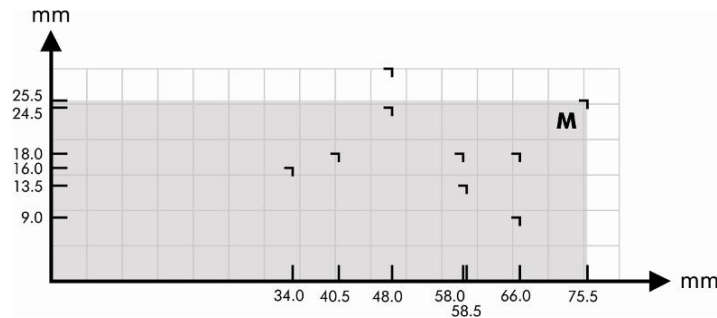


2.1 Microscopy-Slide Platform – Adapted to 384 Titerplate

The platforms can be delivered as an unstructured device in the microscopy-slide format (25.5 mm x 75.5 mm x 1.5 mm) without cover lid or with a microstructure and cover lid. These chips are covered with a thin polymer foil of the same material as the micro structured part.

The tooling cost will be added to the chip prizes, such as for individually configured microstructures, integrated electrodes, etc. This cost depends on the complexity of the microfluidic design and is available upon request.

Note: The dimensions of the platforms may differ in the range of 0.5% depending on the material.



2.1.1 Microscopy-slide platform with 28 interfaces

For your design you may use the slide format with through holes with a diameter of 1 mm.

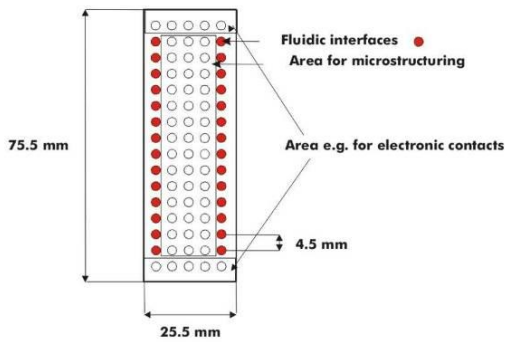


Fig. 31: Platform design principle

Fig. 32: Mixer array as example for the fluidic platform

Product Number	Chip Format	Material	Comment
06-0250-0000-01	M	PMMA	excl. tooling costs
06-0251-0000-02	M	Topas	
06-0252-0000-03	M	PC	
06-0253-0000-04	M	Zeonex	

2.1.2 Microscopy-slide platform with 28 integrated olives

For the chip-to-world or the chip-to-chip-interfacing we offer, e.g., platforms with integrated tube fittings. They allow for two or up to 28 fluidic interfaces, or olives. The spacing between the fittings corresponds with the well spacing of a 384-well titerplate.

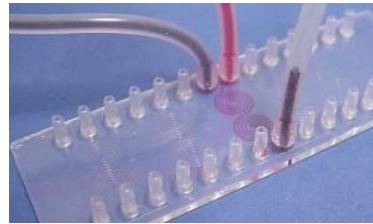
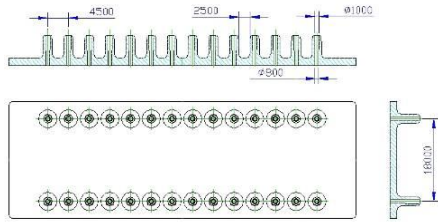


Fig. 33: Fluidic platform in slide format with 28 integrated olives

Fig. 34: Use of the 28-olive platform for a mixer array

Product Number	Chip Format	Material	Comment
06-0350-0000-04	M	Zeonex	unstructured, without cover lid, excl. tooling costs
06-0352-0000-05	M	Zeonor	
06-0351-0000-03	M	PC	
06-0353-0000-04	M	Zeonex	micro structured, with cover lid, excl. tooling costs

