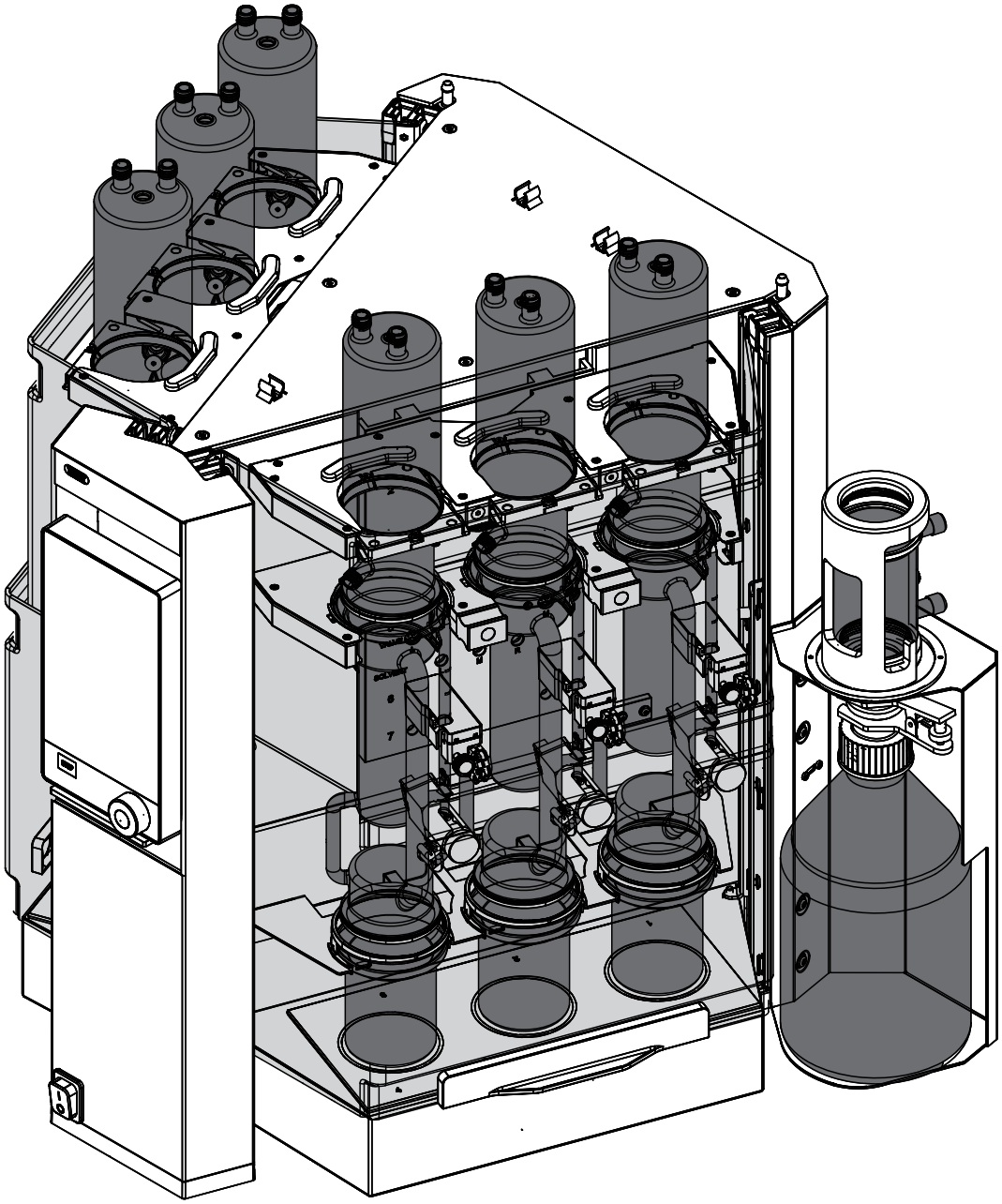
UniversalExtractor E-800
Technical data sheet

The UniversalExtractor E-800 meets the highest expectations in applicational flexibility and safety standards for all extraction types. Thanks to its high performance heating system and the inert materials, there are no limitation regarding solvents. Using the glass assembly with the universal chamber, up to five different extraction methods can be run within the same set-up. As an alternative, the ECE glass assembly is an economic solution. The LSV configuration is designed for large sample volumes, allowing the lowest analyte detection levels.



