

# Handheld

PARTICLE COUNTERS



# Handheld 2016/3016/5016

## Particle Counters



**T**HE ergonomically designed and lightweight Lighthouse Handheld 2016, 3016 and 5016 particle counters feature 0.2, 0.3 and 0.5 $\mu$ m sensitivities and are the most advanced handheld particle counters on the market. Providing up to 6 particle size channels of simultaneous counting, Lighthouse Handheld Particle Counters can display cumulative and differential particle count data as well as Temperature/Relative Humidity data on the fast and easy to read color touch screen. Lighthouse Handheld Particle Counters can hold up to 3000 records of particle data and the configurable recipe database can store up to 50 recipes for sampling and reports. Removable batteries and an optional charger help to maximize the Handheld's uptime. Data is very easily downloaded using the Lighthouse Data Transfer Software. The Handheld can be used as a mobile particle monitor or become a part of a large facility monitoring and management system.



TFT Color  
Touchscreen Interface



Removable  
Rechargeable  
Li-Ion Battery



One-handed Operation  
with Start & Stop  
on Handle



Removable  
Temp / RH and  
Isokinetic Probes



Easily Download  
Data to PC

## Features

- Handheld 2016: 0.2 - 2  $\mu$ m
- Handheld 3016: 0.3 - 25  $\mu$ m
- Handheld 5016: 0.5 - 25  $\mu$ m
- 0.1 CFM (2.83 LPM) Flow Rate
- View 6 Particle Sizes Simultaneously
- Designed for ISO 21501-4 Compliance:
- Unit-to-Unit Accuracy and Repeatability
- Bright 3.5" (8.89 cm) Color Touch Screen Display
- Removable / Rechargeable Li-Ion Battery
- Large Memory for Storing Data (3,000 samples)
- Concentration Limit - 4,000,000/ft<sup>3</sup>
- Temperature/Relative Humidity Probe Included
- Test Wizard for Cleanroom Pass/Fail Reports:
- FS-209E, ISO-14644-1 or EU GMP Annex 1
- 50-record Configurable Recipe Database
- Easily Configurable Interface with Zoom Capability
- Open Architecture Connectivity with OPC Server

- Alphanumeric Location Labels
- Internal Audible Alarm
- Ergonomically Designed
- Lightweight

## Benefits

- 2 Year Warranty
- User Friendly Interface
- International Support
- Low Cost of Ownership

## Operating:

50°F to 104°F (10°C to 40°C) / 20% to 95% non-condensing

## Storage:

14°F to 122°F (-10°C to 50°C) / Up to 98% non-condensing

# Handheld 3016 IAQ

## Particle Counter



OUR ergonomically designed and lightweight Lighthouse Handheld 3016 IAQ is the newest, most advanced handheld particle counter on the market, featuring Mass Concentration Mode that approximates density in  $\mu\text{g}/\text{m}^3$ . Providing up to 6 particle size channels of simultaneous counting, Lighthouse Handheld Particle Counters can display cumulative and differential particle count data as well as Temperature/Relative Humidity data on the fast and easy to read color touch screen. Lighthouse Handheld 3016 IAQ can hold up to 3000 records of particle data and the configurable recipe database can store up to 50 recipes for sampling and reports. The Handheld 3016 IAQ monitors particulate levels accurately and reliably, even in "hard-to-reach" areas where two-handed operation is unsafe.



$\mu$	$\Sigma$	$\text{m}^3$	
PM 0.3	0.05		91.31 F
PM 0.5	0.09		33.82 PCT
PM 1.0	0.13		AUTO
PM 2.5	0.16		CYCLES: 07 3
PM 5.0	0.21		SAMPLE: 00:01:00
PM 10.0	0.30		HOLD: 00:00:10
TPM:			RECS: 0/3000
			STOPPED

Mass  
Concentration  
Screen

### Features

- 0.3 - 10  $\mu\text{m}$  Size Range
- 0.1 CFM (2.83 LPM) Flow Rate
- View 6 Particle Sizes Simultaneously
- Approximate Mass Concentration in  $\mu\text{g} / \text{m}^3$
- 3.5" (8.89 cm) Color Touch Screen Interface
- Removable/Rechargeable Li-Ion Battery
- Large Memory for Storing Data (3,000 samples)
- Concentration Limit - 4,000,000/ $\text{ft}^3$
- Temperature/Relative Humidity Probe Included
- 200 User Defined Alphanumeric Location Labels
- Easily Configurable Interface with Zoom Capability
- On Screen Data Buffer Viewing
- Molded Handle Allows One-handed Sampling
- Internal Audible Alarm

