WAVE

Technical Description

Wave IC570MAX

Wave Trockensysteme GmbH
Stiegengasse 11
1060 Wien
Austria

+43 699 15852848
www.wave.cc
mike@wave.cc

WAVE IC570MAX

Table 1: **Performance Table – Summary**

# Notation	Description	Performance
1	**Vacuum chamber**	
1.1	Maximum extraction capacity	**15kg/h (infinite)**
1.2	Chamber volume	**1700 L**
1.3	Chamber dimensions	**1700 mm x 90 mm x 1300 mm**
1.4	Material of chamber	**Aluminium**
2	**Shelves**	
2.1	Number of trays	**104**
2.2	Tray dimensions	**600 mm x 400 mm**
2.3	Totable usable tray area	**24,5²**
2.4	Distance between shelves	**50 mm**
3	**Vacuum system**	
3.1	Vacuum pump type	**Recommended: Leybold SV300B**
3.2	Pump down time to 0.1 mbar	**40 minutes**
3.3	Maximum system vacuum	**10 mTorr**
3.4	System leak rate	**10^-4 mTorr/sec**
4	**Heating system**	
4.1	Maximum shelf temperature	**+80°C**
4.2	Minimum shelf temperature	**No cooling capacity**
4.3	Heating capacity	**Up to 400 Watt/tablett**
4.4	Defrost mechanism	**Dual chamber**
4.5	Defrost time	**0 min**
5	**Refrigeration system**	
5.1	Number of compressors	**2**
5.2	Compressor Type	**Bitzer**
5.3	Maximum cooling capacity	**-70°C**

5.4	Compressor energy consumption	**2x 5.8kW**
5.5	Size of freezedryer	**3600mm x 1700mm x 1150mm**
5.6	Weight of freezedryer	**2650kg**
5.7	Control of freezedryer	**Siemens simatic S7/ Kinco**

Table 2: **Utility Requirements**

# Notation	Description	Performance
1	**Electricity**	**Electricity EU - Option 50Hz 63A / 3 phases 230V/ Neutral/ Ground/ 45kW max**
2	**Internet connection**	**Electricity US - Option 60Hz 200A/ 240V/ Neutral/ Ground/ 48kW max**
3	**Ambient temperature**	**<25°C**

Table 3: **Detailed Technical Specifications**

# Notation	Description	Performance
1	**General Information**	
1.1	Model	**IC570**
1.2	Maximum ice capacity / 24 h	**infinite**
1.3	Control	**Siemens simatic S7/ Kinco**
1.5	Floor space with maintenance area	**Extra 1 m at each side**
1.6	Weight (approx..)	**2650kg**
1.7	Noise	**Sound pressure level less than 65 db (A) measured from a distance of 1 meter from the machine**
2	**Chamber**	
2.1	Chamber form	**Square**
2.2	Internal finish	**Hard anodized 25u**

2.3	Outside finish	**Hard anodized 25u**
2.4	Vacuum nanomenter for chamber vacuum measurement	**3x Thyracont vacuum sensor**
3	**Door**	
3.1	Door	**50 mm**
3.2	Door Material	**Acrylic sheet**
3.3	Chamber door open direction	**Moving to the front**
3.4	Door closing mechanism	**Manual**
3.5	Gasket	**Silicone rubber**
3.6	Locking arrangement	**Manual door lock**
4	**Shelves**	
4.1	Temperature range	**Up to +80°C**
4.2	Temperature sensors	**PT100 "A"**
4.3	Number of trays	**108**
4.4	Total usable area (52 compartments)	**25m²**
4.5	Tray dimension (half tray)	**600 mm x 400 mm x 20 mm, 2 trays in each shelf**
4.6	Material	**Anodized aluminium or stainless steel**
4.7	Shelf temperature precision	**+/- 0.1°C**
5	**Refrigeration System**	
5.1	Compressor	**Bitzer**
5.2	Compressor current load	**2x 5,8kW**
5.3	Refrigerant depending on local regulations	**R449A or R404A**
5.4	Defrost/De-icing	**Dual chamber system**
5.5	Defrost time	**0 min**
6	**Heating System**	
6.1	Heating method	**Kapton mat**
6.2	Heating capacity	**Up to 400 Watt/tray**
6.3	Maximum heating mat temperature	**+80°C**
7	**Vacuum System**	
7.1	Vacuum pump	**Leybold SV300B**
7.2	Pump isolation valve on main vacuum pipeline	**Butterfly or ballvalve**

7.3	Anti-suck valve	**Inside vacuum pump**
7.4	Vacuum manometer for vacuum pipeline vacuum measurement	**Thyracont vacuum sensor**
7.5	Final vacuum	**<0.01 mbar**
7.6	Time to build up final vacuum	**<20 min**
7.7	Leakage rate of system	**10^-3 mTorr/sec**
8	**Control system**	
8.1	PLC	**Siemens Simatic 57 + Kinco**
8.2	Touchscreen	**Kinco**
8.3	Software	**Inherent software, automatic control as well as manual control of all control options possible. Control points are shown on screen, advanced statistics of drying cycle are shown and can be saved. Individual programmes can be created and saved.**
9	**Documentation**	
9.1		**Operation manual**
9.2		**Layout drawing**
9.3		**Electrical wiring drawing**
9.4		**Loose parts list**

Table 4: **Loose Parts List**

# Notation	System	Description	Quantity
1	**Electrical System**		
1.1		Vacuum pump oil	**4 L**
2	**Valves**	Relays	**2**
2.1		Vacuum valve for pump	**1**
2.2		KF25 clamp	**2**
2.3		KF25 seal	**2**
4	**Control**		
4.1		CAT6 Ethernet cable	**1**
5	**Tool**		
5.1		Phase screwdriver	**1**

6	**Extras**		
6.1		Thermo gloves	**1**
6.2		USB Stick	**2**
7	**Silicon oil**		**200L**

Suggested Floorplan