THE ASPHALT ANALYZER ***PURE MODULAR SYSTEM***

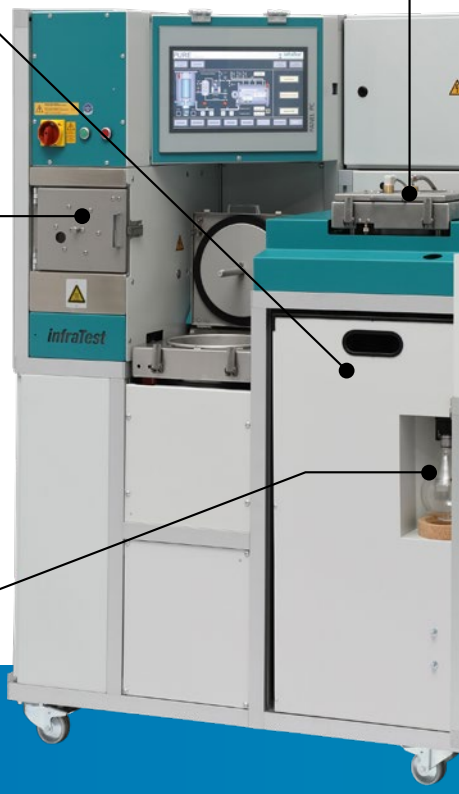
Advantages:

- Space-saving due to new device arrangement
- New recovery process for gentle and economical solvent treatment
- New control concept for online adaptation to modern extraction tasks
- Modular structure in expandable expansion stages
- Pure module, MODA module for modified binding agents, Rota module with rotary evaporator with integrated oil bath, rinsing unit module
- Suitable solvents Tri, Per, Methylene
- Possibility of fully automated bitumen removal including further use in the Rota module in just a few simple steps
- Standardized module width of 650 mm
- Double heating bath with multi-stage temperature control

Wash chamber module MODA

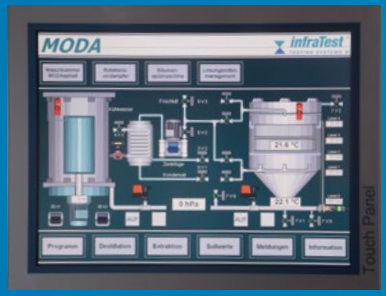
Recovery in the PURE module

Wash chamber in the PURE module



Sampling device in the PURE module

Examples of the control concept



Fully automatic module ROTA

Washroom in the parts cleaning module

Asphalt analyzer PURE

Analyzer PURE, the new generation of the proven asphalt analyzer technology in a space-saving device design is ready to meet the most modern extraction requirements in the laboratory. The composition of the mixed goods and the modification of bitumen is becoming more and more diverse and is now more extensive than it was when the first generation of asphalt analyzers from infraTest was introduced. With the addition of glass fibers, rubber-modified bitumen and asphalt granules, the demands on the extraction and quantification of the mix have become more diverse and comprehensive. Along with the increased demands in the laboratory, infraTest wants to offer a new space-saving concept for testing asphalt mixtures.

The modular composition of the PURE analyzer extraction section allows standard extraction in half of the space that is conventionally required. This means that two basic modules or two modules that can be combined in different ways can be accommodated in one fume cupboard. The modular design also allows the combination of different modules as double, triple and quadruple units, which can also be integrated into an existing system at a later date.

Control concept

The intuitive and self-explanatory control concept allows the user in the laboratory to select and control all individual modules and the ongoing processes in real time. The extraction of the asphalt mixture, via the fully automatic separation of bitumen and solvents in the Rota module or the cleaning of bitumen-contaminated laboratory glassware in the rinsing unit module, including solvent management, can be provided via the innovative machine display with industrial control.

THE ASPHALT ANALYZER ***PURE MODULAR SYSTEM***

The MODA and ROTA modules can only be used in combination with the PURE basic module 20-11600.

Asphalt analyzer PURE basic module

EN 12697-1 - ASTM D 8159-2018 - AASHTO For extraction and binder content determination using non-flammable solvents.