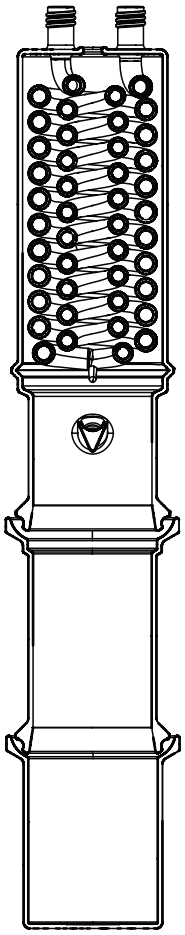
11594041B en UniversalExtractor E-800 02.2019

Description of function

The UniversalExtractor E-800 is designed to carry out the following solid-liquid extraction methods:

- Economic Continuous Extraction (without chamber heater). See Chapter "Economic Continuous Extraction (without chamber heater)"
- Soxhlet Extraction (with and without chamber heater). See Chapter "Soxhlet Extraction (with and without chamber heater)"
- Continuous Extraction (with and without chamber heater). See Continuous Extraction (with and without chamber heater)
- Hot Extraction (with chamber heater). See Chapter "Hot Extraction (with chamber heater)"
- Soxhlet warm Extraction (with chamber heater). See Chapter "Soxhlet Warm Extraction (with chamber heater)"
- Twisselmann Extraction (with chamber heater). See Chapter "Twisselmann Extraction (with chamber heater)"

Economic Continuous Extraction (without chamber heater)



Step 1 extraction

- The sample is located in the extraction chamber.
- The beaker contains the solvent.
- The solvent is heated, vapor rises up around the sample to the condenser, condenses and drops back into extraction chamber through the sample into the beaker.

Step 2 drying

- The solvent is heated, vapor rises up around the sample to the condenser, condenses and flows into tank.
- The analyte remains in the beaker.

Hot Extraction (with chamber heater)

Step 1 extraction

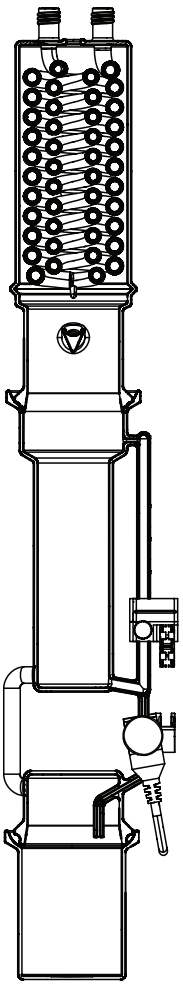
- The sample is located in the extraction chamber.
- The beaker contains the solvent.
- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is closed, the solvent is collected up to the level sensor.
- The analyte is extracted.
- The solvent is heated in the extraction chamber, vapor rises up to the condenser, condenses and drops back into the extraction chamber.

Step 2 rinsing

- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is open, the solvent flows back into beaker, the solvent is not collected.
- This flushes traces of analyte into the beaker.

Step 3 drying

- The solvent is heated, vapor rises up to the condenser, condenses and flows into tank.
- The analyte remains in the beaker.



Soxhlet Extraction (with and without chamber heater)

Step 1 extraction

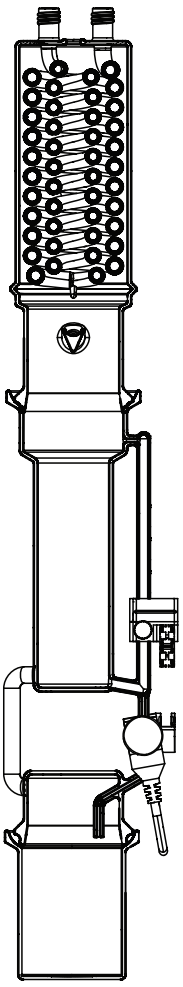
- The sample is located in the extraction chamber.
- The beaker contains the solvent.
- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is closed, the solvent is collected up to the level sensor and extracts the analyte.
- When the optical sensor is reached, the magnetic valve opens and the solvent containing the analyte flows back into the beaker.

