SOPHION BIOSCIENCE

Product Specification:

Qube 384 - Automated Patch Clamp System

Performance/features	Qube 384 MkII		
Hardware modules (standard)	Automatic cell preparation		
Hardware modules (optional - can be retrofitted)	Temperature control; heating/cooling at recording site		
	None	Stacker and autofill reservoir	Third party integration
Unattended operation	Up to 4 hours	Up to 10 hours	∞
Target throughput per month	<100,000	<400,000	>400,000
Success rate (incl. pharmacology and quality filtering), typical	>93%		
Consumable/compound handling	Pre-loaded on Qube workplane	In the stacker with two towers	Third-party instrumentation
Just-in-time dilution of stock solution	√		
Resuspension of compound	√		
Liquid handler tips	Disposable Washable onboard, water + optional solvent Automatic exchange at user-defined intervals		
Number of extracellular liquid additions	∞		
Liquid exchange rate	τ < 40 ms		
Number of different intracellular solutions	24		
Automatic exchange of intracellular solution	√ (optional)		
Stimulation mode	Voltage-gated, Ligand-gated, Current clamp (optional), Optical (optional)		
Unlimited combination of stimulation modes in same sweep	√		
V_{xx} adaptive protocol - Online estimation of individual activation and inactivation characteristics, used for stimulation and/or holding potential	√		
Shortest/longest voltage-segment	1 ms / 2h 47m		
Shortest exposure time in ligand-gated experiments	0.8s (other timings upon request)		
Resolution of current injection	0.6 pA		
Recording configuration	whole-cell / perforated patch		
Cell types applicable	Cell lines, Stem cells, Primary cells		
QChip compatibility	Single-hole, Multi-hole, Variable hole number, Variable hole size		
Maintenance of electrodes	None		
Electrode stability	Electrode drift < 0.01 mV/min		
User maintenance of instrument	None		
Giga Ohm seals	√		
R_{series} compensation (optional)	√ (up to 100%)		
C_{cell}, C_{slow} and leak compensation	√		
Data security and traceability	16 TB harddrives, Data reduction, data migration, Automatic backup, Full log of activity, User-hierarchy		

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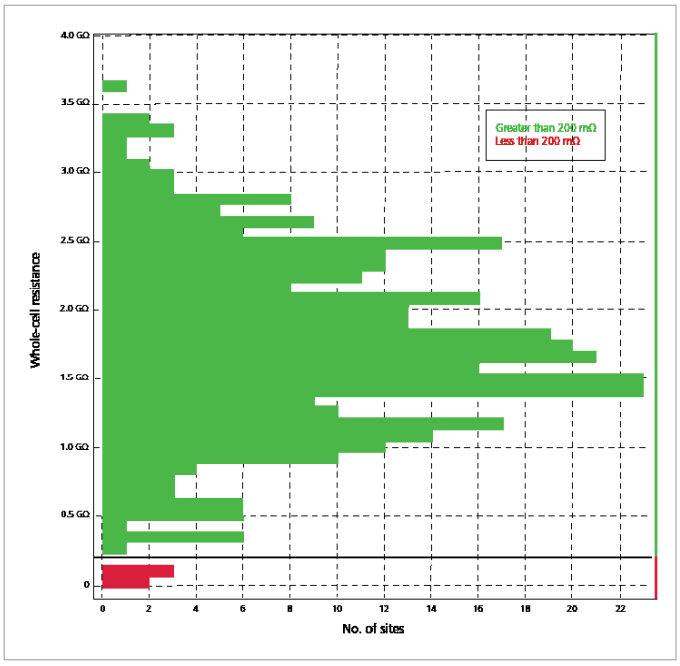
Dimensions	Qube 384 Basic	Qube 384 with stacker	Qube 384 integrated
Width	128 cm	195 cm	128 cm + external
Depth	85 cm	85 cm	85 cm + external
Height	187 - 206 cm (open)	187 - 206 cm (open)	187 - 206 cm (open)
Weight	600 kg	630 kg	600 kg + external
Point pressure	3.4 kg/cm²	3.6 kg/cm²	3.4 kg/cm² (Qube)
Requirements			
Power supply	100-240 V 50-60 Hz Max. 6A	100-240 V 50-60 Hz Max. 6A	100-240 V 50-60 Hz Max. 6A
Pressure	6 - 8 Bar	6 - 8 Bar	6 - 8 Bar
Vacuum	900 - 620 mBar	900 - 620 mBar	900 - 620 mBar
Network	100 BaseT (100 Mbit)*	100 BaseT (100 Mbit)*	100 BaseT (100 Mbit)*

*Qube uses gigabit switch internally which data transfer can benefit from



Distribution of single cell resistances across a QChip 384X. Cells were TE671 which endogenously express $Na_V1.7$. The Viewpoint software is equipped histograms that have dividers and a range of color grading to highlight the distribution. In this case the lower limit for seal quality has been set at 200 MΩ.