The system can be factory-programmed for the following solvents: trichlorethylene, tetrachlorethylene (perchlorethylene) or dichloromethane (methylene chloride). The asphalt mixture (up to 3.5 kg) is weighed into a sieve drum (20-1110..) and broken down into its components in the washing chamber using solvents and the use of ultrasound. The minerals remain in the sieve drum, binders, solvents and fillers are washed out and separated again in the attached centrifuge. The filler is held back in the centrifugal sleeve 20-0330 or 20-0335 and the binder/solvent are then separated again in the recovery plant by distillation. The solvent is collected in the storage tank for further use.

The asphalt analyzer PURE basic module is equipped with a new, indirectly heated recovery system, which enables even more careful and safer handling of the solvents used. The control and entries are made via the "Prof.EX 4.0" software. The graphical user interface enables easy operation for tests with standard materials as well as an extended interface for determining the extraction parameters for challenging materials. Minerals and fillers are automatically dried in the machine and are then available for sieve analysis/weighing. Centrifugal sleeves (20-0330 or 20-0335), washing drums 20-1110 ... and washing drum covers 20-1106 are also required for operation. To cool the system, a continuous cooling water supply with 5 to 8 l/min is required in the laboratory. at 3 bar and 10 to 15°C flow temperature or a closed cooling system 20-1144 required. Approx. 20 l of highly stabilized solvent are required for commissioning. Available with 15" screen for simultaneous control of the following modules:

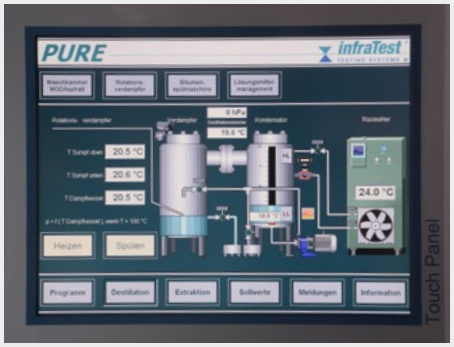
- 20-11600E10 Washing device module MODA
- 20-11600E20 ROTA rotary evaporator module Only available in combination with at least one 20-11600E... module. Not available as a single module.

Technical data

Dimension	1300x960x1790mm
Weight	380.00 kg
Electrical data	400 V, 50 Hz, 3 P + N + PE, 7 kW

20-11600

Central control via the PURE basic module



THE ASPHALT ANALYZER ***PURE MODULAR SYSTEM***

The MODA and ROTA modules can only be used in combination with the PURE basic module 20-11600.

Module washing device MODA

EN 12697-3 - ASTM D 8159-2018 - AASHTO For the extraction and determination of the binder content of modified asphalt building materials, in particular rubber-modified asphalt using non-flammable solvents, factory-programmed for: trichlorethylene, tetrachlorethylene (perchlorethylene).

The washing device module MODA can only be operated with the module asphalt analyzer Pure basic module. The asphalt mixture is loosened in the horizontal washing chamber by regular shaking and rinsing. Up to 3.5 kg can be filled for modified building materials. Rubber and floating components are suspended and separated by an overflow device. Undissolved floating components are collected on the scavenging ring.

The control and entries are made via the "Prof.EX 4.0" software on the asphalt analyzer PURE basic module. The graphical user interface enables easy operation for tests with standard materials as well as an extended interface for determining the extraction parameters for challenging materials.

The minerals remain in the strainer basket. Filler and the binder/solvent mixture are transferred to the centrifuge and recovery system of the basic module. Minerals and fillers are automatically dried in the machine and are then available for sieve analysis/weighing. The remaining suspended material is also dried on the flushing ring Incl. 1 set of wash bush and flushing ring 20-11600E523. A second set is recommended for continuous work.

The module is built on top of the basic module. No additional installation width is required. Supply is via the basic module. No additional power connection is required.