- Ergonomically Designed
- Lightweight
- Data Easily Downloaded to Computer
- 50-record Configurable Recipe Database

### Benefits

- 2 Year Warranty
- User Friendly Interface
- International Support
- Low Cost of Ownership

### Operating:

50°F to 104°F (10°C to 40°C) / 20% to 95% non-condensing

### Storage:

14°F to 122°F (-10°C to 50°C) / Up to 98% non-condensing

# Handheld 3013

## Particle Counter



# U

SING an ergonomic and lightweight design, the Handheld 3013 is Lighthouse's newest handheld particle counter and is ideal for use where a smaller lightweight handheld counter is needed. Offering 3 channels of simultaneous particle counting, the Handheld 3013 displays both cumulative and differential particle count data on its easy to read 2.7" (6.8 cm), 128x64 OLED screen. It's rechargeable battery allows up to eight hours of continual operation. Easily download data via its USB port using the Lighthouse Data Transfer Software, LMS XChange. The Handheld 3013 will monitor particulate levels accurately and reliably, even in those "hard-to-reach" areas where two-handed operation is unsafe.

### Features

- 0.3 - 10  $\mu$ m Size Range
- 0.1 CFM (2.83 LPM) Flow Rate
- View 3 Particle Sizes Simultaneously
- Meets JIS B 9921 and ISO 21501-4 Standards
- Built-in Tilt Stand
- Real Time Data Display
- 128 x 64 OLED Screen
- Rechargeable Li-Ion Battery
- Large 1,000 sample Data Storage Memory
- 100 Location Labels
- Choose from English, French, German, Italian or Spanish for Display Language
- 50% Counting Efficiency per ISO 21501-4
- USB Interface
- Data Easily Downloaded to a Computer
- Easy Interface Configuration
- On Screen Data Buffer Viewing
- Internal Audible Alarm
- Easy One-handed Sampling
- Ergonomically Designed
- Lightweight - Only 1.5 lbs.
- Compact and Easy to Handle

### Benefits

- ISO Cleanroom Certification
- Filter Testing
- Indoor Air Quality Investigations
- Locate Contamination Sources
- Process Verification, Validation
- Quality Assurance
- Portable Particle Measurements

### Operating:

50°F to 104°F (10°C to 40°C)/20% to 95% non-condensing

### Storage:

14°F to 122°F (-10°C to 50°C)/Up to 98% non-condensing

### Applications

- ISO Cleanroom Certification
- Filter Testing
- Indoor Air Quality Investigations
- Locate Contamination Sources
- Process Verification, Validation
- Quality Assurance
- Portable Particle Measurements



# Product Selection Guide

	2016	3016
Size Range	0.2 - 2.0 µm	0.3 - 25.0 µm Standard: 0.3, 0.5, 0.7, 1.0, 2.0, 5.0 µm
Channel Size	0.2, 0.3, 0.5, 0.7, 1.0, 2.0 µm	Standard: 0.3, 0.5, 1.0, 3.0, 5.0, 10.0 µm Standard: 0.3, 0.5, 0.7, 1.0, 2.5, 5.0 µm Standard: 0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm Optional: 0.5, 1.0, 3.0, 5.0, 10.0, 25.0 µm
Counting Efficiency	50% @ 0.2 µm; 100% for particles > 0.45 µm (per ISO 21501-4)	50% @ 0.3 µm; 100% for particles > 0.45µm (per ISO 21501-4)

	3016IAQ	5016
Size Range	0.3 - 10.0 µm	0.5 - 25.0 µm
Channel Size	Standard: 0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm Optional: 0.5, 1.0, 3.0, 5.0, 10.0, 25.0 µm	Standard: 0.5, 0.7, 1.0, 3.0, 5.0, 10.0 µm Optional: 0.5, 1.0, 3.0, 5.0, 10.0, 25.0 µm (specify 3 channels at time of order)
Counting Efficiency	50% @ 0.3 µm; 100% for particles > 0.45 µm (per ISO 21501-4)	50% @ 0.5 µm; 100% for particles > 0.75 µm (per ISO 21501-4)

