

PMG Sciences — Equipment & Capability Overview

Document purpose: A public planning reference for prospective projects. Figures are supplier-documented equipment specifications and configuration ratings. They are **not** measured plant output, a total-per-day promise, or a commitment for a particular project.

PMG Sciences is based in Las Vegas, Nevada and discusses lyophilization and contract manufacturing projects around the material, format, loading requirements, cycle needs, equipment configuration and schedule.

Core lyophilization platform

Stoppering vacuum freeze dryer — ZLFD-50G

Documented item	Specification
Lyophilization area	5.5 m² nominal drying area; 5.4 m² effective dimensional shelf area
Shelf arrangement	5 working shelves plus 1 temperature-compensating shelf
Shelf dimensions and spacing	1,200 × 900 mm; 90 mm shelf spacing
Tray liquid load	54 L at 10 mm material depth
Small-format vial loading	At least 21,000 vials for 2 mL nominal vials, Ø16 mm
Larger-format vial loading	At least 10,800 vials for 10 mL nominal vials, Ø22 mm
Condenser water capture	At least 100 kg
Condenser temperature	≤ −70 °C, no-load
Shelf temperature envelope	−50 to +70 °C, no-load conservative documented range
Shelf temperature uniformity	±1 °C at equilibrium
Vacuum	≤5 Pa ultimate vacuum, no-load; 10–130 Pa control range
Construction	AISI 304 stainless steel chamber and shelves
Cooling	Water cooled; approximately 15 m³/h stated cooling-water requirement
Controls	Siemens PLC/touch screen; automatic and manual control
Installed power	35 kW installed; this is not operating power consumption
Reference dimensions and weight	Approximately 3,800 × 1,600 × 2,500 mm; approximately 4,500 kg

Vial figures are alternative container-loading configurations. They do not state liquid fill volume, simultaneous loading, daily output, or a project turnaround commitment. Actual

suitability depends on material behavior, vial geometry, fill, cycle requirements and the agreed project plan.

Coordinated filling and closure equipment

Equipment	Documented configuration	Rating or detail	Project-planning qualification
Automatic filling and stoppering machine	1 Honsimba DHKZ012; 8-head peristaltic system	180–200 vials/min supplier rating; 5 kW; 220 V/50 Hz; approximately 700 kg	Bottle, stopper, fill volume and material compatibility are reviewed before configuration. Supplier filling-range and accuracy entries are inconsistent and are not used here.
Automatic high-speed capping machine	1 Honsimba; 8-head configuration	180–200 vials/min supplier rating; 5 kW; 220 V/50 Hz; approximately 500 kg	Bottle and cap compatibility are reviewed before acceptance. Filling and capping ratings are separate machine ratings and are not additive throughput.
Laminar flow hood	1 supporting hood for the filling configuration	H14 filter specification; 0.5 kW; single-motor noise stated as <65 dB	This is an equipment detail only. Ambiguous supplier airflow and dimensional entries are not included.
Buffer tank	1 material-holding tank; S31603 stainless steel	0.05 m ³ / 50 L gross vessel volume	Gross vessel volume is not a stated usable working volume. Working load is determined during technical review.

The 180–200 vials/min figures are supplier machine ratings for standardized packaging. They are not total production-per-day promises. Material behavior, drying cycle, packaging geometry, changeovers, review steps and scheduling affect a project-specific output and timing.

Supporting systems

Supporting system	Documented configuration
Refrigeration compressor	1 BITZER S6H-16.2Y two-stage compressor supporting shelf/condenser refrigeration
Cooling-water chiller	1 supplier-designated 15P chiller; thermal cooling output is not stated in the supplied information
Vacuum pump	1 two-stage rotary-vane pump with POSIFA vacuum instrumentation; pump flow rate is not stated
Thermal-fluid circulation	1 Grundfos circulation pump with low-viscosity silicone-oil heat-transfer fluid and a 15 kW heater
Control and monitoring	Siemens PLC/touch screen on the dryer, PT-100 temperature sensing, automated/manual controls
Refrigeration components	Danfoss valves and protection controls; ZOER oil/gas-liquid separation components; LR/REFCO pressure instrumentation

How PMG uses the information

A prospective project begins with a non-confidential material overview, target format, approximate batch size, project stage and timeline. PMG then reviews the documented configuration against the requested material, loading, cycle, filling and closure needs before defining any scope.

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Supplier images and source documents are not included in this public reference. This overview does not include supplier pricing, commercial quotations, personal contact details, or claims beyond the stated equipment specifications.