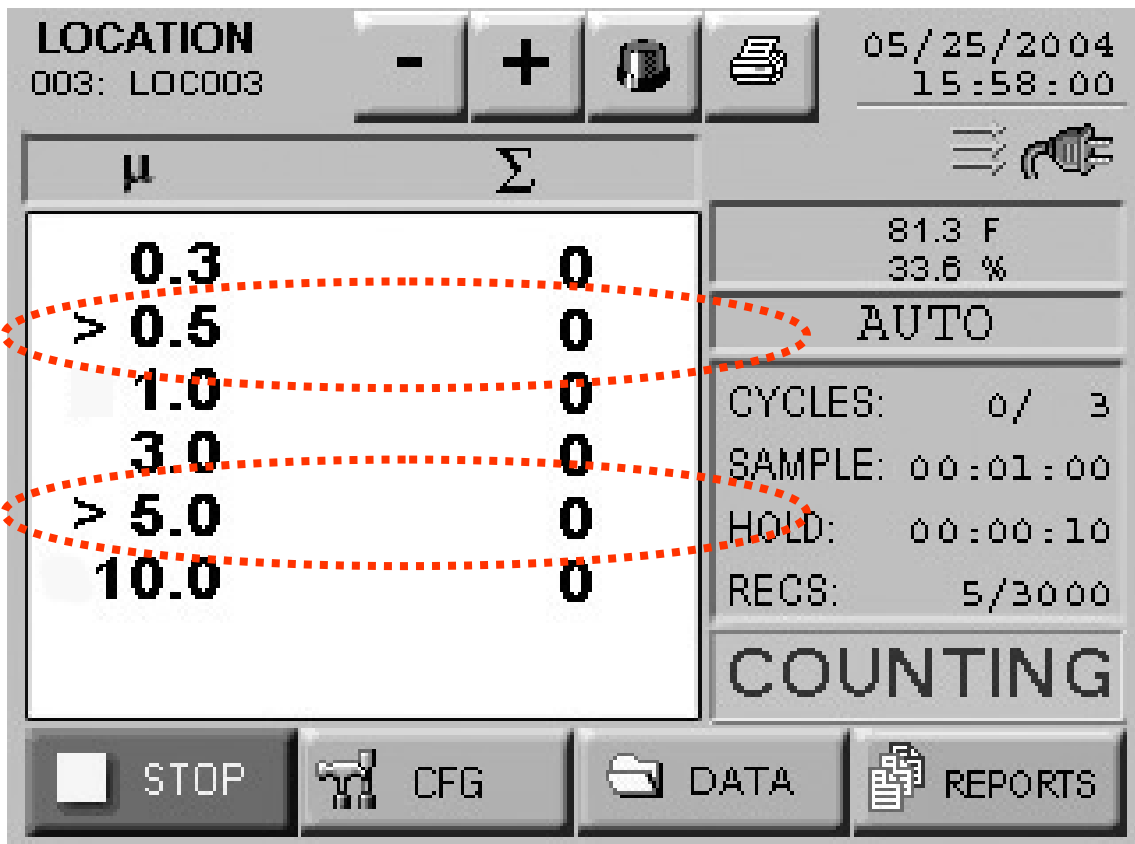
Particle Display

- Cumulative / Differential
- Raw or Normalized
- Normalized to:
 - Particles / Cubic Foot
 - Particles / Cubic Meter





On Screen Alarm



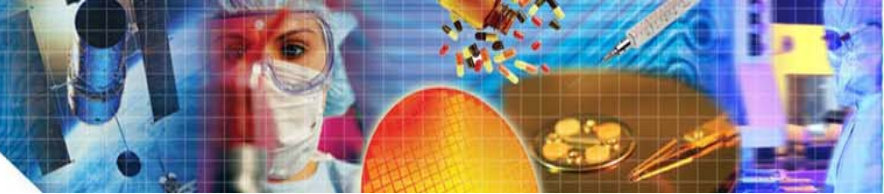
LOCATION: 003: LOC003 05/25/2004 15:58:00

μ	Σ
0.3	0
> 0.5	0
1.0	0
3.0	0
> 5.0	0
10.0	0

81.3 F
33.6 %
AUTO
CYCLES: 0 / 3
SAMPLE: 00:01:00
HOLD: 00:00:10
RECS: 5/3000
COUNTING

STOP CFG DATA REPORTS

Each individual channel size will be highlighted when it exceeds a preset alarm limit (intelligent alarming).





