











EasySampler 1210



EasySampler™

Unattended, Representative Sampling

METTLER TOLEDO

	General Introduction	3
	Tools to Speed Chemical Development	4 – 5
	EasySampler 1210 System	6 – 10
	EasySampler Consumables	10
	EasySampler Probes	11 – 13
	EasySampler Accessories	13
	EasySampler Probe Adapters and Accessories	14 – 15
	EasySampler Connectivity Kit	15

Glossary of Terms Used

PBT = Polybutylene terephthalate
PP = Polypropylene

PTFE = Polytetrafluoroethylene
VQM = Silicone rubber

Unattended, Representative Sampling For a Wide Range of Chemical Reactions

Sampling chemical reactions for offline analysis to determine reaction progress or impurity profiles is standard practice. However, the manual process is challenging when sampling air-sensitive reactions, reactions at elevated pressure, or from heterogeneous mixtures. Poor sampling reproducibility and delays in quenching can lead to variable results and inaccuracies in the analytical information gained.

EasySampler was designed to eliminate these challenges, by providing an automated and robust inline method of taking representative samples from reactions.



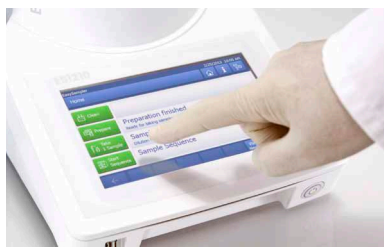
Difficult Reactions to Sample

It is labor intensive or impossible to sample reactions that are air or moisture sensitive, at elevated pressure or sub-ambient temperature, or highly toxic. EasySampler's unique probe enables sample capture and immediate quench so samples are representative of the reaction at the time of sampling.



Representative and Reproducible

Sampling reactions with precision is challenging, especially for heterogeneous or multiphase reactions. EasySampler samples from the same position in the reactor, into a pocket of fixed volume. Solids begin dissolving immediately in the quench step for accurate and reproducible analytical data.



Automated and Unattended

Sampling long reactions or a series of DOE experiments can be impractical. The lack of samples leads to blind spots in data, thus requiring repeat experiments. EasySampler can be programmed with a sequence for continued sampling operations 24 hours a day.



HPLC Ready Samples

After quenching, the liquid handling system dilutes the sample to a user-specified concentration and transfers it to a vial, ready for offline analysis. Quench and dilution steps can function as sample derivatization steps, thus decreasing sample preparation time and eliminating human error.

Tools to Speed Chemical Development

Automated Synthesis with HPLC Sampling

"The productivity gain through EasySampler changes the way chemists work in the laboratory. They often do prepare and start the reaction in the afternoon to collect samples the next morning. This gives them more time for experiment design and evaluation."
– Principal Scientist, Janssen Pharmaceutica

Shorten Chemical Development Time

Automated reactors help scientists control reaction parameters while running experiments 24 hours a day. Scientists explore more experimental conditions with unattended parameter control. Non-viable conditions can be screened early so reactions can be optimized in less time.

Impurity Profiling from Difficult Reactions to Sample

EasySampler provides continuous and representative samples over the timeframe of the entire reaction. Consistent, high-quality offline analytical data, from HPLC, GC or NMR, throughout the full reaction make it easy and safe to study kinetics and develop impurity profiles, even from heterogeneous mixtures, air- and moisture-sensitive reactions, and under pressurized and toxic conditions.



Simple recipe programming including sampling tasks in iControl software. Sampling events are annotated on the trend graph.

Make Good Decisions Sooner

iControl™ software is an intuitive control and analysis platform for EasyMax™, OptiMax™, RX-10™, and EasySampler. The single software platform provides comprehensive understanding so scientists can quickly understand, innovate, and make informed decisions.



Sample Transfer to HPLC Devices

The EasySampler 12 x 10 mL SBS-format vial plate provides simple and fast transfer of the prepared samples to offline analytical HPLC and UPLC devices that accept SBS-format vial racks.

Capture, Prepare, and Share Data

iC Data Center™ automatically captures instrument data, prepares it for analysis, and emails it to colleagues while recording it in a central storage location. Chemists share information and gain a pathway for compliant data management.

EasySampler Connectivity Kit

The EasySampler Connectivity Kit integrates EasySampler with EasyMax™ Advanced, OptiMax™, and RX-10™. Sampling information is automatically combined and reported with the reactor experiment conditions via the touchscreen or iControl™ software.



EasySampler 1210 System



30083901 EasySampler 1210 System Complete

EasySampler 1210 System Complete is a package including the necessary ancillary items and accessories. EasySampler 1210 is equipped with a sample rack accommodating up to 12 vials, of 10 mL each.

The sampling probe is not included in the EasySampler 1210 System Complete package. Refer to pages 11 and 12 for EasySampler probe information.