Step 2 rinsing

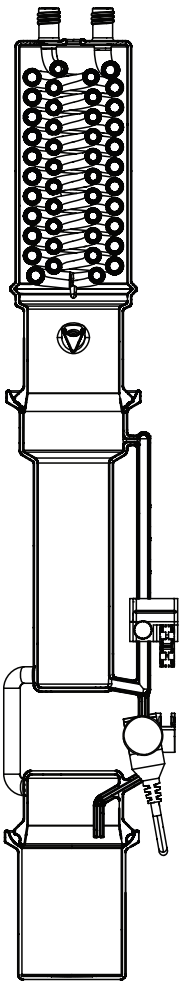
- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is open, the solvent flows back into beaker, the solvent is not collected.
- This flushes traces of fat into the beaker.

Step 3 drying

- The solvent is heated, vapor rises up to the condenser, condenses and flows into tank.
- The analyte remains in the beaker.



Soxhlet Warm Extraction (with chamber heater)



Step 1 extraction

- The sample is located in the extraction chamber.
- The beaker contains the solvent.
- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The solvent in the extraction chamber is heated.
- The magnetic valve is closed, the solvent is collected up to the level sensor and extracts the analyte.
- When the optical sensor is reached, the magnetic valve opens and the solvent containing the analyte flows back into the beaker.

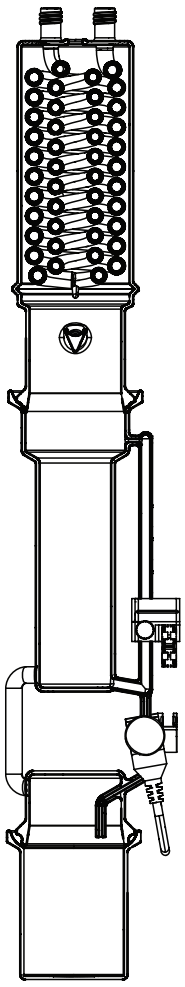
Step 2 rinsing

- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is open, the solvent flows back into beaker, the solvent is not collected.
- This flushes traces of analyte into the beaker.

Step 3 drying

- The solvent is heated, vapor rises up to the condenser, condenses and flows into tank.
- The analyte remains in the beaker.

Twisselmann Extraction (with chamber heater)



Step 1 extraction

- The sample is located in the extraction chamber.
- The beaker contains the solvent.
- The magnetic valve is closed, the solvent is collected in the extraction chamber. The solvent is heated, vapor rises up to the condenser, condenses, and drops back through the sample into the extraction chamber.

Step 2 rinsing

- The solvent is heated, vapor rises up to the condenser, condenses and drops into the extraction chamber with the sample.
- The magnetic valve is open, the solvent flows back into beaker, the solvent is not collected.
- This flushes traces of analyte into the beaker.

Step 2 drying

- The solvent is heated, vapor rises up around the sample to the condenser, condenses and flows into the tank bottle.
- The analyte remains in the beaker.

Order code UniversalExtractor E-800

Using the glass assembly with the universal chamber, up to five different extraction methods can be run within the same set-up. The LSV configuration is designed for large sample volumes, allowing the lowest analyte detection levels.

As an alternative, the ECE glass assembly is a economic solution.

The chamber heater allows for heating the solvent in the universal extraction chamber to increase the extraction efficiency. Needed for the extraction methods Soxhlet warm, Hot extraction and Twisselmann. It cannot be combined with the ECE extraction chamber. Options with inert gas are only delivered with chamber heater.