Alarm Set-Up

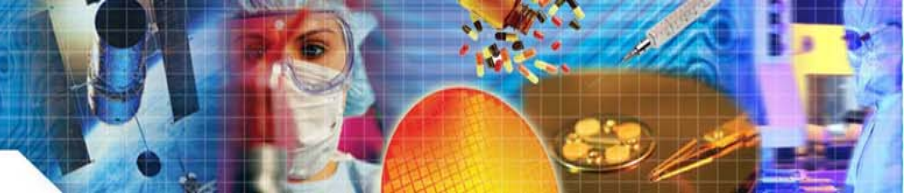
CFG: Particle Alarm

1	1000	X	5	10	✓
2	100	✓	6	1000	X
3	1000	X			
4	1000	X			

Press check button to enable or disable particle alarm.

 MAIN  BACK

2 Channels for Alarms Programmable By Channel Size



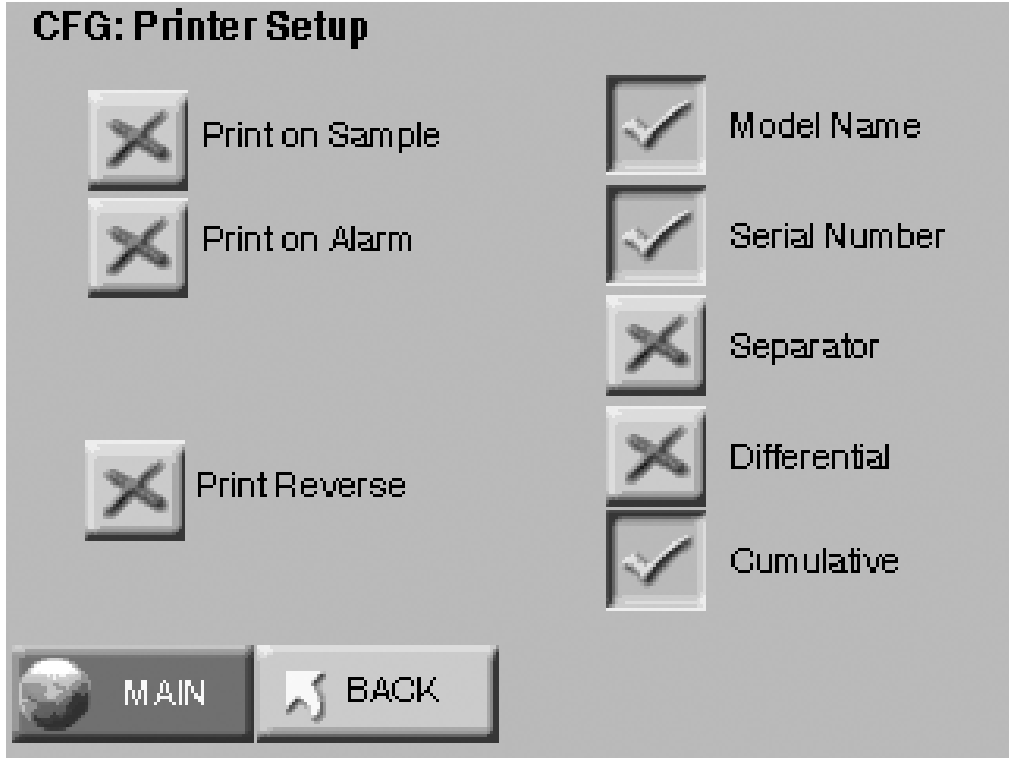
Printer Setup

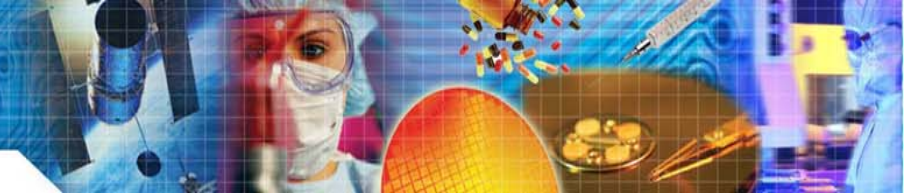
**Print Automatically on:
Each Sample
On Alarm**