30083901 EasySampler 1210 System Complete consisting of

Order Number	Product Description	Quantity	Page
30247690	EasySampler 1210 System	1	7
30040993 *	EasySampler 10 mL rack, PP	1	7
30244745 *	10 mL vial including screw cap, 100 pcs in a set	1	7, 10
30041011 *	Needle, stainless steel	1	8
30097344	Needle protection shield	1	8
30083885 *	Knurled screw, M4 x 6 mm	1	8
30072069 *	Waste bottle 500 mL, GL55, glass	1	8
30094594	Screw cap for 500 mL waste bottle, GL55, PP	2	8
30306192 *	Septum for GL55, Silicone/PTFE	6	8
51191591	Bottle 250 mL with cap, GL45, glass, PP	3	8
51191972	Distributor cap GL45, 2 x GL14, PP	3	8
51190318	Screw cap GL14 without aperture, PBT	3	9
51190317	Screw cap GL14 with aperture h.17 mm, PBT	3	9
51191170	Silicone rubber seal (septum) for screw cap GL14	3	9
30107048	3-way valve, ceramic	1	9
30061425	Drip pan, PP	1	9
30099772	Test tube 12 x 100 mm	1	9
30213880	Sleeve mounting and removal tool (SMART)	1	9
51191728	Duopen	1	9
30246341 *	PTFE tube set to solvents 1210, PEEK fittings (one set installed and one supplied as spare)	2	10
30246340 *	PTFE tube set for EasySampler 1210, PEEK fittings (one set installed and one supplied as spare)	2	10
30091776	User Manual EasySampler, A4	1	10

* Recommended accessories and consumables



30247690	EasySampler 1210 System
Material	Housing: Polypropylene PP 30% Talcum Tubing: PTFE Needle: Stainless steel Valve: Ceramic Pump: Ceramic, PTFE
Power Connection	100 – 240 V 50 Hz/60 Hz
User Interface	METTLER TOLEDO touchscreen
Size	310 mm, 12.2" x 465 mm, 18.31" x 500 mm, 19.68" (w x h x d)
Weight	9 kg, 20 lbs
Quantity	1



30040993	EasySampler 10 mL rack 12 vial positions
Material	PP
Size	Ø 180 mm, height 50 mm
Quantity	1



30244745	10 mL vial including screw cap
Material	Borosilicate glass, metal cap, Butyl/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	100 pcs in a set



30041011	Needle
Material	Stainless steel
Size	Length 132 mm
Quantity	1



30097344	Needle protection shield
Material	Stainless steel
Size	60 mm x 152 mm x 90 mm (w x h x d)
Quantity	1



30083885	Knurled screw, M4 x 6 mm
Size	M4 x 6 mm
Quantity	1



30072069	Waste bottle 500 mL, GL55
Material	Borosilicate glass
Size	Outer Ø 80 mm, height 160 mm
Quantity	1



30094594	Screw cap for 500 mL waste bottle, GL55
Material	PP
Thread	GL55
Quantity	1



30306192	Septum for GL55
Material	Silicone/PTFE
Size	Ø 54 mm, thickness 1.5 mm
Quantity	1



51191591	Bottle 250 mL with cap, GL45
Material	Borosilicate glass, PP
Quantity	1



51191972	Distributor cap, GL45 2 x GL14
Material	PP
Quantity	1

**51190318** | Screw cap GL14, without aperture

Material	PBT
Temperature	Max. 200 °C
Quantity	1

**51190317** | Screw cap GL14, with aperture

Material	PBT
Temperature	Max. 200 °C
Aperture	Ø 9.5 mm
Quantity	1

**51191170** | Silicone rubber seal (septum)
for screw cap GL14

Material	Silicone rubber VQM
Size	Ø 12 mm, thickness 2 mm
Quantity	1

**30107048** | 3-way valve

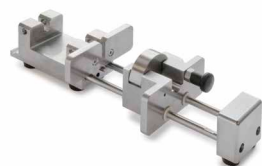
Material	Ceramic
Size	43 mm x 35 mm
Quantity	1

**30061425** | Drip pan

Material	PP
Size	140 mm x 10 mm x 100 mm (w x h x d)
Quantity	1

**30099772** | Test tube 12 x 100 mm

Material	Borosilicate glass
Size	Outer Ø 12 mm, length 100 mm
Quantity	1

**30213880** | Sleeve mounting and removal tool (SMART)
including Torx key T10

Material	Stainless steel
Quantity	1

**51191728** | Duopen for touch screen operation

Size	Length 140 mm
Quantity	1



30246341	PTFE tube set to solvents 1210, PEEK fittings
Material	PTFE tube, PEEK fittings
Size	Inner Ø 0.8 mm, length 550 mm
Quantity	3 pcs in a set

