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YESDUST

Particulate Sensor

www.critical-environment.com

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1 POLICIES

1.1 Important Note

Read and understand this manual prior to using this instrument. Carefully read the warranty policy, service policy, notices, disclaimers and revisions on the following pages.

This product must be used according to instructions indicated in this manual. This instrument has not been designed to be intrinsically safe. For your safety, **do not** use it in classified hazardous areas (explosion-rated environments).

INSTRUMENT SERIAL NUMBER:

PURCHASE DATE:

PURCHASED FROM:

1.2 Warranty Policy

Critical Environment Technologies Canada Inc. (CETCI), also referred to as the manufacturer, warrants this instrument to be free from defects in materials and workmanship for a period of two **(2) years from the date of purchase**.

The warranty status may be affected if the instrument has not been maintained as per the instructions indicated in this manual or has been abused or damaged in any way. The manufacturer is not liable for auxiliary interfaced equipment or consequential damage. This instrument is only to be used for purposes stated herein.

Warranty does not include third party trouble-shooting costs or freight to / from the manufacturer's facility. CETCI's liability is limited to replacement or repair of the equipment manufactured.

Due to ongoing research, development and product testing, the manufacturer reserves the right to change specifications without notice. The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data.

All goods must be shipped to the manufacturer by prepaid freight. All returned goods must be pre-authorized by obtaining a return merchandise authorization (RMA) number. Contact the manufacturer for a number and procedures required for product transport.

1.3 Service Policy

CETCI maintains an instrument service facility at the factory. Some CETCI distributors / agents may also have repair facilities; however, CETCI assumes no liability for service performed by anyone other than CETCI personnel.

Repairs are warranted for 90 days after date of shipment (sensors have individual warranties).

Should your instrument require non-warranty repair, you may contact the distributor from whom it was purchased or you may contact CETCI directly.

Prior to shipping equipment to CETCI, contact our office for an RMA #. All returned goods must be accompanied with an RMA number.

If CETCI is to do the repair work, you may send the instrument, prepaid, to:

**Attention: Service Department
Critical Environment Technologies Canada Inc.
Unit 145, 7391 Vantage Way
Delta, BC, V4G 1M3**

Always include your Returned Merchandise Authorization (RMA) number, address, telephone number, contact name, shipping / billing information, and a description of the defect as you perceive it. You will be contacted with a cost estimate for expected repairs, prior to the performance of any service work.

For liability reasons, CETCI has a policy of performing all needed repairs to restore the instrument to full operating condition.

Pack the equipment well (in its original packing if possible), as we cannot be held responsible for any damage incurred during shipping to our facility.

1.4 Copyrights

This manual is subject to copyright protection; all rights are reserved. Under international and domestic copyright laws, this manual may not be copied or translated, in whole or in part, in any manner or format, without the written permission of CETCI.

All software which CETCI utilizes and / or distributes holds a proprietary interest and is also subject to copyright protection and all rights are reserved. No party may use or copy such software in any manner or format, except to the extent that CETCI grants them a license to do so. IF THIS SOFTWARE IS BEING LOADED ONTO MORE THAN ONE COMPUTER, EXTRA SOFTWARE LICENSES MUST BE PURCHASED.

1.5 Disclaimer

Under no circumstances will CETCI be liable for any claims, losses or damages resulting from or arising out of the repair or modification of this equipment by a party other than CETCI service technicians, or by operation or use of the equipment other than in accordance with the printed instructions contained within this manual or if the equipment has been improperly maintained or subjected to neglect or accident. Any of the forgoing will void the warranty.

1.6 Revisions

This manual was written and published by CETCI. The manufacturer makes no warranty or representation, expressed or implied including any warranty of merchantability or fitness for purpose, with respect to this manual.

All information contained in this manual is believed to be true and accurate at the time of printing. However, as part of its continuing efforts to improve its products and their documentation, the manufacturer reserves the right to make changes at any time without notice. Revised copies of this manual can be obtained by contacting CETCI or visiting www.critical-environment.com.

Should you detect any error or omission in this manual, please contact CETCI at the following address:

Critical Environment Technologies Canada Inc.
Unit 145, 7391 Vantage Way, Delta, BC, V4G 1M3, Canada
Toll Free: +1.877.940.8741
Telephone: +1.604.940.8741
Fax: +1.604.940.8745
Email: marketing@cetci.com
Website: www.critical-environment.com

In no event will CETCI, its officers or employees be liable for any direct, special, incidental or consequential damages resulting from any defect in any manual, even if advised of the possibility of such damages.

2 INTRODUCTION

2.1 General Description

Thank you for purchasing our YESDUST Particulate Sensor.

The YESDUST is a general purpose particulate sensor for use with a YES multi-channel monitor (e.g. YESAIR, YESAIR-D and YES Plus LGA). It operates from an internal rechargeable nickel hydride battery pack and connects to the auxiliary port of the YES multi-channel monitor with the supplied interface cable. The measured readings are displayed as another sensor on the LCD display of the YES multi-channel monitor, and are also data logged to the YES multi-channel monitor internal flash card, if utilized.

