Low Temperature Incubator (Energy Saving & Programmable)

Forced Air Convection

INE800

| Operating temp. range | 0°C~+60°C | | Temp. gradient (JIS) | 2°C (at 37°C during continuous operation) | | Internal capcaity | 286L |

Upgraded inverter control improved refrigeration efficiency, reduced frost significantly and minimized wasted power during refrigeration.

- Controller upgraded for easier viewing and operability
- Temperature distribution accuracy improved for better incubation
- Standard equipped with program operation, auto-stop, auto-start, self-diagnostic, timer, calibration off-set, memory, and electricity & CO_2 emission monitor
- Designed with analog output (4-20mA) and external communication port (RS485)

286L
INE800

■ Specifications

Product code	211292
Model	**INE800**
System	Forced air convection
Operating temperature range	0~+60°C
Setting temperature range	-5~+65°C
Temperature adjustment accuracy[1]	±0.2°C (at 37°C during continuous operation) JTM K05, ±0.5°C (at 37°C cycle operation) JTM K05
Temperature fluctuation[1]	0.6°C (at 37°C during continuous operation) JIS, 2.0°C (at 37°C cycle operation) JIS
Temperature distribution accuracy[1]	±0.5°C (at 37°C during continuous operation) JTM K05
Temperature gradient[1]	2.0°C (at 37°C during continuous operation) JIS
Max. temperature reaching time[1]	20~60°C 35min.
Min. temperature reaching time[1]	20~0°C 50min.
Cooling mechanism	Continuous operation, Cycle operation, Cooling-stop operation
Interior material	Stainless steel
Exterior material	Chromate-free electrogalvanized steel plate Baked chemical resistant finish
Compressor	200W Rotary Unit
Cooling medium	R134a
Operation range of freezer	Below 40°C
Defrosting mechanism	Hot gas bypass method, Manual (random) defrost / Auto (time) defrost
Sensor	Double sensor: Platinum resistance temperature detector: Pt100Ω (Temperature controller), K-thermocouple (Overheat preventation device)
Cable port	I.D.: 50 mm (Right side of main unit)
Temperature controller	PID control by microprocesser
Temperature display	Setting Temp. Display : 5-digit orange LED digital display, Actual Temp. Display : 4-digit green LED digital display
Timer / timer resolution	0~99hr. 59min. / 1min.
Operation function	Fixed temperature, Auto start, Auto stop, Quick auto stop, Program (99 steps, 99 patterns)
Additional functions	Calibration off-set, Electricity & CO_2 emission monitor, Voltage recovery optional, User setting saving/Readout, Calendar timer (24 hours)
Safety device	Self diagnostic function (Temp. sensor error, Heater disconnection, SSR short-circuit, Main relay error, Automatic overheat prevention), Key lock, Overcurrent electric leakage breaker, Independent overheat prevention device, Fan malfunction detector, Compressor high-pressure detector, Inverter malfunction detector
External dimensions	W710×D645×H1730mm
Internal dimensions[2]	W600×D477×H1000 (effective 800) mm
Internal capacity	286L
Shelf load capacity	15 kg / pc.
Shelf rest step number / pitch	23 steps / 30mm
Power supply (50/60 Hz)	AC 220V 5A Single phase with step-down transformer
Weight	Approx. 135kg
Included accessories	Stainless steel punched metal 5 pcs. shelf / 10pcs. Brackets, 2 keys, Silicon stopper for cable hole 1 pc

[1] Conditions: temperature and humidity: 23°C±5°C, 65%RH±20% (no load)
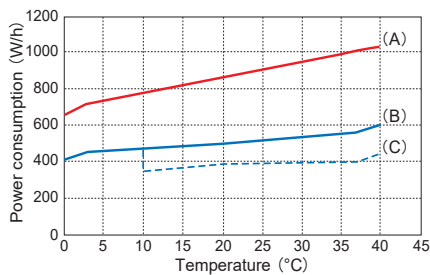[2] Do not include protrusions

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Power Consumption Comparison

	0°C	3°C	20°C	37°C
IN804 (A)	648	712	864	1007
INE800 (Continuous operation) (B)	409	446	498	560
INE800 (Cycle operation) (C)			387	396
(A)+(B) Reduction Rate	37%	37%	42%	44%