**Print Forward or
Reverse**

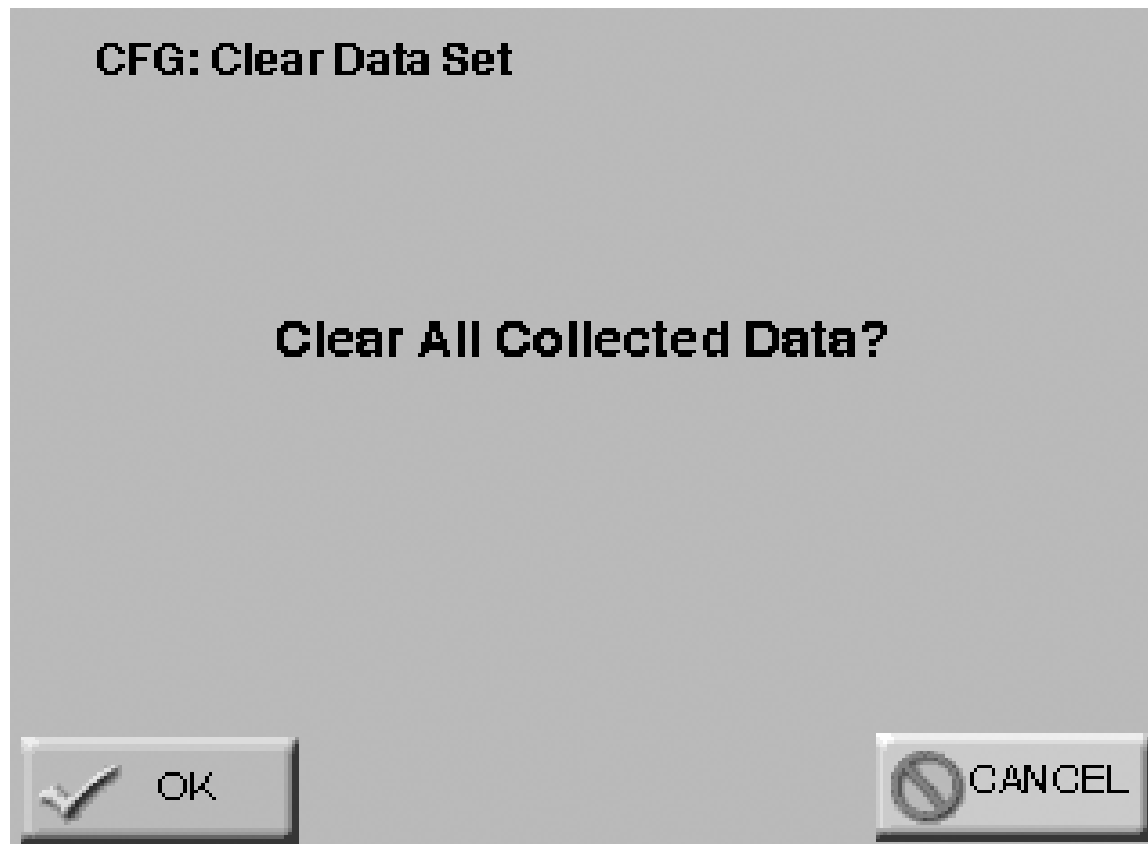
**Print With or Without
Model Name
Serial Number
Separator
Cumulative
Differential**

This Saves Paper!