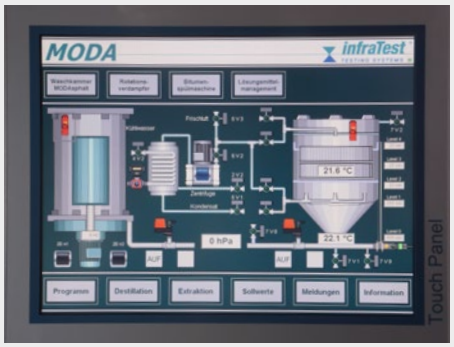
Technical data

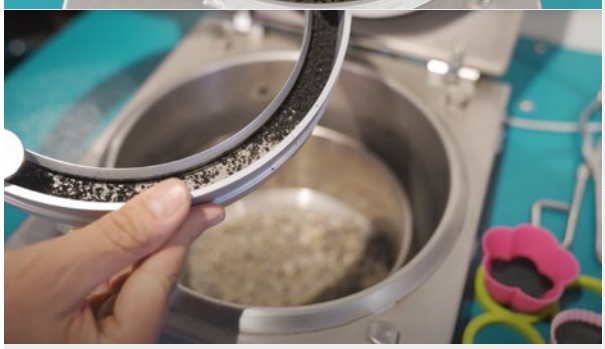
Dimension	650x960x1790mm
Weight	91.00 kg
Electrical data	400 V, 50 Hz, 3 P + N + PE, 1.5 kW

20-11600E10

The MODA module is an extension of the basic module and differs optically only in the attachment on the recovery.

Control of the MODA module via the PURE basic module





THE ASPHALT ANALYZER ***PURE MODULAR SYSTEM***

The MODA and ROTA modules can only be used in combination with the PURE basic module 20-11600.

Module rotary evaporator ROTA

EN 12697-3 For the fully automatic recovery of the binder after extraction. Here, the binder - solvent mixture from the recovery of the asphalt analyzer PURE basic module is introduced fully automatically into the evaporator flask of the integrated rotary evaporator. The module consists of a fully automatic rotary evaporator including glass set with linear and lifting drive, 2 heating baths with different controllable temperatures and the membrane vacuum pump installed in a stable module frame. The recovered solvent from the distillation is automatically diverted to either the solvent tank or the scrap bin. The rotary evaporator module can only be operated with the Pure basic module asphalt analyzer. The control and entries are made via the "Prof. EX 4 0" software on the asphalt analyzer PURE basic module. The graphical user interface enables easy operation and input. In particular, the temperature of the heating baths, the vacuum control, the horizontal and vertical traversing device and the times are specified.

Technical specifications:

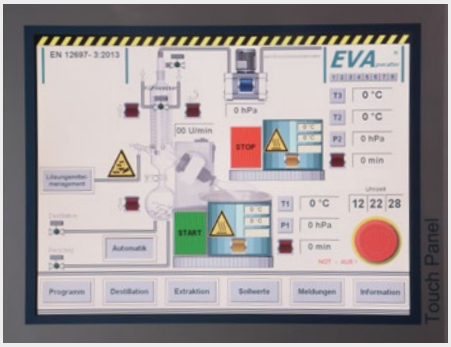
- Evaporator drive 20 .. 280 rpm with digital display
- Glass set with vertical cooler
- evaporating flask 1000 ml
- 1000 ml receiving flask
- Heating bath temperature range 20 .. 210° C, accuracy +- 1° C with overtemperature protection
- boiling temperature probe
- 2-stage vacuum pump, resistant to chemicals, ultimate pressure 7 mbar
- Vacuum controller · Condensate cooler
- vacuum valve
- Vacuum and water hose set

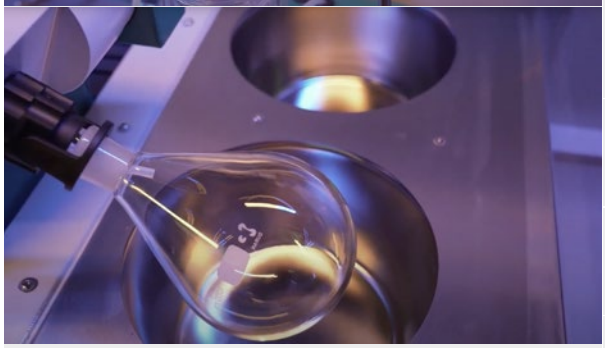
More dates

Dimension	650x960x1790mm
Weight	228.00 kg
Electrical data	400V, 50Hz, 16A

20-11600E20

Control via the PURE basic module





Solvent handling module for 20-11600

For use with base module 20-11600 in connection with the modules MODA, ROTA and stand 20-11600E50.

20-11600E40

THE ASPHALT ANALYZER ***PURE MODULAR SYSTEM***

Module ROTA

MODA module

Parts cleaning module

PURE basic module

The MODA and ROTA modules can only be used in combination with the PURE basic module 20-11600.