2.1.3 Microscopy-slide platform with 2 integrated olives

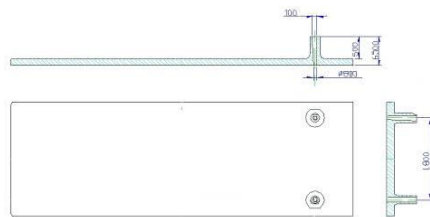


Fig. 35: Fluidic platform in slide format with 2 integrated olives

Fig. 36: Use of the 2-olive platform for a continuous-flow PCR chip

Product Number	Chip Format	Material	Comment
06-0400-0000-03	M	PC	unstructured, without cover lid, excl. tooling costs
06-0401-0000-10.10	M	MBS	
06-0402-0000-02.1	M	Topas	
06-0403-0000-04	M	Zeonex	
06-0404-0000-05	M	Zeonor	
06-0410-0000-03	M	PC	micro structured, with cover lid, excl. tooling costs

2.2 Extended Size Platform – Adapted to Capillary Electrophoresis Chips

This platform is for those who require chips in a long and narrow format (95 mm x 16 mm) with channel structures that differ from either our standard chips with electrodes (see pages 9 and 10) or our *ChipGenie® edition E* capillary electrophoresis chips (see page 29).

The chips are available with a simple fluidic interface (through holes) or with directly molded reservoirs and as either unstructured devices without cover lid or as microstructured devices with cover lid, that is, a thin polymer foil of the same material as the microstructured part.

The tooling costs will be added to the chip prizes, such as for the individually configured microstructures as well as any electrodes applied to the platform chip (for direct measurements) or to the lid (for contact-less conductivity measurements). Actual costs will depend on the complexity of both the microfluidic and the electrode designs.

Note: The dimensions of the platforms may vary by up to 0.5% depending on the material.

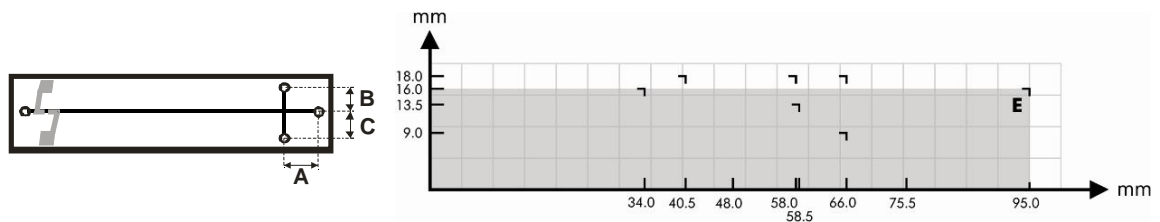


Fig. 37: Chip layout

2.2.1 Extended size platform with fluidic interfaces

The interfaces are through holes with a diameter of 1 mm.

Product Number	Chip Format	Comment	Material
06-0430-0000-01	E	unstructured, without cover lid, excl. tooling costs	PMMA
06-0431-0000-01	E	microstructured, with cover lid, excl. tooling costs	PMMA

2.2.2 Extended size platform with 4 reservoirs

The reservoirs (3 inlets, 1 outlet) have a standard filling volume of 70 μ l (maximum 90 μ l).

Product Number	Chip Format	Comment	Material
06-0435-0000-01	E	unstructured, without cover lid, excl. tooling costs	PMMA
06-0436-0000-01	E	microstructured, with cover lid, excl. tooling costs	PMMA

3.1 Slide Format Silicone & Silicone-Hybrid Devices

Microfluidic silicone devices with custom-made or standard fluidic design can be realized in the slide format or any other format that is desired. Silicone slides are supposed to be bonded to glass microscopy slides that are then functionalized and bonded at site of use.

The hybrid microfluidic platforms combine microstructured silicone with a hard plastic backbone with integrated fluidic interfaces. An example of such a device is shown in Fig. 38.

Note: All fluidic designs shown in the catalog can be realized in PDMS as well.