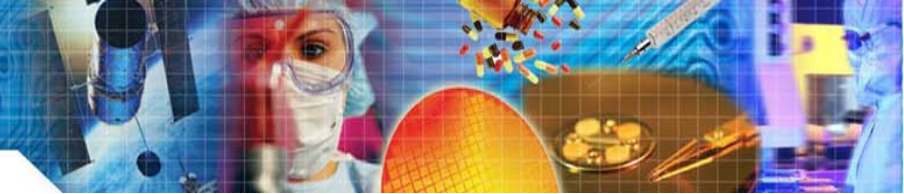




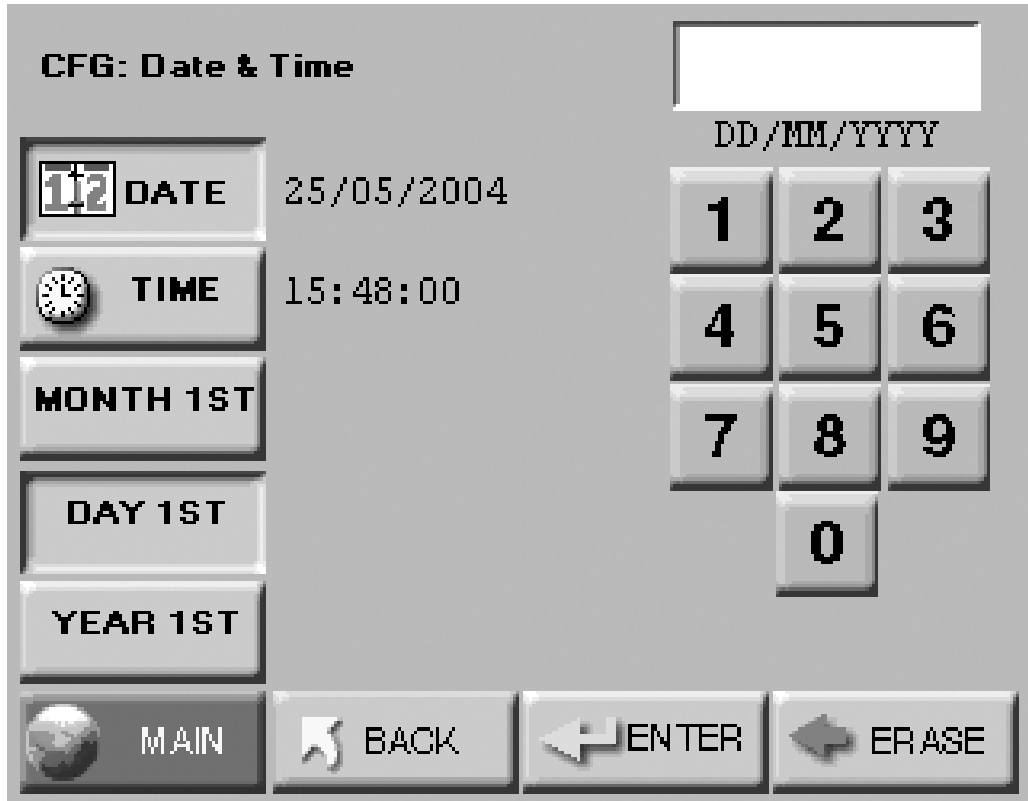
Clear Buffer



The Buffer Can Be Cleared From the Particle Counter



Changeable Date Format



Allows Users To Select The Date Format. **MM/DD/YYYY**, **YYYY/MM/DD** or **DD/MM/YYYY** can be Selected.



Options

Adjust:

- ★ Screen Brightness
- ★ Volume

Align Touch Screen

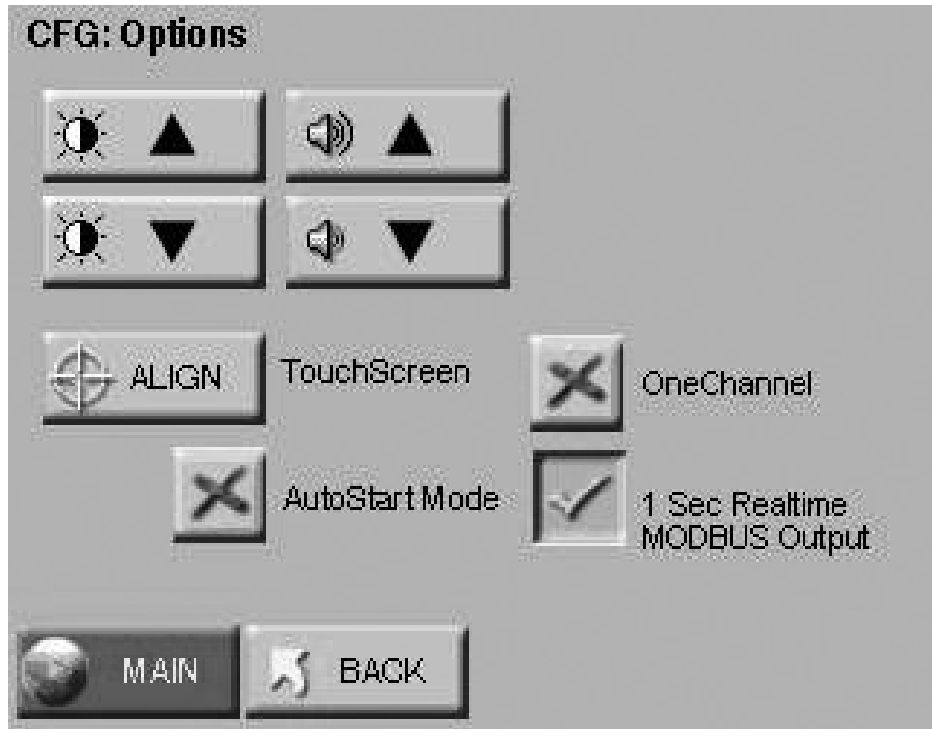
Select One Channel

Display

Auto Start

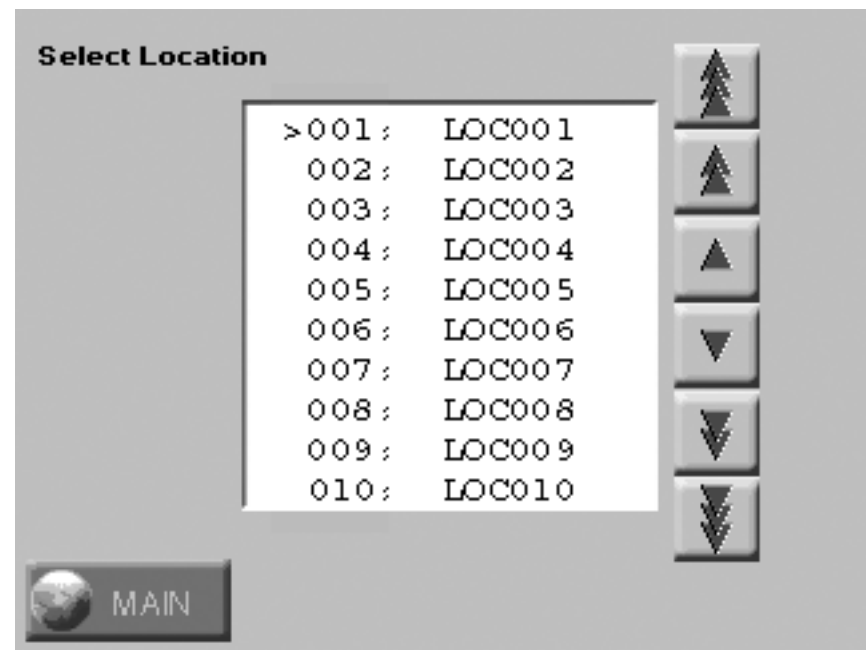
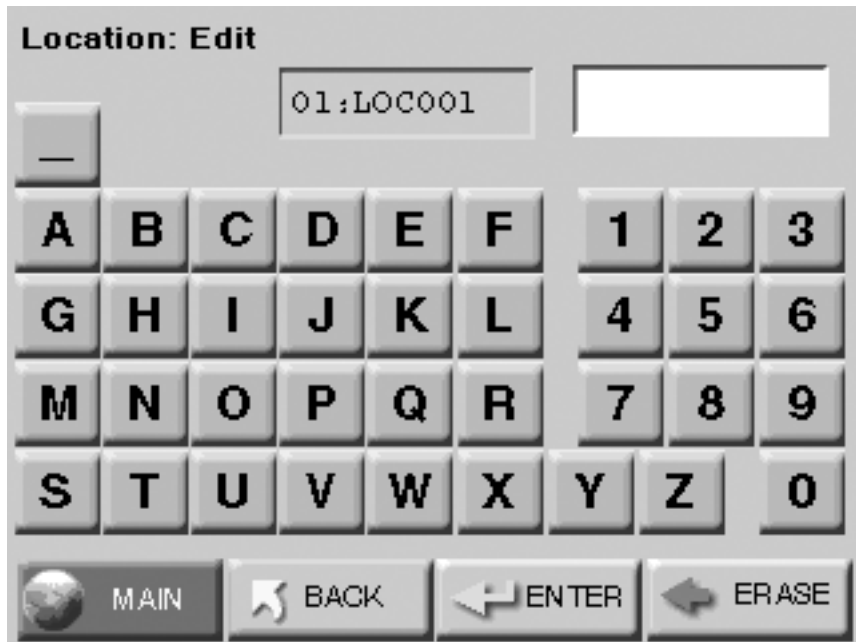
(Restart After Power Loss and Restore)