Parts cleaning module PURE

For removing bitumen residues on small parts and glassware with non-flammable solvents (TRI, PER, methylene). The control and entries are made via the "Prof.EX 4.0" software. The 7" graphical user interface enables easy operation.

- Heated washing area approx. 500x300x300 mm with spray nozzles for inside and outside cleaning of up to 8 parts
- Collecting sieve at the solvent outlet for coarse dirt
- Integrated circulating air drying at the end of the process
- Variable process control via integrated PLC with changeable rinsing and drying times
- Connections for solvent supply and disposal
- Various insert frames are optionally available

Technical data

Dimension	650x960x1790mm
Weight	193.00 kg
Electrical data	400 V, 2 kW, 50 Hz, 3 P+N+PE

20-11604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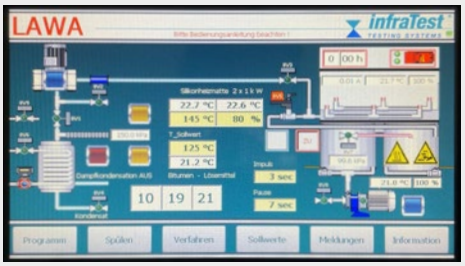
steering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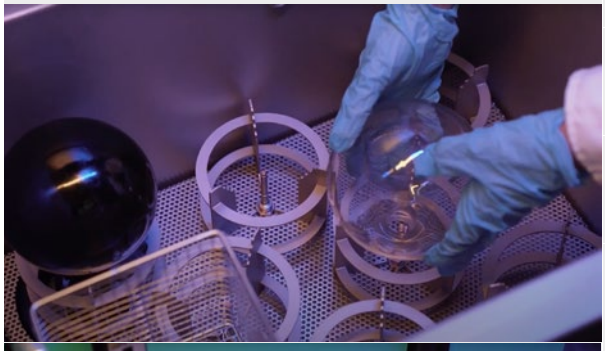
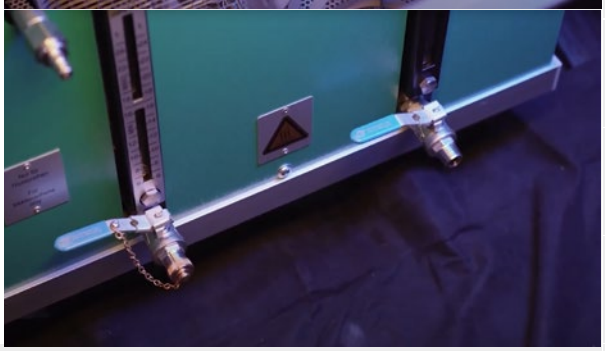




The modular system PURE can be combined in **various variants**.

HIGHLIGHT

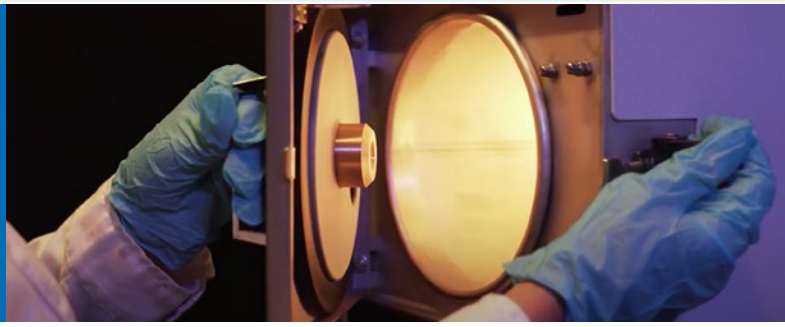
Indirect Recovery

Gentle treatment of the solvent through indirect recovery. The recovery is equipped with a double-walled tank. The heat treatment is carried out using a water reservoir. This means that the solvent does not come into direct contact with the heat and is gently heated.


PANEL PC
infraTest

ACCESSORIES

for PURE MODULAR SYSTEM



Closing cover

For washing drum.

Technical data

Weight	0.80 kg

20-1106

Washing drum

to the asphalt analyzer with replaceable stainless steel sieve body. The sealing cap 20-1106 is also required.