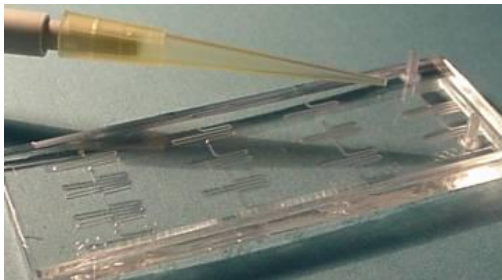


Fig. 38: Silicone microfluidic chip bonded to a hard plastic platform with integrated fluidic interfaces

Product Number	Chip Format	Material	Comment
07-0450-0000-06	M	PDMS	excl. tooling costs
07-0451-0000-07	M	Topas/PDMS	

4.1 Continuous Flow Chip-PCR – ChipGenie® edition T

microfluidic ChipShop and Clemens GmbH offer an innovative system for PCR on the chip. Different from conventional PCR with heating-up and cooling-down cycles, in this Chip-PCR system the complete reaction vessel is temperature controlled: The PCR solution flows through separated temperature zones, it winds itself through the temperature profile. The time-determining step in PCR – the carrying out of the repeated heating and cooling cycles – is not longer necessary since the temperature in the heating zones remains constant and only the liquid undergoes the temperature cycling.

The PCR system comprises the PCR-chip and the thermocycler (or better: thermal control unit, as no cycling in its conventional sense is involved) that has been specially developed for Lab-on-a-Chip applications. A pump moves the PCR solution through the chips. In comparison to conventional systems, this Lab-on-a-Chip PCR-system allows for a significant reduction of the PCR-reaction time: Without much optimization, a 15-cycle PCR can be completed in less than 5 minutes.

In order to allow you an easy use of the PCR system we offer **Chip-PCR Support Kits** (that include tubes and mineral oil for pumping the PCR solution) as well as **pumps** for driving of the fluids.

Product Number	Chip Format	Lid thickn. [µm]	Material	Comment			Unit	
				Channel depth	length	width		
08-0470-0047-03	M	250	PC	15 cycles (1 inlet, 1 outlet)	100 µm	810 mm	500 µm	chip
08-0471-0065-03	M	250	PC	36 cycles (2 inlets, 3 outlets)	100 µm	1,257 mm	220 µm	chip
08-0472-0061-03	M	250	PC	41 cycles (1 inlet, 1 outlet)	100 µm	1,879 mm	200 µm	chip
08-0485-0000-00				ChipGenie edition T instrument			instrument	
11-0850-0000-00				ChipGenie edition T support kit			kit	
				<ul style="list-style-type: none"> - Silicone tube (ID: 0.5 mm, 1 m) - PE tube (ID: 0.5 mm, 2 m) - mineral oil (3 ml) - mcs foil 007 – Adhesive Al-Tape (3 sheets) 				

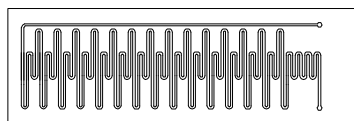


Fig. 39: 15-cycle continuous-flow PCR-chip (08-0470-0047-03)

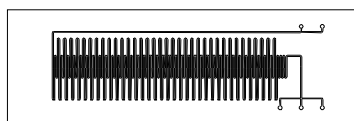


Fig. 40: 36-cycle continuous-flow PCR chip (08-0471-0065-03)



Fig. 41: 41-cycle continuous-flow PCR-chip (08-0472-0061-03)



Fig. 42: 15-cycle continuous-flow PCR chip



Fig. 43: The thermal control unit with two triplets of individually controllable temperature zones.



Fig. 44: Chip-PCR support kit

4.2 Capillary Electrophoresis – ChipGenie® edition E

Our latest addition to the catalogue: After extensive evaluation, the first capillary electrophoresis units are becoming available. Together with chips made with various electrode materials, a system is available that allows optics- and label-free measurements of conductivity to be performed a) at high speeds that covers b) a larger analyte range and c) at greatly reduced costs compared to HPLC, etc.