One Second MODBUS

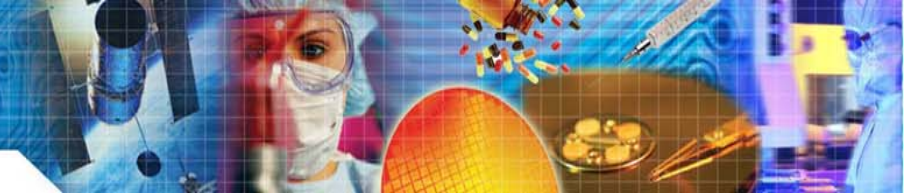




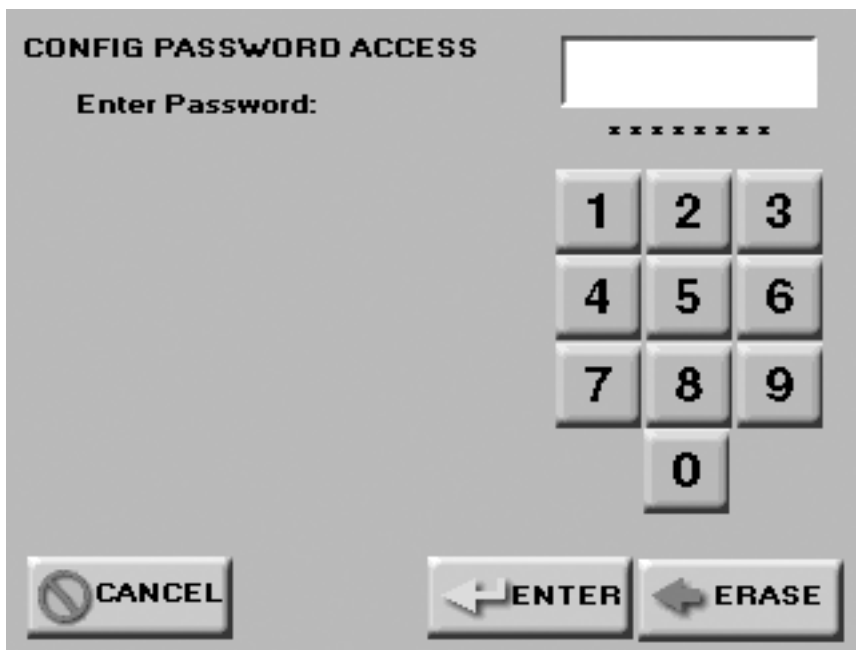
Alphanumeric Location Labels



Alpha-Numeric Location Labels: Can Be Uploaded or Downloaded From PC Using LMS XChange or Express Software



Security

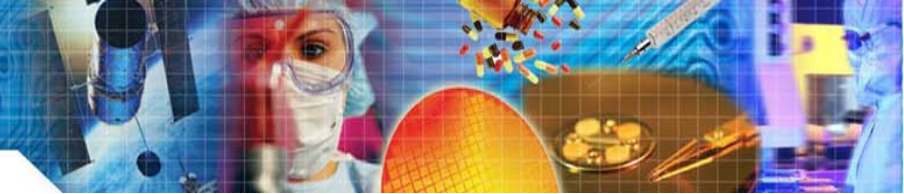


Configuration Password



Power-On Password

This feature allows you to keep unauthorized users from altering the operation of the particle counter.



