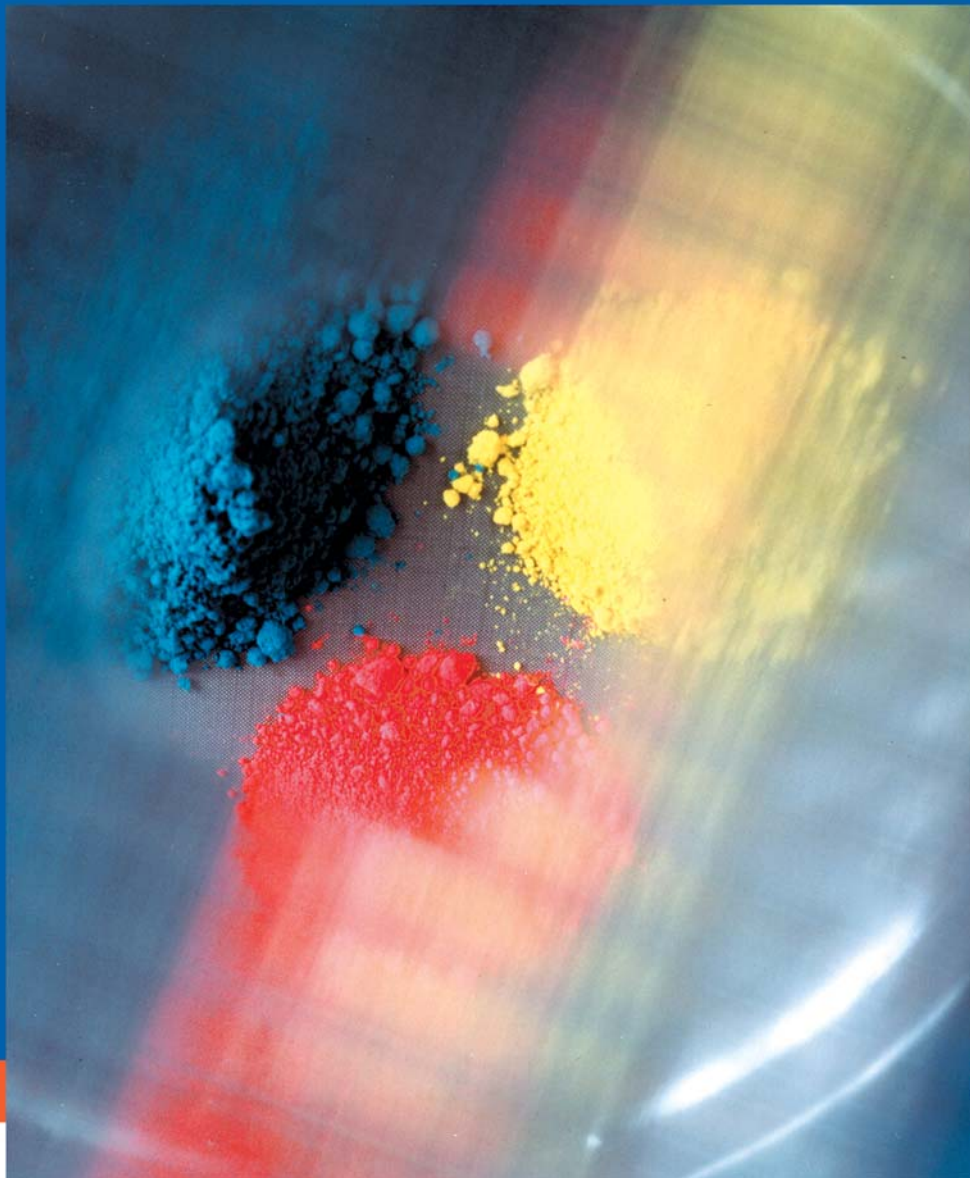


ALPINE

Air Jet Sieve[®] 200 LS-N

- particle size analysis made easy



HOSOKAWA ALPINE

ALPINE Air Jet Sieve[®] 200 LS-N

Wide application range · Reproducible results ·
Reliable in operation

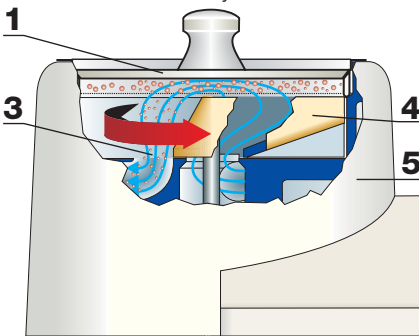
Applications

- ▶ Particle size analysis of any type of dry material.
Batch weights from 0.3 to 100 g.
Analyses down to 10 µm possible with micro-precision sieves
- ▶ In combination with optical analysis methods, e.g. to control the over-size particles.
Spatter grain in the range <1% up to a few ppm can only be reliably controlled in a targeted manner by sieving relatively large amounts of material.

Advantages

- ▶ Analysis sieving with the ALPINE Air Jet Sieve is an easy and cost-effective analysis method. Besides the quality control of your own production, the increasing globalisation on the sector of raw material procurement demands reliable control methods.
- ▶ The 200 LS-N is fast, reliable, and economical, and delivers perfectly reproducible product qualities.
- ▶ In comparison with laser analysis methods, analysis sieving can handle larger amounts of material. In the range below 150 µm, the results of vibrating screens are not reproducible.
- ▶ ALPINE's Air Jet Sieve 200 has become a recognised standard for quality control in a host of different industrial sectors throughout the world. Just one of the reasons why more than 13,000 of these sieves have been sold over the last 50 years.

Figure - 200 LS-N
with Ø 203-mm analysis sieve



Legend

- 1 Plexiglas cover 200 mm Ø
- 2 Sieve 203 mm inside Ø
- 3 Air and fines flow
- 4 Rotating slotted nozzle
- 5 Housing



Principle of operation

The only thing that moves the material being analysed is the air flow. The mechanical influence of the rotating nozzle guarantees an excellent dispersion of the material.