Polycarbonate Fittings Option

30098231	PTFE tube set to solvents 1210
Material	PTFE tube, polycarbonate fittings
Size	Inner Ø 0.8 mm, length 550 mm
Quantity	3 pcs in a set



30246340	PTFE tube set for EasySampler 1210, PEEK fittings
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

Polycarbonate Fittings Option

30098230	PTFE tube set for EasySampler 1210
Material	PTFE tube, polycarbonate fittings
Quantity	4 pcs in a set



30091776	User Manual EasySampler
Size	A4
Quantity	1

EasySampler Consumables

10 mL Vial Sets



30244745	10 mL vial including screw cap
Material	Borosilicate glass, metal cap, Butyl/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	100 pcs in a set



30111624	10 mL vial including screw cap
Material	Borosilicate glass, metal cap, Butyl/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	1000 pcs in a set

EasySampler Probes



30306037

EasySampler Probe 450 Set

EasySampler Probe 450 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 450 is 453 mm in length, for use with RC1 and other reactors up to 6 liters.

30306037 EasySampler Probe 450 Set consisting of

Order Number	Product Description	Quantity	Page
30279540	Sampling probe type 450, including PTFE sleeve	1	12
30100528 *	Sleeve complete, PTFE, Alloy C-22	4	13
14104090	Adapter 19/22, PTFE, 9.5 mm	1	13
14104089	Adapter 14/20, PTFE, 9.5 mm	1	13
30306036 *	Tube set probe 450, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	13

* Recommended accessories and consumables



30306933

EasySampler Probe 330 Set

EasySampler Probe 330 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 330 is 333 mm in length, for use with EasyMax 102 and 402, OptiMax, RC1, and other reactors up to 1 liter.

30306933 EasySampler Probe 330 Set consisting of

Order Number	Product Description	Quantity	Page
30306934	Sampling probe type 330, including PTFE sleeve	1	12
30100528 *	Sleeve complete, PTFE, Alloy C-22	4	13
14104090	Adapter 19/22, PTFE, 9.5 mm	1	13
14104089	Adapter 14/20, PTFE, 9.5 mm	1	13
30246342 *	Tube set probe 330, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	13

* Recommended accessories and consumables

**30246344****EasySampler Probe 210 Set**

EasySampler Probe 210 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 210 is 213 mm in length, for use with EasyMax 102 and 402 using reactors from 10 mL up to 400 mL.

30246344 EasySampler Probe 210 Set consisting of

Order Number	Product Description	Quantity	Page
30043400	Sampling probe type 210, including PTFE sleeve	1	12
30100528 *	Sleeve complete, PTFE, Alloy C-22	4	13
14104090	Adapter 19/22, PTFE, 9.5 mm	1	13
14104089	Adapter 14/20, PTFE, 9.5 mm	1	13
30247094 *	Tube set probe 210, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	13

* Recommended accessories and consumables



	30279540 Sampling probe type 450, including PTFE sleeve	30306934 Sampling probe type 330, including PTFE sleeve	30043400 Sampling probe type 210, including PTFE sleeve
Probe Size	Ø 9.5 mm, 0.38", 453 mm, 17.83"	Ø 9.5 mm, 0.38", 333 mm, 13.11"	Ø 9.5 mm, 0.38", 213 mm, 8.38"
Weight	0.88 kg, 1.94 lbs	0.84 kg, 1.85 lbs	0.8 kg, 1.76 lbs
Quantity	1	1	1
Material	Wetted parts: Alloy C-22, PTFE Non-wetted parts: Anodized aluminum, stainless steel		
Pocket	20 µL ± 10%		
Temperature Range	-20 °C to 140 °C (for reactions at atmospheric pressure), up to 100 samples per sleeve		
Pressure Range and Conditions	1.013 bar to 10 bar, 14.7 psi to 145 psi Temperature range: 20 °C to 100 °C Maximum reactor volume: 2.5 L 1 sleeve per reaction (maximum 24 samples per reaction)		
pH	1 to 14		
Minimum Sampling Interval	2 min 52 sec		



30100528	Sleeve complete
Material	PTFE, Alloy C-22
Temperature Range	–20 °C to 140 °C (at atmospheric pressure)
Size	Outer Ø 9.525 mm, length 43 mm
Quantity	1



30306036	Tube set probe 450, PEEK fittings
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

30246342	Tube set probe 330, PEEK fittings
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

30247094	Tube set probe 210, PEEK fittings
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

Polycarbonate Fittings Option

30213881	Tube set probe 330
Material	PTFE tube, polycarbonate fittings
Quantity	4 pcs in a set



14104090	Adapter 19/22 PTFE 9.5 mm
Material	PTFE
Size	Inner Ø 9.525 mm, ST19/22
Quantity	1



14104089	Adapter 14/20 PTFE 9.5 mm
Material	PTFE
Size	Inner Ø 9.525 mm, ST14/20
Quantity	1

EasySampler Accessories



30312353	EasySampler 12 x 10 mL vial plate SBS-format, to hold 12 x 10 mL vials
Material	PP
Size	128 mm x 86 mm x 20 mm
Quantity	1