Service Screen

Accessible only by Service Password

Set-Up

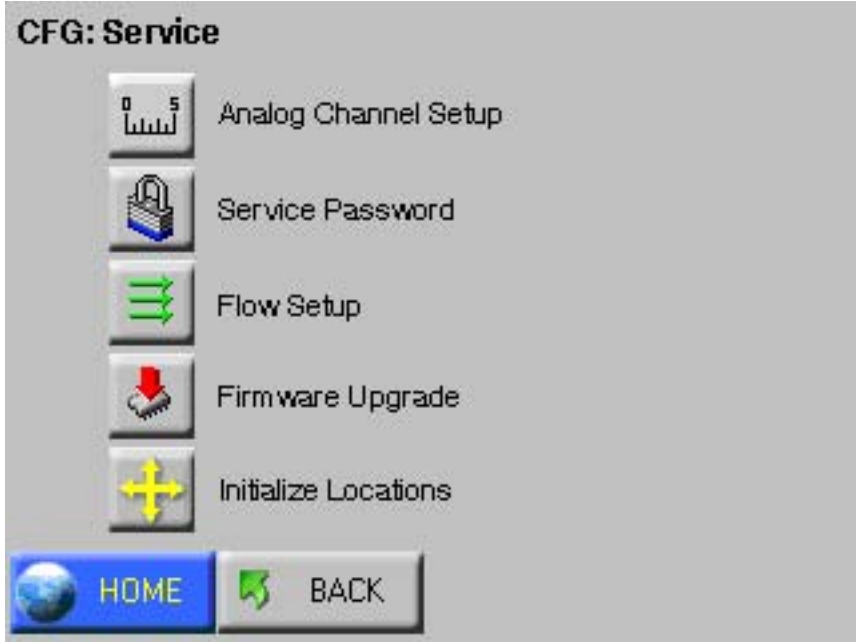
★ Analog Channels

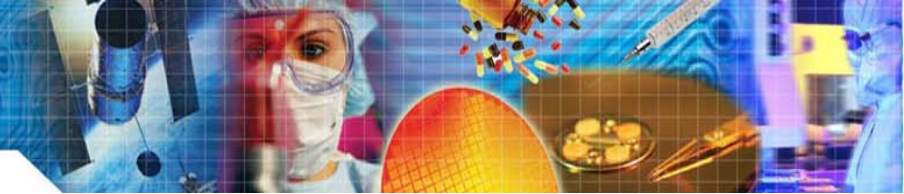
Set Service Password

Adjust Flow Control

Firmware Upgrade

Initialize Particle Count Locations





Status Screen

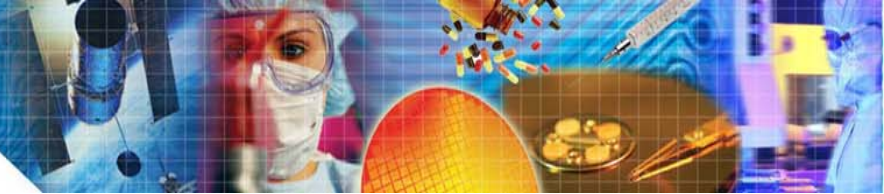


HANDHELD 3016

3.0

www.golighthouse.com




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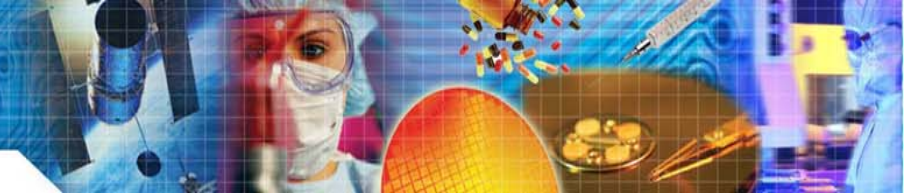
Single Record Viewing and Printing

Rec#=-	209	*Recs:	208/3000
Size	Diff#	CumI#	
0.3μ	25519	31575	
0.5μ	4017	5056	
1.0μ	993	1039	
3.0μ	27	46	
5.0μ	15	19	
10.0μ	4	4	

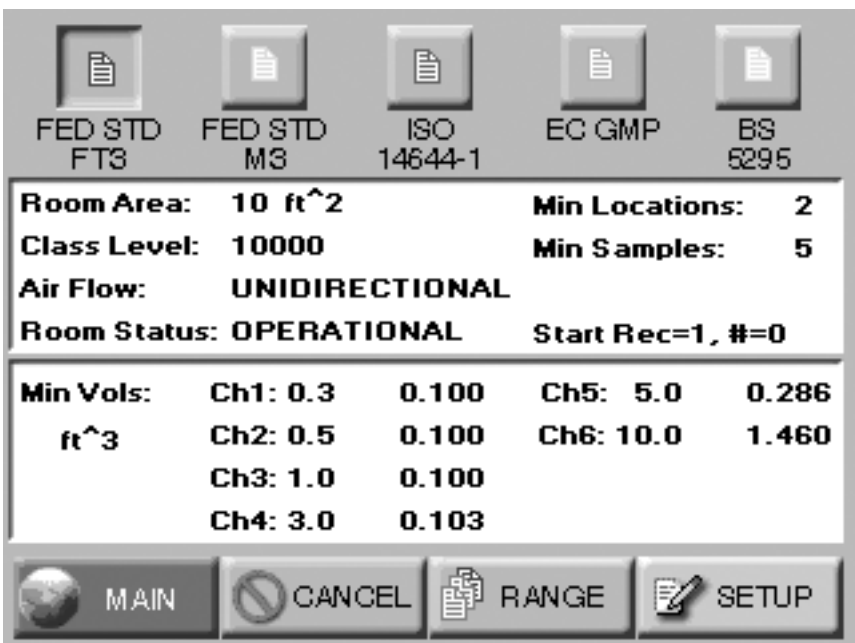
Loc: ABCD1234	Instr: GOOD	A1: 75.1 F
Smpl: 00:01:00	Flow: OK	A2: 42.3
Date: 2004/08/09	Alarm: NONE	
Time: 12:43:23	Laser: OK	

 MAIN	 RANGE	 RECORD
--	---	--

This feature allows viewing a specific record in the buffer and allows printing it without having to print all records.



Automatic Report Calculations



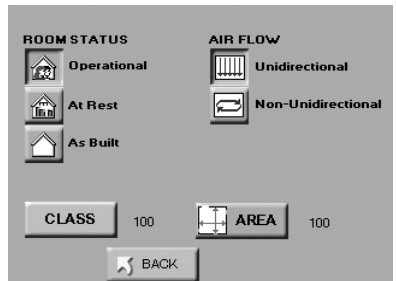
FED STD FT3 FED STD M3 ISO 14644-1 EC GMP BS 5295

Room Area:	10 ft²	Min Locations:	2
Class Level:	10000	Min Samples:	5
Air Flow:	UNIDIRECTIONAL		
Room Status:	OPERATIONAL		
	Start Rec=1, #=0		

Min Vols:	Ch1: 0.3	0.100	Ch5: 5.0	0.286
ft³	Ch2: 0.5	0.100	Ch6: 10.0	1.460
	Ch3: 1.0	0.100		
	Ch4: 3.0	0.103		