Unit : Wh

Comparison with IN804
1. Condition : AC100V/50Hz, Room Temp 23°C, 5 shelves, no load
2. Data was taken when each setting was stable

CO2 emissions reduced by approx 1,269 kg
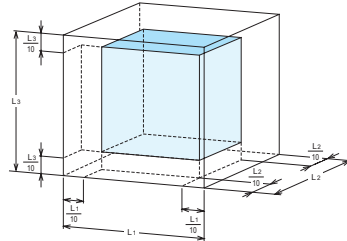(Calculated for 1 year operation with 37°C setting)

Falling / Rising Temp. Curve
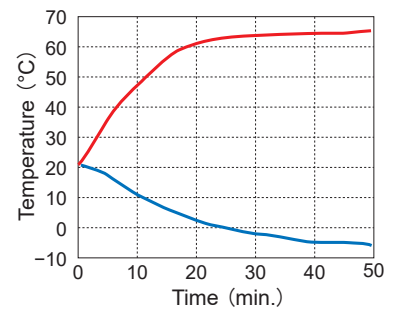
9 Point Temperature Distribution

|	Upper Front Left	Upper Back Left	Upper Front Right	Upper Back Right	Lower Front Left	Lower Back Left	Lower Front Right	Lower Back Right	Center Side (°C)
No load (Continuous operation)	37.1	36.2	37.2	36.9	36.8	36.8	37.1	36.9	37.0
Loaded (Continuous operation)	37.1	36.3	37.0	36.9	36.5	35.9	36.7	36.1	37.0

Condition
1. Above 9 measurement points were taken from the effective internal capacity down-scale by 10% (as the image on the right)
2. Room Temp. 23°C, AC100V, 50Hz, Average temperature during stable setting temp. set at 37°C
3. No Load condition: 5 shelves
4. Loaded condition: each of the 12 shelves were loaded with 20 Petri Dishes (Total : 240 Petri Dishes)
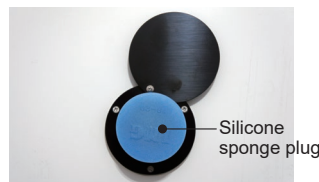
Interior

Method

[Side view]
Circulation fan
Vertical air flow
Heater
Cooler
Chamber
Inner door
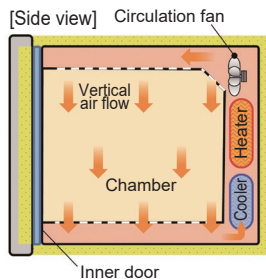
Control Panel

Overheat Prevention Device

Overheat prevention

External Output Terminal (Top: optional Bottom: standard)
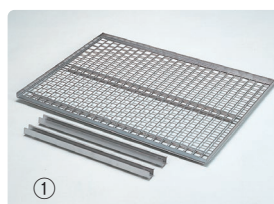

Cable Port (I.D.Φ50mm standard)

Silicone sponge plug

Dimensions (mm)

INE800
1730
710
304
744
645
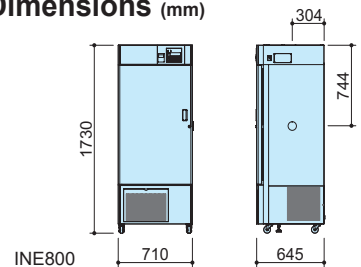
Optional items

No.	Description	Product code
①	Stainless steel punched metal shelf up to 15kg (with bracket 2 pcs.)	211221
②	Stainless steel wire shelf up to 20kg (with bracket 2 pcs.)	212918
③	*External communication adapter	211880
④	*External alarm terminal	211881
⑤	*Time-up output terminal	211882
⑥	Earthquake resistant fixture	211883
⑦	Drain water tray (4L, SUS)	213466

External communication adapter is equipped with RS485-USB interchange adapter, 1m USB cable, 3m RS485 connection cable and utility software CD (Accepts Windows 7)
* Please specify when ordering main unit

① Stainless punching metal shelf (with bracket 2pcs)

② Stainless wire shelf (with bracket 2pcs)