This means that at the same underpressure and same sieving duration, exactly reproducible particle size analyses are possible at any time.

The strong jet of air exiting the rotating slotted nozzle purges the sieve gauze continuously. This leads to exceptionally short sieving times and ensures that even those materials which are known to cause difficulty can be sieved successfully. The transparent plastic cover permits constant monitoring of the sieving process.

Standard equipment

- ▶ Integrated processor permits direct conversion of the sieve residue (g) into the through fraction (%).
- ▶ Two RS-232 C serial interfaces for direct connection of a laboratory balance, printer, underpressure controller, electronic tapper and for optional PC operation with LS-PRO software package.
- ▶ Underpressure indicated in display.
- ▶ Sieving parameters can be entered via the membrane keypad.



Technical specifications

Connection	230 V, 50/60 Hz or 115 V, 50/60 Hz
Nozzle drive	Geared motor N = 20 W
Slotted nozzle	1.4581
Weight	approx. 14 kg
Interfaces	1 x 25-pin male socket 1 x 9-pin male socket
Connection	3 m with right-angle plug cable

Special feature – fully automatic sieve identification

The fully automatic sieve identification eliminates the possibility of incorrect operation such as sieve insert errors, etc., thus increasing the reliability of the analysis.

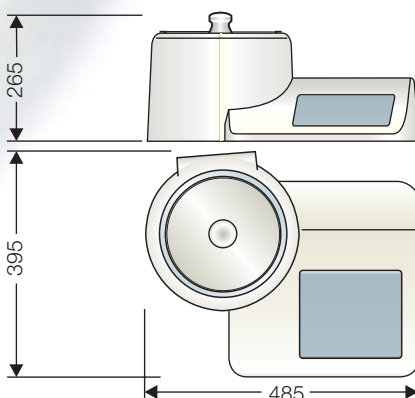
Each sieve is equipped with a transponder or tag integrated into a plastic clip which stores the individual sieve data:

- ▶ the mesh width
- ▶ the sieve and transponder serial number
- ▶ the sieve date of manufacture
- ▶ the sieve standard.
- ▶ The tag also includes a cleaning and inspection counter

The collected information is transmitted by means of telemetric signal transfer to the sensor (antenna) on the sieving unit. The inserted sieve is automatically identified, and all sieve data are read or stored in memory.