20-1110	Mesh size: 0.09 mm
20-1111	Mesh size: 0.075 mm
20-1112	Mesh size: 0.063 mm

Washing drum 2.5 kg

20-1113

Slingshot Sleeve

Ø 120 mm made of stainless steel.

20-0330	for holding filler up to approx. 200 g.
20-0335	for holding filler up to approx. 300 g.

Test case

For trichlorethylene and per-chlorethylene. Defective solvent will lead to malfunctions in the extraction and damage to the equipment. For this reason, only highly stable solvents should be used for extraction. This should be checked regularly for the pH value and the alkalinity reserve using this test kit.

Technical data

Weight	2.20 kg

20-1190

Stabilizer TRI

Container 1000 ml for post-stabilization of the solvent. Only suitable for the post-stabilization of HI-TRI-SMG from DOW.

Technical data

Weight	1.50 kg

20-1195

Stabilizer PER

For perchlorethylene (tetrachlorethylene). Container 1000 ml for post-stabilization of the solvent.

Technical data

Weight	1.50 kg

20-1197G PROSTAB

20-1197S PER

Refill Pack 1 (Reagent 1, 2 + 3)

For determining pH alkalinity value tri and per, consisting of:

- Reagent 1 15mL
- Reagent 2 250mL
- Reagent 3 250ml

Technical data

Weight	0.80 kg

20-1191

Refill pack 2 (reagent 1 + 2)

For determining pH alkalinity value tri and per, consisting of:

- Reagent 1 15mL
- Reagent 2 250 ml 2 x

Technical data

Weight	0.80 kg

20-1193

Refill Pack 3 (Reagent 3)

For determining the pH-alkaline value Tri and Per. consisting of:

- Reagent 3 250mL x 3

Technical data

Weight	0.20 kg

20-1194

ACCESSORIES

for PURE MODULAR SYSTEM

Removal coupling SAFE-TAINER 4-pin

Suitable for 33 and 54 l Safe-Tainer. Complete with foot pump, valves and 1.5 m connection hose with connection coupling for filling the asphalt analyzer.

Technical specifications

Weight	2.00 kg

20-9800

Removal coupling SAFE-TAINER 3-pin

suitable for 33 and 54 l Safe-Tainer. Complete with foot pump, valves and 1.5 m connection hose with connection coupling for filling the asphalt analyzer.

Technical specifications

Weight	2.00 kg

20-9805

Extraction coupling supply center 4-pin

with 1.5 m fabric hose and plug-in coupling for connection to the analyzer.

Technical specifications

Weight	2.00 kg

20-9850E20

Extraction coupling supply center 3-pin

with 1.5 m fabric hose and plug-in coupling for connection to the analyzer.

Technical specifications

Weight	2.00 kg

20-9850E23

Supply and disposal wagons

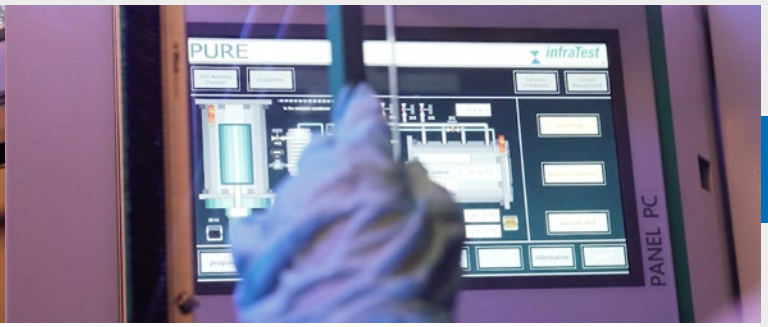
Includes:

- 20-9850E30 Mobile collection tray with push handle (L940xW500xH1080 mm), galvanized steel with small parts container
- 20-9850E50 Barrel adapter for installation in the 2" socket of the used goods drum with 3 m transparent PTFE hose with shut-off valve and vacuum limiter to protect the used goods drum. Hose length can be individually adjusted by the customer
- Overfill indicator for mounting in the ¾" socket of the used goods barrel with hose to the vacuum pump (included in 20-9850E50) ·20-9850E40 Vacuum pump with 2.5 m power cable mounted in the small parts container of the collection pan
- D20.10839 Barrel key for opening and closing the closure plugs of the used goods barrel
- 20-9850E23 Extraction coupling supply center 3-pin
- Optional assembly of a Woulff bottle 30 L used goods barrel, safetainer and withdrawal coupling 20-9850E20 not included.