Choose the configuration according to your needs:

1	1	E	8	0	0			0	0	0

Glass assembly

U Universal chamber
L Universal chamber LSV
I Universal + inert gas
P Universal LSV + inert gas
M Mixed 3 Universal + 3 LSV
E Cont. Extraction ECE

Chamber heater

0 Without
1 Yes

Order code UniversalExtractor E-800 System

The UniversalExtractor E-800 can be bundled with Recirculating Chiller F-308/F-314 for environmental friendly and water saving cooling. The UniversalExtactor E-800 has to be operated either with a recirculating chiller or a tap water valve.

Choose the configuration according to your needs:

Glass assembly

U Universal chamber
L Universal chamber LSV
I Universal + inert gas
P Universal LSV + inert gas
M Mixed 3 Universal + 3 LSV
E Cont. Extraction ECE

Chamber heater

0 Without
1 Yes

Cooling

1 Tap water valve
2 Chiller F-308
3 Chiller F-314

Voltage

1 220-240 V
2 100-120 V

Scope of delivery

All configurations are supplied ready to use.

	Economic Continuous Extraction	Universal	Universal LSV
UniversalExtractor E-800	1	1	1
Condenser E-800	6	6	6
Extraction glass chamber Universal	-	6	-
Extraction glass chamber Universal LSV	-	-	6
Extraction chamber ECE	6	-	-
Soxhlet assembly cpl.	-	6	6
Extraction beaker	6	6	-
Extraction beaker LSV	-	-	6
Sealing PTFE	12	12	12
Set of holders for thimbles 25 mm	6	6	-
Set of holders for thimbles 33 mm	6	6	6
Set of holders for thimbles 43 mm	-	-	6
Set of glass sample tube holder	6	6	-
Set of glass sample tube holder LSV	-	-	6
Extraction thimbles 25 x 150 mm	6	6	-
Extraction thimbles 33 x 150 mm	6	6	6
Extraction thimbles 43 x 150 mm	-	-	6
Solvent tank cpl.	1	1	1
Cooling water hose 3 m	2	2	2
Beaker tong	1	1	1
Extraction beaker carrier	1	1	-
Extraction beaker carrier LSV	-	-	1
Pliers for glass sample tube with frit	1	1	1
Funnel	1	1	1
Power cord	1	1	1
Operation manual	1	1	1

Technical data

UniversalExtractor E-800

Power consumption	1780 W
Connection voltage	200 - 240 ± 10 % VAC
Fuse	10 A
Frequency	50 / 60 Hz
Overvoltage category	II
Pollution degree	2
Dimensions (W x D x H) (without glassware)	638 x 595 x 613 mm
Dimensions (W x D x H) (with glassware ECE)	638 x 595 x 752 mm
Dimensions (W x D x H) (with glassware Universal)	638 x 595 x 810 mm
Weight (without glassware)	44.8 kg
Weight (with glassware)	52.6 kg
Total heating power (rated)	1680 W
Total Heating power (maximum)	1680 W
Hose connection	6 / 9 mm
Allowed water pressure (nominal value)	6 bar
Allowed water pressure (maximum)	8 bar
Number of extraction positions	6
Solvent tank volume	2 L
Allowed inert gas pressure (maximum)	3 bar

Ambient conditions

For indoor use only.

Max. altitude above sea level	2000 m
Ambient temperature	5–40 °C
Maximum relative humidity	80% for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C
Storage temperature	max. 45 °C

Conversion kits

The UniversalExtractor E-800 can be converted into another configuration with an easy change of glass assembly.