YESDUST counts particulates between 1 and 10 microns in size. It has been designed for use as a general purpose indication of a particulate problem and should not be considered for applications requiring high accuracy such as “clean rooms”.

2.2 Key Features

- Low cost
- Light weight
- Quick response
- Long life
- Real time display on a YES multi-channel monitor (e.g. YESAIR & YES Plus LGA)
- Data logs to SD flash card in a YES multi-channel monitor
- Rechargeable nickel hydride battery pack
- Wall adapter for continuous operation
- RoHS compliant circuit boards

3 INSTRUMENT SPECIFICATIONS

3.1 Technical Specifications

GASTYPE

Particulates

MECHANICAL

Enclosure	General Purpose ABS
Weight	450 g (1.0 lbs)
Size	4.6" x 6.1" x 2.4" (118 mm x 156 mm x 60 mm)

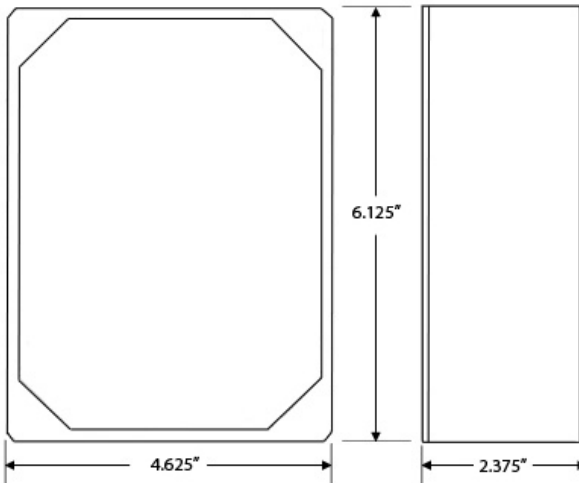
ELECTRICAL

Power	9 V wall adapter for rechargeable Nickel Hydride rechargeable battery pack.
Battery Life	16 hours continuous on a full charge.
Charge Time	Approximately 6 hours

ENVIRONMENTAL *(sensor dependant)*

Operating Temperature	0°C to 45°C (32°F to 113°F)
Humidity	15 - 90% RH non-condensing

3.2 Standard Enclosure Dimensions



4 SENSOR SPECIFICATIONS

4.1 Sensor Specifications

Particulate

Type	Highly sensitive, focused, infrared light beam. Self aspirated, convection.
Warm-Up Time	1 minute
Range	1 - 10 microns
Response Time (T_{90})	< 30 seconds
Operating Temperature	0°C to 45°C (32°F to 113°F)
Operating Humidity	0 - 95% RH non-condensing
Expected Life Span	Infrared light source estimated to be seven years.
Resolution	250 particulates / cubic foot
Sample Method	Diffusion

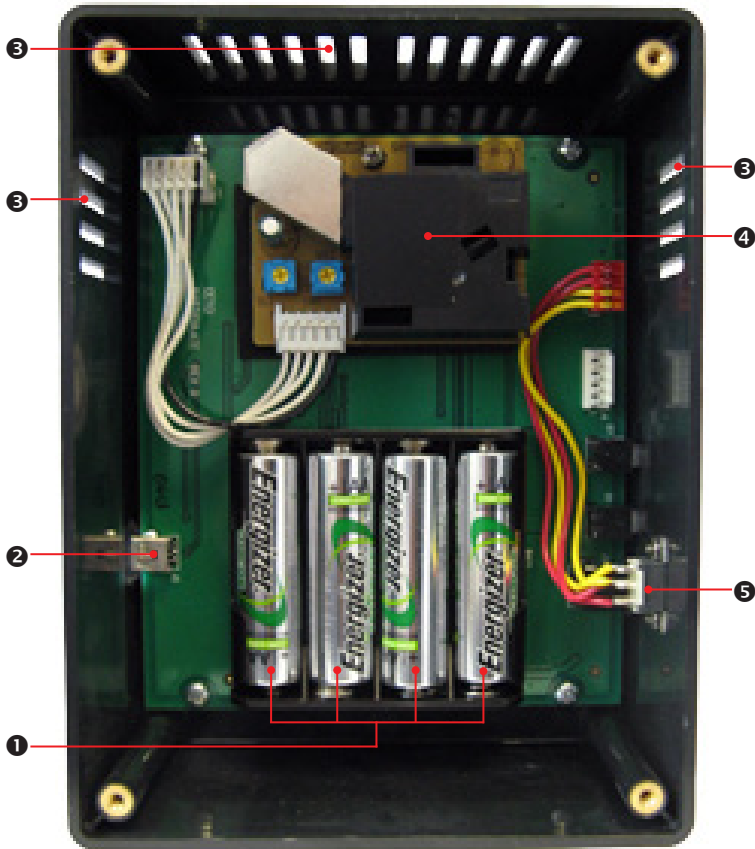
5 FEATURES & FUNCTIONS

5.1 Exterior Enclosure



NUMBER	FEATURE	FUNCTION
1	Screws	Secures face plate
2	Label	Lexan label

5.2 Interior System Layout



NUMBER	FEATURE	FUNCTION
①	Nickel Hydride Rechargeable Battery	Power source
②	Data Out Port	Connects to the YES multi-channel monitor
③	Vents	Allows air flow
④	Particulate Sensor	Senses particulate
⑤	Power Switch	Switches power on / off