Adapters

For EasySampler Probes



14104089 Adapter 14/20 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST14/20
Quantity	1



14104090 Adapter 19/22 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST19/22
Quantity	1



14202569 Adapter 24/40 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST24/40
Quantity	1



14104091 Adapter 29/26 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST29/26
Quantity	1



14474704 HP reactor fiber probe adapter kit
for 3/8" 9.525 mm probe, includes extension
tube 14474701 and adapter 14474404

Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1



14474700 HP reactor port extension tube
allows connection of a 1/4" or 3/8" high
pressure adapter

Material	Stainless steel
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1



14474404 HP reactor fiber probe adapter
for 3/8" 9.525 mm probe

Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1

14474701 HP reactor port extension tube
allows connection of a 1/4" or 3/8" high
pressure adapter

Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1

EasySampler Probe 330

Accessories for Original Style Probe 30244744

**30103230****Conduit installation tool**

Quantity

1

**51195306****Cylinder-head screw (nose clamp), Torx**

Material

Stainless steel

Size

M3 x 6 mm

Quantity

1

**51195307****Flat-head screw (tube interface), Torx**

Material

Stainless steel

Size

M3 x 8 mm

Quantity

1

EasySampler Connectivity Kit

For EasyMax Advanced, OptiMax, and RX-10

**30110344**

EasySampler Connectivity Kit

The EasySampler Connectivity Kit integrates EasySampler with EasyMax Advanced, OptiMax, and RX-10. Sampling information is automatically combined and reported with the reactor experiment conditions via the touchscreen or iControl software.

EasySampler Connectivity Kit consisting of

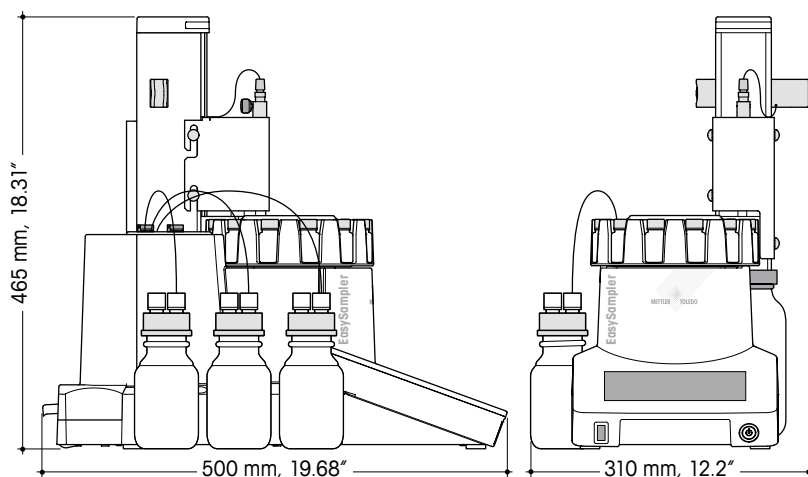
Order Number	Product Description	Quantity
	USB dongle, mini format	1
	USB stick	1
51191988	CAN cable, 100 cm	1
30092606	EasySampler Connectivity Kit Quick Start Guide	1

EasySampler™

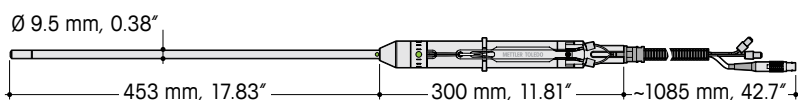
Unattended, Representative Sampling

Technical Data

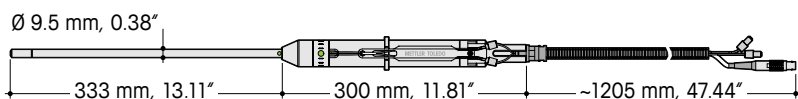
EasySampler 1210 System



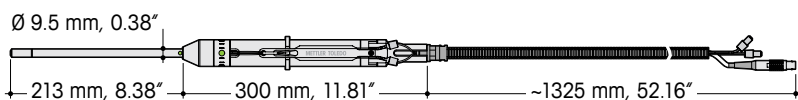
EasySampler Probe 450 – for RC1 and other reactors up to 6 L



EasySampler Probe 330 – for EasyMax 102 and 402, OptiMax, RC1, and other reactors up to 1 L



EasySampler Probe 210 – for EasyMax 102 and 402 using reactors from 10 mL up to 400 mL



www.mt.com/EasySampler

For more information

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Subject to technical changes
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Printed in Switzerland, 30248034B



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