The advantages for the user are that the system

- ▶ saves having to enter the sieve mesh widths manually
- ▶ prevents sieve insert errors
- ▶ monitors the cleaning intervals as a quality management measure
- ▶ can read the individual identification codes
- ▶ supplies proof of the authenticity of the individual sieves



Application examples

- Andalusite
- Aniseed
- Amber
- Cellulose
- Chilli
- Chromium oxide
- Cobalt stearate
- Feldspar
- Gypsum
- Broken glass
- Mica
- Graphite
- Rose hips
- Sawdust
- Catalysts
- Coriander
- Corundum
- Laurel
- Magnesium-hydroxide
- PE granules
- Polyester
- Quartz
- Rapeseed
- Broken rice
- Rosmary
- Mustard seeds
- SIC
- Wax
- Washing powder
- Wollastonite



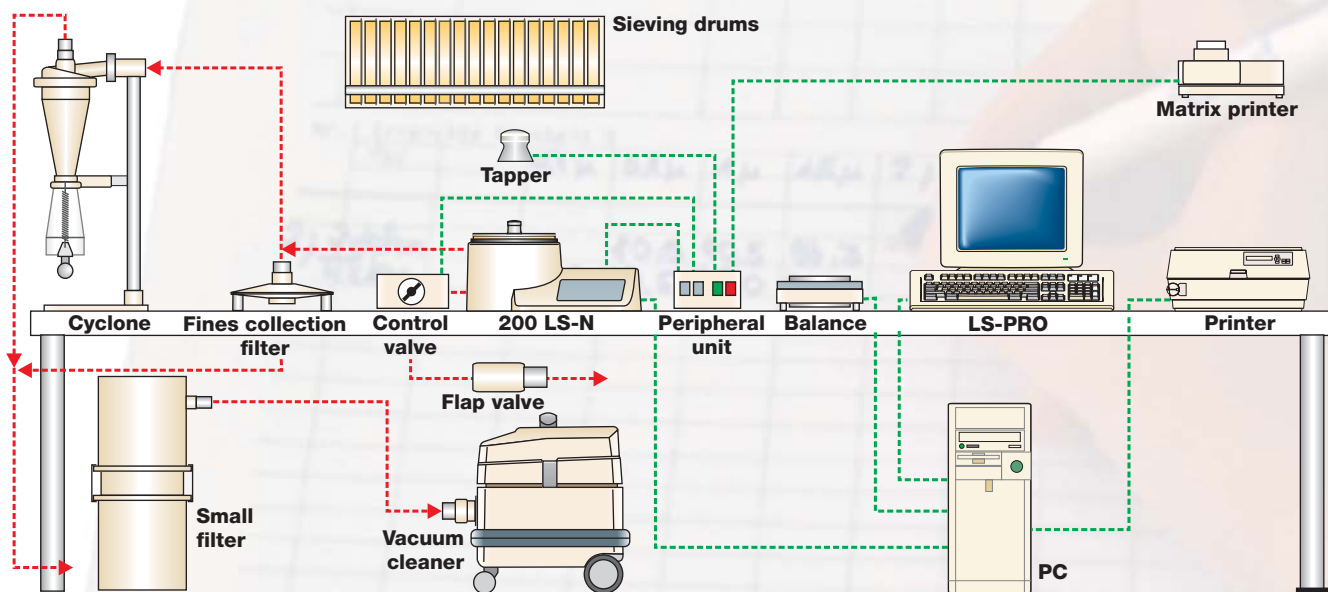
ALPINE Air Jet Sieve® 200 LS-N

The right accessories for every application

Select the best combination

Not everyone has the same needs when it comes to accessories for particle size analysis operations and quality control of powders. That's where we come in.

We have a wide range from which you can select the optimum combination of accessories to match your specific particle size analysis needs. And should you require more details before making your selection, we will be happy to advise you. Give us a call!