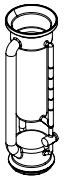
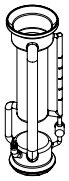
	Order no.
Conversion kit from Soxhlet / Universal to ECE Includes 6 Extraction glass chamber ECE (11062499), set of draining tubes for ECE (11067479)	11068488
Conversion kit ECE to Universal Includes 6 Universal glass chamber (11062501), set of draining tubes for Universal (11067477)	11068494
Conversion kit from ECE to Universal LSV Includes 6 Universal LSV glass chamber (11062502), set of draining tubes for Universal (11067477)	11068495

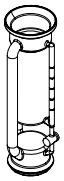
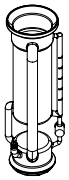
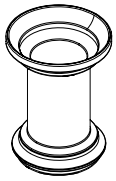
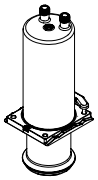
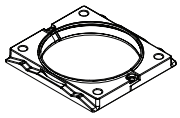
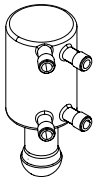
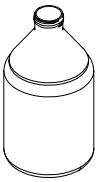
Chiller

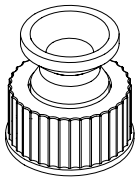
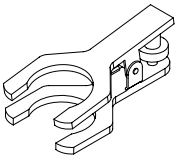
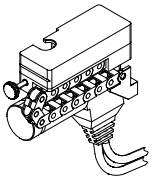
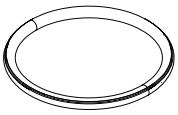
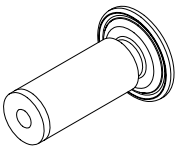
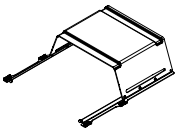
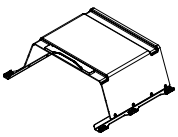
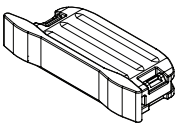
No. Units	Ambient Temperature	Chiller
1	< 30 °C	Recirculating Chiller F-308
1	< 40 °C	Recirculating Chiller F-314

	Order no.
Recirculating Chiller F-308 900 W at 15 °C, Display, 230 V Cooling capacity 900 W at 15 °C, for temperatures from -10 to 25 °C	11F30801
Recirculating Chiller F-308 900 W at 15 °C, Display, 115 V Cooling capacity 900 W at 15 °C, for temperatures from -10 to 25 °C	11F30802
Recirculating Chiller F-314 1400 W at 15 °C, Display, 230 V Cooling capacity 1400 W at 15 °C, for temperatures from -10 to 25 °C	11F31401
Recirculating Chiller F-314 1400 W at 15 °C, Display, 115 V Cooling capacity 1400 W at 15 °C, for temperatures from -10 to 25 °C	11F31402

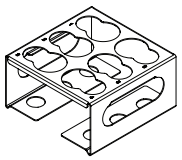
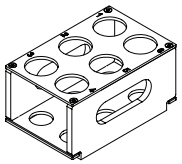
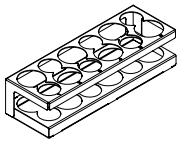
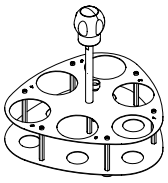
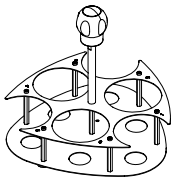
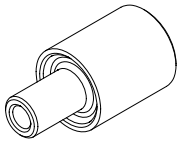
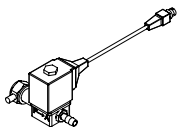
Spare parts

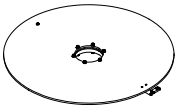
	Order no.	Image
Extraction glass chamber universal	11062501	
Extraction chamber universal inert	11064849	

	Order no.	Image
Extraction chamber universal LSV	11062502	
Extraction chamber universal LSV inert	11064850	
Extraction glass chamber ECE	11062498	
Set of beakers, 2 pcs.	11067474	
Set of beakers LSV, 2 pcs.	11067714	
Condenser E-800 cpl.	11067064	
Condenser flange E-800	11067818	
Condenser tank bottle	11065966	
Tank bottle 2 L	11065983	