	3013
Size Range	0.3 - 10.0 µm
Channel Size	Standard: 0.3, 0.5, 5.0 µm
Counting Efficiency	50% @ 0.3 µm; 100% for particles > 0.45 µm (per JIS B 9921)

	2016 / 3016 / 3016IAQ / 5016	3013
Flow Rate	0.1 CFM (2.83 LPM)	0.1 CFM (2.83 LPM)
Laser Source	Extreme Life Laser Diode with > 20 years MTTF	Laser Diode
Zero Count Level	< 1 count / 5 minutes (per ISO 21501-4)	< 1 count / 5 minutes (per JIS B 9921)
Concentration Limits	8,000,000 particles / ft <sup>3</sup> @ 10% coincidence loss	8,000,000 particles/ft <sup>3</sup> @ 10% coincidence loss
Calibration	Meets ISO 21501-4 calibration using NIST traceable PSL spheres, DMA and condensation Particle Counter	NIST traceable, ISO 21501-4 compliant
Count Modes	Automatic, manual, beep, concentration, cumulative/differential	Not available
Data Storage	3,000 sample records, rotating buffer (includes particle and environmental data, location and time)	1,000 sample records, rotating buffer
Communication Modes	RS-232 via RJ-45 to a PC or an optional printer	USB output port
Supporting Software	LMS Express, LMS Express RT, LMS Pharma, LMS Pro	LMS XChange
Environmental Sensors	Temperature/relative humidity probe: 0-150°F (-17.8 to 65.6°C) ± 1.8°F @ 77°F, 0-100% ± 5% @ 33%	Not available
Touch Screen Display	3.5" (8.89 cm), color TFT	Not available
Reports	FS-209E, ISO-14644-1 (1999, 2015) & EU GMP	Not available
Alarms	Internal, adjustable alarm buzzer. Alarms on counts. Low battery or sensor failure	Not available
Sample Inlet	Isokinetic Sampling Probe	Isokinetic Sampling Probe
Sample Output	Internally filtered to HEPA standards (>99.97% @ 0.3 µm)	Not available
Vacuum Source	Internal pump, automatic flow control	Internal twin diaphragm pump
Enclosure	High impact injection molded plastic	Molded ABS
Power	External power supply: 12VDC, 1.25A	Internal Lithium Ion Battery
Battery	Li-Ion, removable & rechargeable	Li-Ion, internal & rechargeable
Dimensions	8.75" (L) x 5.0" (W) x 2.5" (H) (22.23 x 12.7 x 6.35 cm)	4.2" (W) x 6.5" (H) x 1.9" (D), (10.5 x 16.5 x 4.8 cm)
Weight	2.2 lb (1 kg)	1.5 lbs (0.68 kg)
Languages	English (U.S.), Deutsch, Espanol, Italiano, Français, Russian, Japanese, Korean and Chinese.	Same Languages are available

# Handheld

PARTICLE COUNTERS

## Lighthouse Worldwide Solutions Operations

### Corporate Headquarters

47300 Kato Road  
Fremont, CA 94538  
USA

Tel: +1 510 438 0500  
Fax: +1 510 438 3840

### Manufacturing Operations

1221 Disk Drive  
Medford, OR 97501  
USA

Tel: +1 541 770 5905  
Fax: +1 541 770 2033

### Benelux Operations

Van Heemstraweg 19-A  
6657 KD Boven-Leeuwen  
The Netherlands

Tel: +31 487 560811  
Fax: +31 487 560013

### EMEA Operations

Mimar Sinan Mh. Cavusbasi Cd.  
Ozge Sk. Zin D Business Center  
NO: 1/26  
Cekmekoy/Istanbul  
Turkey

Tel: +90 216 640 0 597  
Fax: +90 216 640 0 598

### Thailand Operations

9/13 Moo 5, Phaholyothin Rd.  
T. Klongneung, A. Klongluang  
Pathumthani, 12120  
Thailand

Tel: +662 902 2722-3  
Fax: +662 902 2724

### Malaysia Operations

No. 18-32-A1 & A2  
Gurney Tower, Persiaran Gurney  
Georgetown, 10250 Penang  
Malaysia

Tel: +604 370 1229  
Fax: +604 370 1209

DISTRIBUTED BY:



MADE IN USA