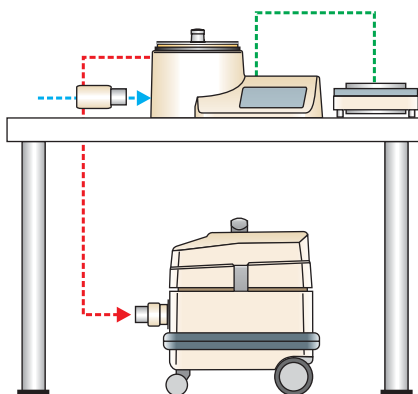


Basic unit

The basic 200 LS-N is equipped to be suitable for all conventional sieving tasks.

Components:

- ▶ Air-intake silencer to clean the suction-transferred air and to muffle the suction noise
- ▶ High-performance industrial vacuum cleaner to generate the operating air, with high-impact housing
- ▶ Laboratory balance with RS-232 C interface

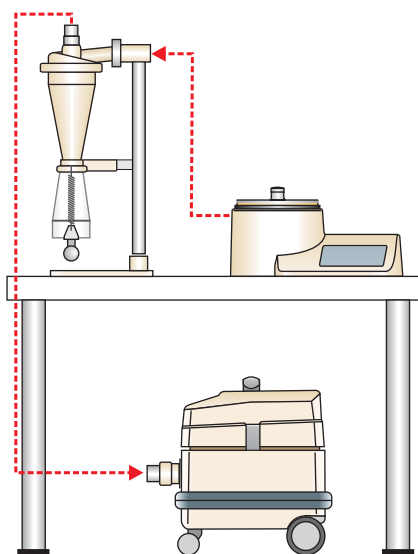


Version for fines recovery

The fines are collected by means of a high-efficiency cyclone and glass bottle, which eliminates the possibility of product contamination caused by filter lint. The cyclone is easy to dismantle and clean.

Components:

- ▶ High-efficiency GAZ 125 cyclone with stand and 1-dm³ glass bottle.
- ▶ Small filter (filtering surface approx. 1 m²) to take the load off the vacuum cleaner - highly recommended if used in continuous operation.
- ▶ High-performance industrial vacuum cleaner.

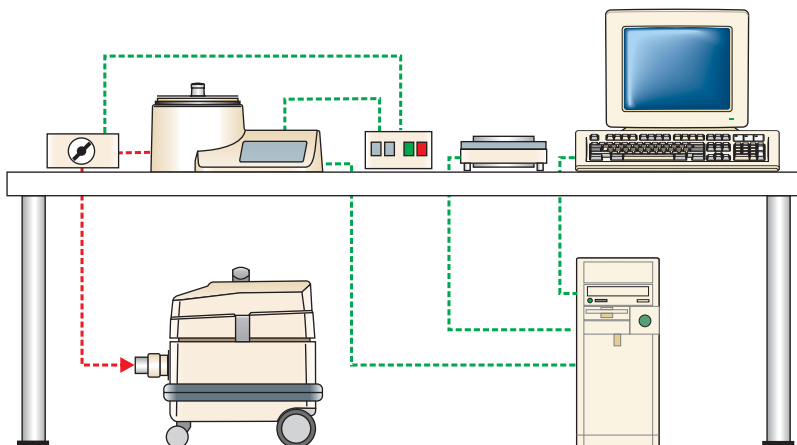


High-end version

This system configuration offers the highest possible degree of user comfort. The sieving analyses are documented by the LS-PRO software program. The fully automatic regulation of the underpressure guarantees accurate particle size analyses plus a constant, adjustable setpoint value which enables reproducible analysis conditions.

