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# APPENDIX C

## FREEZE DRYER

### SPECIFICATIONS

This Appendix contains technical information about the Freeze Dryer including electrical specifications, environmental operating conditions and wiring diagrams.

#### Electrical Specifications

| Catalog # | Voltage |                 | Frequency | Phase | Amperage                |                       |
|-----------|---------|-----------------|-----------|-------|-------------------------|-----------------------|
|           | Nominal | Operating Range |           |       | Nominal w/o Vacuum Pump | Max. with Vacuum Pump |
| 7750020   | 115V    | 103-127         | 60        | 1     | 6                       | 14                    |
|           | 100V    | 90-110          | 50        | 1     | 6                       | 14                    |
| 7750021   | 115V    | 103-127         | 60        | 1     | 6                       | 14                    |
|           | 100V    | 90-110          | 50        | 1     | 6                       | 14                    |
| 7750030   | 230V    | 198-254         | 50        | 1     | 2.5                     | 7                     |
| 7750031   | 230V    | 198-254         | 50        | 1     | 2.5                     | 7                     |
| 7750040   | 230V    | 187-253         | 60        | 1     | 2.5                     | 7                     |
| 7750041   | 230V    | 187-253         | 60        | 1     | 2.5                     | 7                     |
| 7751020   | 115V    | 103-127         | 60        | 1     | 6                       | 14                    |
|           | 100V    | 90-110          | 50        | 1     | 6                       | 14                    |
| 7751021   | 115V    | 103-127         | 60        | 1     | 6                       | 14                    |
|           | 100V    | 90-110          | 50        | 1     | 6                       | 14                    |
| 7751030   | 230V    | 198-254         | 50        | 1     | 2.5                     | 7                     |
| 7751031   | 230V    | 198-254         | 50        | 1     | 2.5                     | 7                     |
| 7751040   | 230V    | 187-253         | 60        | 1     | 2.5                     | 7                     |
| 7751041   | 230V    | 187-253         | 60        | 1     | 2.5                     | 7                     |

## Environmental Conditions

- Indoor use only.
- Maximum altitude: 6562 feet (2000 meters).
- Ambient temperature range: 41° to 104°F (5° to 40°C).
- Maximum relative humidity: 80% for temperatures up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C).
- Main supply voltage fluctuations not to exceed  $\pm 10\%$  of the nominal voltage.
- Transient over voltages according to Installation Categories II (Over voltage Categories per IEC 1010). Temporary voltage spikes on the AC input line that may be as high as 1500V for 115V models and 2500V for 230V models are allowed.
- Used in an environment of Pollution degrees 2 (i.e., where normally only non-conductive atmospheres are present). Occasionally, however, a temporary conductivity caused by condensation must be expected, in accordance with IEC 664.