	Order no.	Image
Tank adapter	11064590	
Ball joint clamp. For BJ35/20 To fasten receiving flask on condenser/secondary condenser.	003275	
Soxhlet assembly cpl. One part constiting of magnetic valve and level sensor for extraction glass chamber Soxhlet	11067065	
Set of seals E-800, PTFE, 2 pcs.	11067483	
Membrane with anchor for magnetic valve unit	037534	
Protection shield top, cpl.	11067832	
Protection shield bottom, cpl.	11067831	
Set of gliding elements including magnets, 10 pcs.	11067827	
Reflectorfoil analyte protection, 6 pcs.	11068522	
Silicone hose D6/9 L=3 m	048355	
Set of draining tube, FEP, Universal configuration, 6 pcs.	11067477	
Set of draining tubes ECE, FEP	11067479	

Accessories

	Order no.	Image
Holder for glass sample tubes, stainless steel	11067219	
Holder for glass sample tubes, PTFE	11067220	
Holder for extraction thimbles (diameter 25 - 43 mm)	11068443	
Extraction beaker carrier Allows to carry 6 beakers (11067474)	11067042	
Extraction beaker LSV carrier Allows to carry 6 beakers LSV 11067714	11067715	
Set condenser insulations E-800, 6 pcs. The insulation of the condensers prevent condensing water and is recommended in high humidity environment	11069077	
Set insulation cooling water hoses The insulation of the water hoses prevent condensing water and is recommended in high humidity environment.	11069079	
Support solvent supply Allows to fix the tubes of solvent dispensers to the condensers for convenient solvent addition.	11068306	
Cooling water valve. 24VAC Valve opens cooling water feed during distillation. Meant to be used with a vacuum controller/interface.	031356	

	Order no.	Image
Turning disk Allows for turning the instrument for easier access.	11067985	

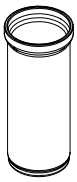
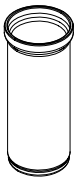
Consumables

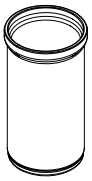
	Order no.
Quartz sand 0.3 - 0.9 mm, 2.5 kg	037689
Celite® 545, 1 kg	11068920
Boiling stones, PTFE	11068917

Holder for extraction thimbles

	Order no.
Holders for thimbles d25, PTFE, 3 pcs.	11067488
Holders for thimbles d33, PTFE, 3 pcs.	11067490
Holders for thimbles d43, PTFE, 3 pcs.	11067491
Holders for thimbles d25, stainless steel, 6 pcs.	11068484
Holders for thimbles d33, stainless steel, 6 pcs.	11068485
Holders for thimbles d43, stainless steel, 6 pcs.	11068486
Set of holders for glass sample tubes with frit, PTFE, 3 pcs.	11067485
Set of holders for LSV glass sample tubes, PTFE, 3 pcs.	11067486

Glass sample tubes and extraction thimbles

	Order no.	Image
Glass sample tubes with frit, long, 6 pcs. The glass sample tubes with 150 mm length fit perfectly into the Universal glass extraction chamber.	11067815	
Glass sample tubes with frit LSV, long, 6 pcs. The glass sample tubes with 150 mm length fit perfectly into the Universal LSV glass extraction chamber.	11067816	
Glass sample tubes with frit, 6 pcs.	11067497	

	Order no.	Image
Glass sample tubes LSV with frit, 6 pcs.	11067814	
Extraction thimbles 25 x 100 mm, 25 pcs.	018105	
Extraction thimbles 33 x 94 mm, 25 pcs.	11058983	
Extraction thimbles, Set. 25 pcs, 43 x 118 mm, cellulose For Soxhlet extraction unit.	018106	
Extraction thimbles 25 x 150 mm, 25 pcs. The extraction thimbles with 150 mm length fit perfectly into the Universal glass extraction chamber, they need the holder 1167488 (d 25 mm)	11067445	
Extraction thimbles 33 x 150 mm, 25 pcs. The extraction thimbles with 150 mm length fit perfectly into the Universal glass extraction chamber, they need the holder 1167490 (d33 mm)	11067446	
Extraction thimbles 43 x 150 mm, 25 pcs. The extraction thimbles with 150 mm length fit perfectly into the Universal glass extraction chamber, they need the holder 1167491 (d 43 mm)	11067447