Technical data

Weight	49.00 kg

20-9850



Vacuum pump with assembly parts

for retrofitting to the mobile collection trays 20-9851E10 or 20-9850E30.

20-9850E40

Vacuum extraction coupling

consisting of:

- Barrel adapter for installation in the 2" socket of the used goods barrel with 3m transparent PTFE hose with shut-off valve and vacuum limiter to protect the used goods barrel. Hose length can be individually adjusted by the customer
- Overfill indicator for installation in the ¾" socket of the used goods barrel
- A vacuum pump is also required

20-9850E50

Bitumen washing machine collection bottle

Includes:

- 5 L glass bottle, plastic-coated
- Connecting elements to the bitumen washing machine
- Ball valves for removing used goods
- small parts and tubing

A software update may also be required.

Technical specifications

Weight	2.00 kg

20-9853

Collecting bottle solvent rotary evaporator

For use in an enclosure and to return the solvent to the waste container or, as an option, to the analyzer via a hose line.

Contains:

- 5 L glass bottle, plastic-coated
- Special funnel
- Valves and hose line to the used goods container
- Accessories for solvent transfer to the fresh goods connection analyzer consisting of hose line with plug-in coupling and shut-off valve, see 20-9854E10.

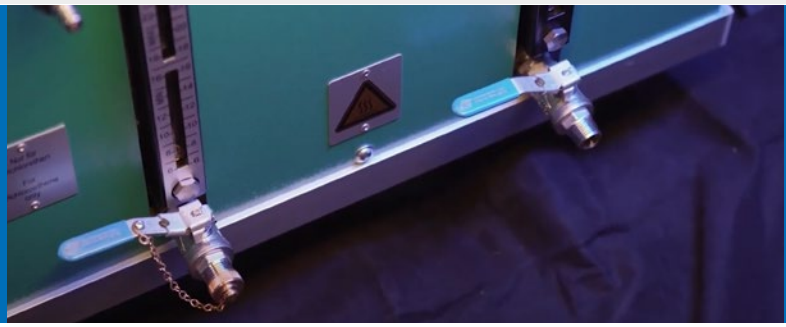
Technical specifications

Weight	2.70 kg

20-9854

ACCESSORIES

for PURE MODULAR SYSTEM



Filter-extraction centrifuge 1500/3000 g

EN 12697-1 - EN 13108 - ASTM D 2172 - AASHTO T 164 For extraction of asphalt mixture using filter paper and centrifuge. Determination of binder content using the difference method. Speed adjustable up to 3600 rpm. Drain pan and hood as well as filter paper must be ordered separately.

Technical data

Weight	50.00 kg
Electrical data	230V, 50/60Hz

20-12000

Filter-extraction centrifuge 1500 g - 60 Hz

ASTM D 2172 - AASHTO T 164 For the extraction of asphalt mixture using filter paper and centrifuge. Speed adjustable up to 3000 rpm.

Technical data

Weight	49.00 kg
Electrical data	230V, 60Hz

20-1200-60

Distillation Plant

For the recovery of non-flammable solvents from bitumen etc. The contaminated solvent is heated in the storage chamber. The volatile solvent is then cooled down again via a water-operated cooling coil and settles in the storage chamber. Hourly output approx. 10 l. Incl. overtemperature protection and level indicator.

		weight	Electrical data
20-1250	10 l/h	20 kg	230V, 50/60Hz, 1.2kW
20-1260	40 l/h	31 kg	230 V, 50/60 Hz, 3.5 kW

Evaporation flask NS 29/32

20-1300.1	1000ml
20-1300.7	2000ml
20-1300.10	3000ml

Piston clamp NS29

20-1300.11

Receiving flask KS35

20-1300.12	1000 ml with tap
20-1300.2	1000ml
20-1300.3	2000ml

Cork ring for evaporating flasks 1000 - 2000 ml

OD 140mm

Technical data

Weight	0.07 kg

20-1300.4

Wire clip 29/32 for evaporating flasks

Technical data

Weight	0.01 kg

20-1300.8

Metal clip with locking mechanism

For evaporating/receiving flasks.

Technical data

Weight	0.01 kg

20-1300.9