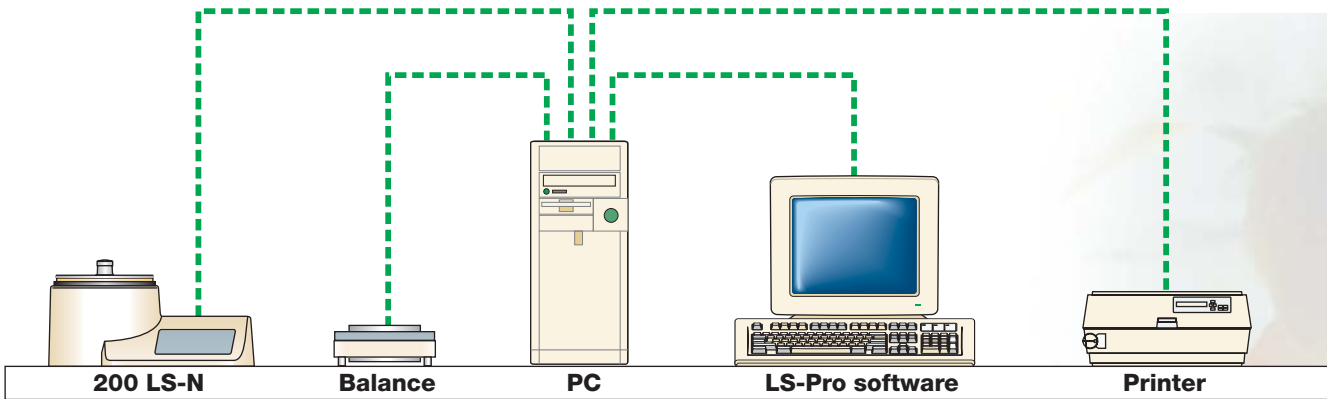
Components:

- ▶ PC operation with LS-PRO software
- ▶ Peripheral unit
- ▶ Butterfly valve
- ▶ Laboratory balance
- ▶ High-performance industrial vacuum cleaner.



ALPINE Air Jet Sieve® 200 LS-N

PC operation with ALPINE'S LS-PRO software package



Computer-aided sieving analyses

As a modern analysis unit, the 200 LS-N can be combined with a PC and with ALPINE'S LS-PRO software package for ultra-comfortable operation. The complete operation of the air jet sieve, including all control functions, documentation and archiving, is carried out with the PC under Windows®.

The PC guarantees optimal control of the 200 LS-N air jet sieve, and the on-line help functions make operation child's play.

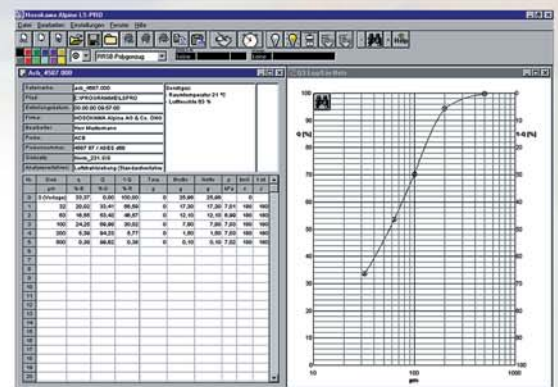
The 200 LS-N has two serial interfaces. PC operation is automatically detected by the 200 LS-N, no modifications are necessary (units later than 5/97).

Special features – ALPINE LS-PRO software program

- ▶ Interactive control of the complete air jet sieving operation with indication of the actual status.
- ▶ Documentation includes date, time, operator name, sample ID, sieving parameters, peripheral conditions, error messages and other comments.
- ▶ The results can be displayed in table form or as a graph.
- ▶ Analysis results can be displayed in dots or curves (with curve alignment, extrapolation, approximation) in various grid forms, i.e. semi-logarithmic or as an RRSB grid. Trend indication of selected analyses by means of, for example, the x50 value (up to 10 different analyses can be displayed simultaneously).
- ▶ Standard sieve sets can be stored in memory to facilitate uniform sieving procedures.
- ▶ Data transfer possible via the clipboard to other Windows® programs.
- ▶ On-line help functions and menu-guided operator information.

Alpine PC package

We also offer a package which includes a proprietary PC with completely pre-installed software plus printer and screen. Contact us for full details.