5.3 Exterior Sides



NUMBER	FEATURE	FUNCTION
1	Data Out	Connects to the YES multi-channel monitor
2	Vents	Allows air flow
3	Comm LED	Indicates communication status
4	Charge LED	Indicates charge status
5	Power Switch	Switches power on / off
6	9VDC	Connects to the wall adapter

5.4 Exterior Top



NUMBER	FEATURE	FUNCTION
1	Vents	Allows air flow

6 OPERATION

NOTE: Batteries have been disconnected from the YESDUST for shipping. Install the batteries before using. Observe polarity when reinstalling batteries.

For proper operation, the YESDUST must be placed in a vertical position.

Before use, the sensor requires a one-minute warm up.

6.1 Operating Instructions

Battery Replacement

Step 1:

Open the YESDUST by removing the screws from the four corners of the front cover

Step 2:

Remove the old batteries by pressing the battery towards the spring in the battery holder and lifting the opposite end.

Step 3:

Insert the batteries into the battery holder, taking care to match the polarity markings.

WARNING: USE RECHARGEABLE NICKEL HYDRIDE BATTERIES ONLY. USING NON-RECHARGEABLE BATTERIES MAY RESULT IN DAMAGE TO THE UNIT.

Step 4:

Replace the front cover and secure it with the screws.

Connecting to a YES Multi-Channel Monitor

NOTE: Ensure that the YES multi-channel monitor is powered off before connecting the YESDUST.

Step 1:

Connect the included communications cable to the DATA OUT port on the YESDUST

Step 2:

Connect the other end of the cable to the AUX port on the YES multi-channel monitor.

Step 3:

Set the switch on the YESDUST to the ON position. The COMM light will turn on red to indicate that there is power but the YESDUST has not established communications with the YES multi-channel monitor.

Step 4:

Power up the YES multi-channel monitor.

Step 5:

Once communications have been established, the COMM light will turn green, and occasionally flash amber during communication.

Monitoring**Step 1:**

Connect the YESDUST to the YES multi-channel monitor.

Step 2:

Place the YESDUST in the area to be monitored, ensuring that the vents on the enclosure are at the top of the unit.

Step 3:

The YES Multi-channel Monitor will display and log real time readings in the same manner as its other channels.

Charging

NOTE: The CHARGE light on the YESDUST will turn RED if it is running on battery power and needs to be charged.

Step 1:

Connect the wall adapter to the 9VDC jack on the YESDUST

Step 2:

Turn the switch to the OFF position

Step 3:

The CHARGE light will turn amber while the batteries are charging. Once complete, the CHARGE light will turn green.

Disconnecting

To disconnect the YESDUST from the YES multi-channel Monitor, unplug the communication cable. The YES multi-channel monitor will display "Aux port has been removed" and the COMM light on the YESDUST will turn RED after approximately 45 seconds.

Powering Down

To power down the YESDUST, turn the switch to the OFF position. If the YESDUST is plugged in to the wall adapter, battery charging will start, otherwise the batteries are disconnected internally and the unit is powered down.

6.2 LED Patterns

MEANING	COMM LED	CHARGE LED
Not Connected	RED	*
Connected and Communicating	GREEN	*
Battery Low	*	RED
Battery Charged, Switched off	OFF	GREEN
Battery Charging, Switched off	OFF	AMBER

7 MAINTENANCE

The YESDUST requires virtually no maintenance; however CETCI recommends a service check of the YESDUST once per year to ensure that the sensor is in proper working order.

8 TROUBLE SHOOTING

YESDUST won't power up with batteries:

1. Check that the batteries are installed and that the polarities are correct
2. Ensure that the batteries are charged.
3. If the batteries do not hold a charge, replace them with 4 new rechargeable AA nickel metal hydride batteries.

YESDUST won't communicate with YES Multi-channel Monitor:

1. Check that the interface cable is undamaged
2. Check that the interface cable is connected to the DATA OUT port on the YESDUST and the AUX port on the YES Multi-channel Monitor.
3. Turn the YESDUST off, wait 30 seconds, and turn it back on.
4. Turn the YES Multi-channel Monitor off, wait 30 seconds, and turn it back on.

YESDUST won't power up with wall adapter, or will not go into charge mode:

1. Unplug the wall adapter from the YESDUST and the wall.
2. Check the cord, wall plug, and jack for damage.
3. Reconnect the power jack to the YESDUST and plug in the wall adapter.

If these troubleshooting steps do not resolve the issue, or if an issue not covered above arises, please contact the CETCI service department, at service@cetci.com or +1.604.940.8741, for further assistance.

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