

# **FREQUENTLY ASKED QUESTIONS on Particle Size Analyse by Laser Diffraction CILAS PSA 920, 1064, 1180**

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This document contains answers to frequently questions that customers ask to CILAS. If you want to know more about ours services and products, please read this document or contact CILAS trough our web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com).

The different questions are given in three themes: general questions on particle size analyse, questions on operating method and finally questions on quotation and orders.

## **GENERAL QUESTIONS:**

### **1/ What measure a particle size analyser ?**

A particle size analyser is used to determine or to control the size of particles contained in a powder matter, in an emulsion or in a suspension. Many fields use these products like cemetery, ceramics, manufacturing, pharmacological, cosmetic, biological, food or environmental industries.

### **2/ What is the interest of this method ?**

Laser diffraction has many advantages than common methods of size's determination. Laser diffraction gives you exact and reproducible results. Comparing to common methods like sifting, you will have faster results with a better reproducibility. So you will save time. Also, you can save your data using the software provided with the particle size analyser. All these points show that laser diffraction is the better method for routine and R&D analysis.

### **3/ What is the reliability of a particle size analyser and its maintenance cost ?**

CILAS particle size analysers are the most reliable products on the market. Old models (like 715 or 840) which are not produced since 10 years still function. The high reliability and performances are due to the knowledge CILAS acquired in military applications. This knowledge is totally applied to particle size analyser, which do not need an alignment of the optical unit due to the SBC (Short Bench Concept). The concept SBC is CILAS exclusivity and gives to user reliability and reproducibility in measurement. Also, we use laser diodes, which are 5 times more reliable than common He-Ne lasers. Particle size analyser have not special maintenance, only simple operations for the user as preventive maintenance. Finally, these strong points make that the total cost of a CILAS particle size analyser is one of the lower on the market, for a instrument which provides you exact and reproducible results.

**4/ How I can get information on CILAS products or/and spare parts ?**

For information on CILAS products and services, please see on our web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com) or contact us by mail at [cilasgranu@cilas.com](mailto:cilasgranu@cilas.com). For spare parts, please download on your USER CD-ROM the spare part list.

**5/ Where I can find specification or documentation on CILAS products ?**

Please see on CILAS web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com) the description of all our products and services. If you want more information, go on “Contact us” and ask for documentation you want. Our sales team will answer you very soon. If you are a CILAS member, you just have to connect on the web site and to download the files you need.

**6/ Do you have a sales network ?**

CILAS has a sales network all around the world. If you want to know which is CILAS distributor in your country, please see CILAS sales network on our web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com) or contact CILAS at [cilasgranu@cilas.com](mailto:cilasgranu@cilas.com).

<b>OPERATING METHOD:</b>
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**1/ What are the theory which allows you to measure size using laser diffraction ?**

The CILAS particle size analyser uses the diffraction of laser light to measure the size. CILAS products provide you exact and reproducible results through FRAUNHOFER and MIE algorithms. These two theories are well known as diffraction phenomenon. Basically, the first theory is used for big particles instead of Mie theory, which is employed for thin ones. If you want more information, please download the file “Laser diffraction in 5 minutes.pdf” on [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com).

**2/ What are standard conditions needed for measuring with CILAS products ?**

Measuring with CILAS particle size analyser does not require special conditions. You have to be in standard laboratory conditions in temperature and humidity rate. You also need to carry your sample by a wet or a dry way using solvents or pressured air. The average amount of sample needed is variable. It depends of sample properties (density, size,...) and of measurement method used (dry or wet mode). For example, you can need a sample amount of 0.1 g to 50 g.

### **3/ How to have a good sample dispersion in wet mode ?**

Having a good dispersion is very important. You have to test it each time before a measure with a new sample. The test consists on finding the best solvent in which the sample is well dispersed. The sample preparation is very important because it the most important source of measurement errors. Only you can find the best solvent using your knowledge on the sample properties. But our customer support can help you to optimise your standard operating system. The use of a right protocol will improve your results.

### **4/ How I know to the Mie index of my sample or my solvent ?**

For measure using Mie algorithms, you have to know at the refractive index of your sample and of your liquid (for wet mode only). So, you have a database in “The Particle Expert” software with the most common products. On your USER CD-ROM and on CILAS web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com), you also have the file “Mie index.pdf” which give you a table of index values.

## **QUOTATION AND ORDER:**

### **1/ Where I can ask for a quotation of a CILAS particle size analyser ?**

In order to have a quotation for a CILAS particle size analyser, please fill a request in the page “Contact us” of CILAS web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com). You have to precise clearly your needs in terms of measurement or the product you are looking for. Our sales team will contact you and will give you the quotation of your new device. After, our sales team will keep in touch with you if necessary. If you want a quotation for a spare part, do not forget to precise the spare part’s code, the model and the serial number of your particle size analyser.

### **2/ What will be the delivery time ?**

CILAS particle size analysers are produced and verified in France in our plant. CILAS always works with a stock in order to reduce this delivery time. When you will order your new particle size analyser, our sales team will inform you of the delivery time. If you want more information (especially on the shipment time), please contact your CILAS distributor or contact us directly.

### **3/ How to order a spare part ?**

You want a spare part for your CILAS particle size analyser. So, please contact your CILAS distributor and give him the code of the spare part, the model and the serial number of your particle size analyser. A spare part list is also available on your USER CD-ROM or on CILAS web site [www.particle-size-analyzer.com](http://www.particle-size-analyzer.com) (available only to registered CILAS members). For a quotation of spare parts or after sales service, contact your CILAS distributor or a technician of CILAS after sales service ([cilasgranu@cilas.com](mailto:cilasgranu@cilas.com)).