ALPINE Air Jet Sieve® 200 LS-N

The large range of sieves means a wider analysis range



Ø203-mm analysis sieves

in new design with improved self-centering seat in the sieve housing. Only suitable for the new 200 LS-N air jet sieves.

Utility patent DE 295 12 879 U1

Sieve frame and sieve deck made of stainless steel.

Option

Certificate for analysis sieve

with inspection certificate 3.1B as per DIN EN 10204. On-screen analysis including inspection certificate and results printed out as a table and also as a graph.

Option

Ultrasonic cleaner

2 sizes, with sieve holder.

Option

Sieve identification for analysis sieves

Plastic clip suitable for all 200 LS-N analysis sieves (old or new).

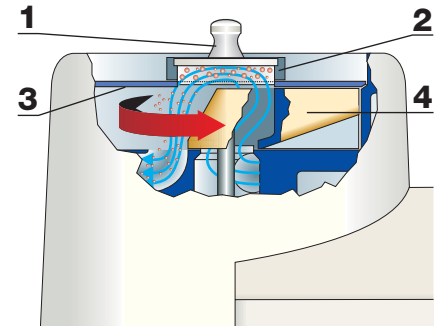
The clip is a prerequisite for operation of the fully automatic sieve recognition function.



Comparison table

ASTM E 11-95	BS 410:86 Mesh	DIN ISO 3310-µm
635		20
500		25
450	440	32
		36
400	400	38
		40
325	350	45
		50
270	300	53
		56
230	240	63
		71
200	200	75
		80
170	170	90
		100
140	150	106
120	120	125
100	100	150
		160
80	85	180
		200
70	72	212
		224
60	60	250
50	52	300
		315
45	44	355
		400
40	36	425
35	30	500
30	25	600
		630
25	22	710
		800
20	18	850
18	16	1000
16	14	1180
		1250
14	12	1400
		1600
12	10	1700
		1800
10	8	2000
		2500
		3150
5		4000

Alpine micro-precision sieving unit for Ø75-mm micro-precision sieves



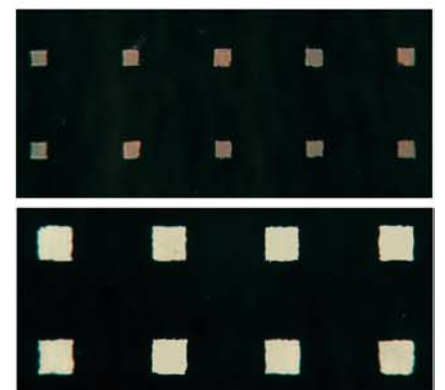
- 1 Plexiglas cover 75 mm Ø
- 2 Micro-precision sieve 75 mm Ø
- 3 Adapter ring
- 4 Rotating slotted nozzle

Micro-precision sieves

The 200 LS-N can also be equipped with micro-precision sieves with square perforations down to 10 µm in width. These sieves are characterised by their high degree of precision. The deviation between the effective and nominal perforation is less than 1 µm.

Figures

These two enlargements show micro-precision sieves with square perforations. Perforation width 20 µm and 10 µm.



ALPINE Air Jet Sieve® 200 LS-N

ALPINE's carefree package ensures constant high quality



Full-service package

The DIN ISO 9000 ff. standard dictates that equipment of this kind be inspected regularly.

The full-service package guarantees a high availability of your 200 LS-N air jet sieve and moreover gives you the assurance that the analyses carried out on your products are of the maximum precision.

The full-service package includes:

- ▶ General check for function and damage
- ▶ Pressure test under application of high-precision calibration instruments
- ▶ Test run
- ▶ Preparation of a calibration report
- ▶ Loan of an air jet sieve during maintenance
- ▶ Shipping/return of the units within the EU

Replacement of defective parts

Defective parts are exchanged as part and parcel of this service package.

Problems in between scheduled maintenance procedures

We guarantee the quickest possible reaction – either spare parts are shipped to you or an air jet sieve is placed at your disposal during repairs.

Inspection of analysis sieves

Included in the annual maintenance of the unit is also the inspection of used analysis sieves with subsequent certification.

