

# Agilent's 1100 Series Pumping Systems

## Quick reference

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For detailed information refer to brochure 5968-9102E



	<b>Agilent 1100 Series isocratic pump</b>  <b>Product number: G1310A</b>	<b>Agilent 1100 Series preparative pump</b>  <b>Product number: G1361A</b> <b>Gradient extension: G1391A</b>	<b>Agilent 1100 Series binary pump</b>  <b>Product number: G1312A</b>	<b>Agilent 1100 Series capillary pump</b>  <b>Product number: G1388A</b>	<b>Agilent 1100 Series quaternary pump</b>  <b>Product number: G1354A</b>
<b>Application area</b>	The isocratic pump is a work-horse designed to meet the needs of QA/QC applications.	The preparative pump is an isocratic high performance pump with two parallel pistons, perfect for scale-up work, for typical preparative HPLC and for purity checks.	The binary gradient pump is based on a high-pressure mixing principle and is the pump of choice for reproducible gradients and highest performance especially at low flow rates.	A unique pump design offers better control and flexibility of flow rates. The pump is ideally suited for capillary LC applications, like biopharmaceutical research, where sample volumes are limited and higher sensitivity is essential.	The quaternary pump provides highest flexibility in solvent mixing and is recommended for a wide range of research and routine applications, and in the method development area.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Long instrument uptimes for low operating and maintenance costs.</li> <li>• A wide flow range of up to 10 ml/min for broad HPLC work, including semi-preparative separations.</li> <li>• Built-in early maintenance feedback—EMF, built-in self-test routines and task-oriented online help are valuable features for QA/QC operation.</li> <li>• Full programming capability such as intelligent method sequencing which includes built-in shutdown methods to help reduce solvent costs and prolong column lifetime.</li> </ul>	<ul style="list-style-type: none"> <li>• Flow rates up to 100 ml/min at 400 bar without the need to change pump heads.</li> <li>• Extremely low internal volumes in pump heads, valves, capillary connections and valves allow fast gradients over a wide flow range.</li> <li>• Two pumps combined to provide excellent and precise gradient formation.</li> <li>• Automated seal wash ensures highest seal lifetime.</li> <li>• Automated purge valve.</li> </ul>	<ul style="list-style-type: none"> <li>• Two dual-piston, in-series pumps in one housing for a minimum of bench space and lowest internal and external capillary connections.</li> <li>• Servo-controlled pistons of both individual pumps meet the highest chromatographic demands in gradient formation.</li> <li>• 180 to 480 µl internal volume (without mixer).</li> <li>• Highest composition stability.</li> <li>• Flow range starting at 50 µl/min using a degasser.</li> <li>• Ideally for standard-bore chromatography with a flow range of up to 5.0 ml/min, excellent high-pressure mixing capabilities and reliable solvent delivery.</li> </ul>	<ul style="list-style-type: none"> <li>• Real measurement and control of the flow rate assure flow rate stability throughout the analysis.</li> <li>• In capillary mode optimized flow rates from 1 µl/min up to 100 µl/min (in normal mode up to 2.5 ml/min) for highest flexibility.</li> <li>• Retention time (RT) stability independent from column back pressure for maximum performance.</li> <li>• Accurate flow rates, even with solvent mixtures.</li> <li>• An automatic purge valve and solvent selection valve.</li> <li>• Low delay volume through the use of microvolume components. The capillary pump includes the micro vacuum degasser for low detector baseline noise and long-term stability</li> </ul>	<ul style="list-style-type: none"> <li>• Convenient access to four solvents for isocratic or gradient analysis speeds up preparation of mobile phases, flushing the HPLC system and method development.</li> <li>• A wide flow range up to 10 ml/min and a delay volume of 800–1100 µl supports narrow-bore, standard and semi-preparative applications.</li> <li>• Easy programming and control through the handheld control module or through the ChemStation. The pump includes the vacuum degasser that offers: <ul style="list-style-type: none"> <li>• Low internal volume for fast changeover of mobile phases.</li> <li>• High degassing efficiency for trouble-free operation and highest performance.</li> <li>• Eliminates the need for helium.</li> <li>• Four-solvent selection for maximum versatility.</li> </ul> </li> </ul>
<b>Optional features</b>	Upgradeable to quaternary pump		An optional programmable solvent selection valve combines two out of four solvents for binary gradient formation or select a different solvent for flushing the column.	An extended flow range kit is available for flow rates from 10 to 100 µl/min.	