Fig. 45: CE chip layout

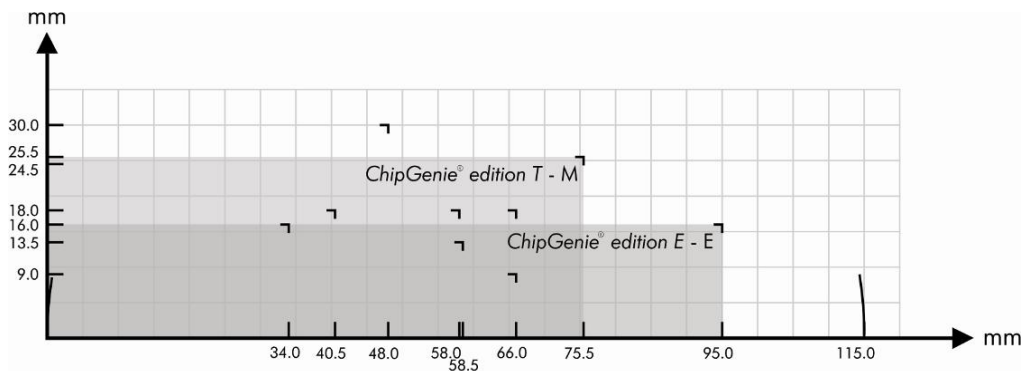
Fig. 46: ChipGenie® edition E chips

Product Number	Chip Format	Channel [µm]			Geometry				Lid thick. [µm]	Material
		Wid.	Dep.	Len.	A [mm]	B [mm]	C [mm]	D [mm]		
03-0110-0082-01	E	50	50	87	6.0	5.0	5.0		60	PMMA
03-0111-0082-01	E	50	50	87	6.0	5.0	5.0	0.1	60	PMMA



Fig. 47: ChipGenie® edition E capillary electrophoresis unit

Product Number	Description
08-0486-0000-00	ChipGenie® edition E instrument



Pure materials that are not available as plate material or not available in the necessary quality are available in slide or wafer format: E.g., Topas or Zeonex, that are not available as raw materials, or PC, when additives of the plate materials do not allow, e.g., fluorescence detection.

Wafers, to be used, for instance, as substrates for hot embossing, come in several units in one package. If surface quality matters, each wafer is separately packaged.

The dimensions of the substrates may differ in the range of 0.5% depending on the material.

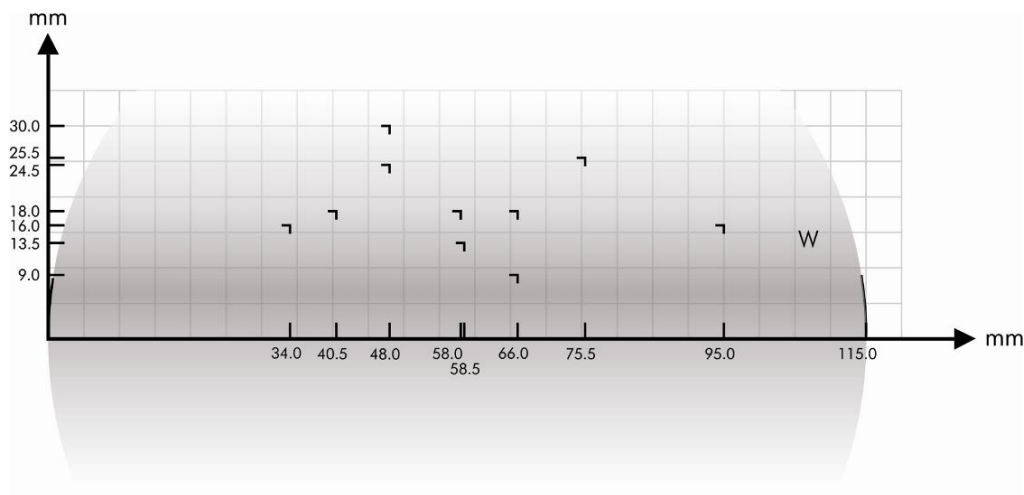
If you should be interested in other materials then listed or different dimensions (thickness, diameter, etc.) of the substrates, please ask for a quote.