Calibration and certification

- ▶ Certification of analysis sieves
- ▶ Inspection of the entire air jet sieve
- ▶ Recertification of used sieves
- ▶ Setting of different standards, e.g. DIN, ASTM, etc.
- ▶ Results log printed out in table or graphic form

Direct contact

Alpine Customer Service Division:

Tel. +49 (0) 821 5906-462

Fax +49 (0) 821 5906-457

E-mail service@alpine.hosokawa.com

HOSOKAWA ALPINE Aktiengesellschaft & Co. OHG
Prüfprotokoll 200 LS-N / Endabnahme

Kundenauftrag / Order number: _____
 Kontrollen und Inspektionen sind an: _____
 Internet: <http://www.hosokawa.com>

Abschneuregelsiege B nach DIN EN 19 284
 Maßzahl-Nummer 20015046 von 2001-02-28 Analyse-Messung

Analyse-Nr.: 6601261 Rahmen-Dia.: 203 mm Rahmen-Material: Edelstahl-Korfen
 Kunden-Nr.: 51117467 Weibart: Lotum Metallballgewebe: Edelstahl
 Nennschichtstärke w: 250,0 µm Nennschichtdicke d: 160 µm

Toleranz der Maschenweite Y = ±0,9 X = ±8,0 = ±22,4
 Maßergebnis von 105 getriebslosem Maschen in Kartierung
 Maßergebnis von 105 gemessenen Maschen in Schabringung Werte in Mikrometer

Kette	Rechenwert		Schall		Maschenweite	Kette *	Schall >
	(n-Y)	0	0	0			
(n-Y) (n=1)	103	98,0002	102	97,1429	Standardabweichung	3,896	6,626
(n-Y) (n=2)	2	1,50476	3	2,83714	K-Faktor	1,340	1,340
(n-X)	0	0	0	0			

Der Siebboden entspricht ISO/VDI 5310-1:1999.
 Obere Grenze einer Klasse und Anzahl der Maschen in dieser Klasse:

Klasse	Kette		Schall	
	Anzahl	Prozent	Anzahl	Prozent
226.7	0	0.0	0	0.0
230.2	0	0.0	0	0.0
233.7	0	0.0	0	0.0
237.3	0	0.0	0	0.0
240.8	0	0.0	1	1.0
244.3	0	0.0	7	6.7
247.9	4	3.8	27	25.7
251.4	41	39.0	31	29.5
255.0	35	33.3	24	22.9
258.5	17	16.2	10	9.5
262.0	5	4.8	4	3.8
265.6	0	0.0	1	1.0
269.1	0	0.0	0	0.0
272.6	0	0.0	0	0.0
276.2	0	0.0	0	0.0
279.7	0	0.0	0	0.0
283.2	0	0.0	0	0.0
286.8	0	0.0	0	0.0
290.3	0	0.0	0	0.0
293.9	0	0.0	0	0.0

Rev. 4 (T/M) / 03.06.00

EDV-erstelltes Zeugnis, daher auch ohne Unterschrift gültig. Weiterveränderungen: Falsch



HOSOKAWA
ALPINE Aktiengesellschaft & Co. OHG

Hosokawa Alpine is a member of the Hosokawa Micron Group, responding to global needs through emphasis on materials science and engineering. The Group is an international provider of equipment and technology for powder and particle processing, plastics processing and confectionery products. The Group maintains facilities for research, engineering, manufacturing and service in each of the world's major industrial markets.

All details in this brochure are purely informative and non-binding.
 Only our quotation texts are binding.

<http://www.luftstrahlsieb.de>
www.airjetsieve.com
www.alpinehosokawa.com

HOSOKAWA ALPINE AKTIENGESELLSCHAFT & Co. OHG

Postal address: P.O. Box 10 11 51
 D-86001 Augsburg/Germany

Delivery address: Peter-Dörfner-Str. 13 - 25
 D-86199 Augsburg

Telephone: 00 49 (0) 821 5906-0

Fax: 00 49 (0) 821 5906-620

E-mail: mail@alpine.hosokawa.com