MAIN CANCEL RANGE SETUP

Select Room Occupancy Status
Air Flow Type

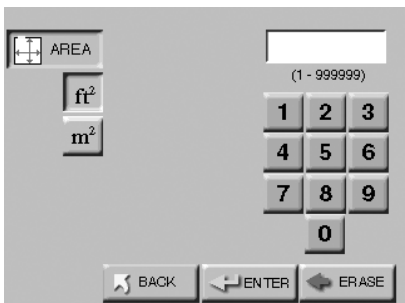


ROOM STATUS
 Operational
 At Rest
 As Built

AIR FLOW
 Unidirectional
 Non-Unidirectional

CLASS 100 AREA 100
 BACK

Area



AREA []
 (1 - 999999)
 ft²
 m²

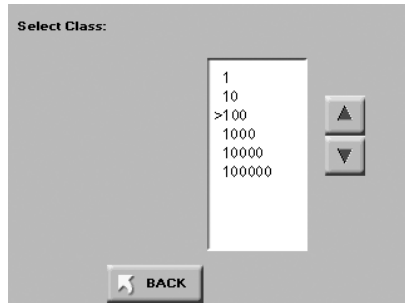
1 2 3
 4 5 6
 7 8 9
 0
 BACK ENTER ERASE

Report Function will Calculate:

- ★ # of Samples
- ★ # of Locations
- ★ Volume of Air

Needed to meet Cleanroom Class Selected

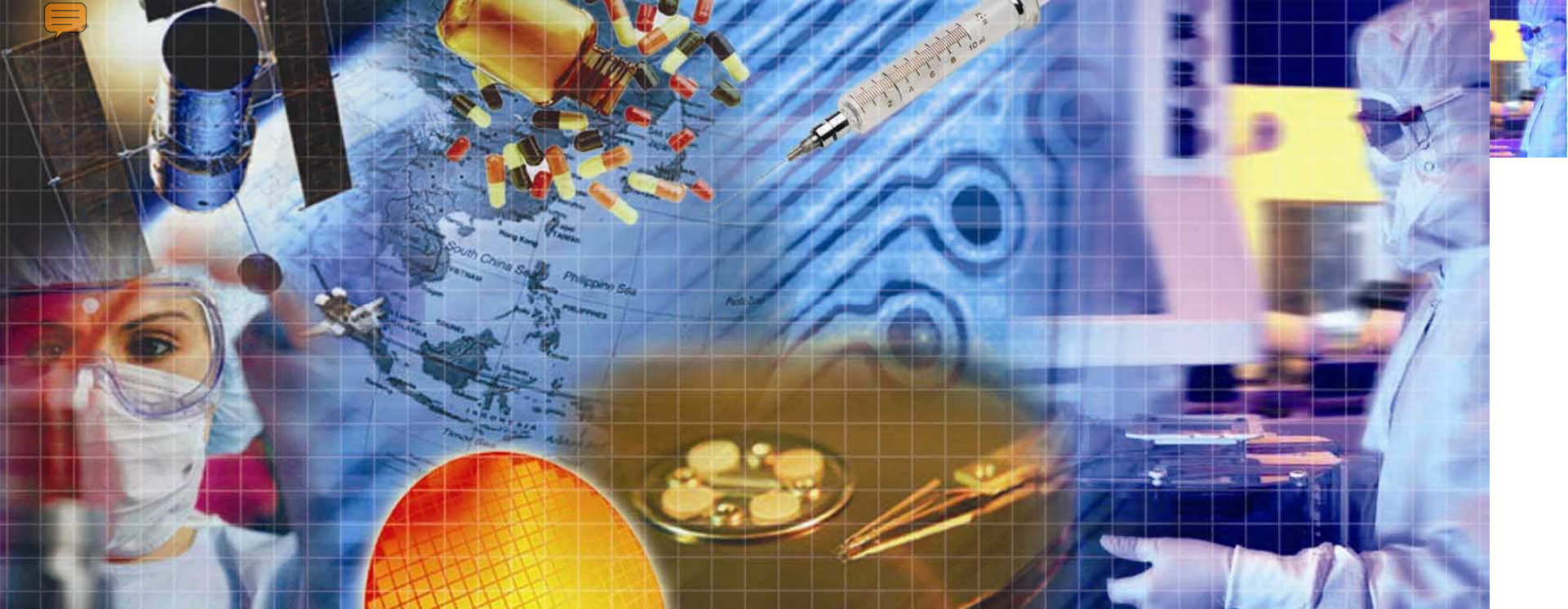
Cleanroom Class



Select Class:

1
 10
 >100
 1000
 10000
 100000

BACK



Thank You