6.1 Substrate: Wafer Format



Fig. 52: Wafer format

Product Number	Format	Material	Comment
10-0650-0000-02	W	Topas	thickness 1.5 mm
10-0651-0000-03	W	PC	
10-0652-0000-04	W	Zeonex	
10-0660-0000-05	W	Zeonor	
10-0653-0000-02	W	Topas	thickness 2.0 mm
10-0654-0000-03	W	PC	
10-0655-0000-04	W	Zeonex	
10-0661-0000-05	W	Zeonor	
10-0656-0000-02	W	Topas	thickness 1.5 mm, individually wrapped
10-0657-0000-03	W	PC	
10-0658-0000-04	W	Zeonex	
10-0659-0000-05	W	Zeonor	



6.2 Substrate: Microscopy Slide Format

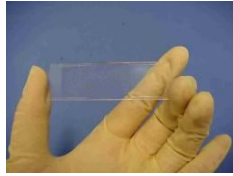
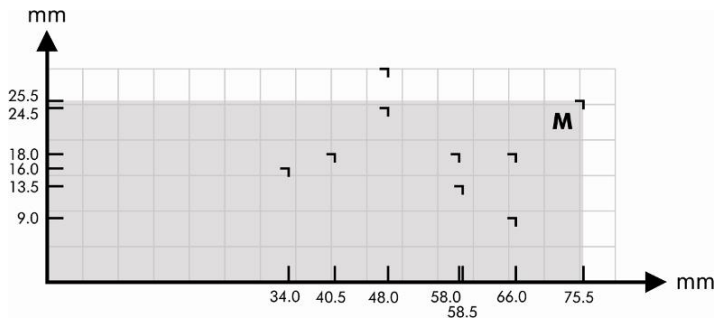


Fig. 53: Polymer substrate in microscopy slide format

Product Number	Format	Material	Comment
10-0671-0000-01	M	PMMA	thickness 1.0 mm, individually wrapped
10-0662-0000-02	M	Topas	
10-0663-0000-03	M	PC	
10-0664-0000-04	M	Zeonex	
10-0672-0000-05	M	Zeonor	
10-0673-0000-01	M	PMMA	thickness 1.5 mm, individually wrapped
10-0675-0000-02	M	Topas	
10-0666-0000-03	M	PC	
10-0667-0000-04	M	Zeonex	
10-0674-0000-05	M	Zeonor	
10-0668-0000-02	M	Topas	thickness 4.0 mm, individually wrapped
10-0669-0000-03	M	PC	
10-0670-0000-04	M	Zeonex	



7.1 Microfluidic Support Kits

The **Microfluidic Support Kits** comprise different components necessary to run microfluidic systems. This includes tubes to bring the fluid into the chip, silicone tubes to enable the interconnection between, e.g., a *microfluidic ChipShop* fluidic platform chip and tubing or between tubing and a syringe. Forceps can be used to stop a flow by clamping a silicone tube and syringes to fill chips manually.

These little kits allow you to directly start with your microfluidic experiments without losing time for searching suitable components.



Product Number	Comment
11-0800-0000-00	Microfluidic support kit 1 - Silicone tube (ID: 0.5 mm, 1 m) - PE tube (ID: 0.5 mm, 2 m) - forceps (3) - single use syringes (3) - syringe adapter (3)

Fig. 54: Microfluidic support kit

7.2 Chip-PCR Support Kits

Comparable to the **Microfluidic Support Kits** the **Chip-PCR Support Kits** enable you to directly start with your continuous flow PCR from the fluidic side. They include tubes and mineral oil to drive the PCR. Besides this and the PCR system consisting of chip and thermocycler just your biology is needed to start the PCR.

Product Number	Description
11-0850-0000-00	<i>ChipGenie edition T</i> support kit - Silicon tube (ID: 0.5 mm, 1 m) - PE tube (ID: 0.5 mm, 2 m) - mineral oil (3 ml) - mcs foil 007 – Adhesive AI-Tape (3 sheets)

7.3 Syringe Pumps – cetoni neMESYS Starter Unit with Valve

The cetoni neMESYS syringe pump is a high-end syringe pump for extreme precise dosing and pumping of fluids. The pump can be easily controlled by the user-friendly software with a comfortable user-interface.

Major benefits are that a) fluids can be pumped and sucked, b) the valve allows switching between sample taking and sample dosing, and c) the pump operates nearly pulsation free.

With these pumps, microfluidic set-ups can be realized where sample plugs of some few microliter or even less have to be pumped back and forth and need to always reach the same point in the microfluidic chip.



Fig. 55: cetoni neMESYS syringe pump, starter unit with valve.

Product Number	Comment
11-0900-0000-00	cetoni neMESYS syringe pump, starter unit, valve