NOR-LAKE® SCIENTIFIC
HUMIDITY AND TEMPERATURE STABILITY TEST CHAMBERS

Designed to meet the demanding requirements for scientific and laboratory research. Advanced engineered design incorporates the latest in cabinet, refrigeration, temperature control and monitoring features. Provides energy efficient, convenient, safe and reliable performance for optimal storage temperature environments necessary for a wide range of life science, pharmacy, biological, medical, clinical, and industrial applications.

Standard Features:

- Digital 4x20 character LCD display microprocessor temperature controller
- Audible and visual Hi/Lo temperature alarm
- Adjustable control range from 4°C to 70°C; Operating range with humidity control 5°C to 60°C
- Humidity control
- Programmable ramp and soak
- Remote alarm contacts
- Continuous product temperature display
- 3 sensor system, 2 product,1 air
- Power supply switch
- Door ajar alarm, audible and visual
- 2 to 10 volt DC output for product temperature (selectable to air temperature)
- Password protection – set-points and factory settings
- 100 event alarm logging date/time display
- Integrated Hi/Lo product temperature alarm test
- Digital calibration air and product
- Real time clock with date and time display
- Door opening counter with 24 hour automatic reset
- Adjustable alarm beep or constant on (key pad selectable)
- Alarm volume adjustable manually
- Low battery test switch with buzzer
- Fan motor run time monitor
- Defrost heater time monitor
- Condenser/compressor run time monitor
- Perimeter anti-condensate door frame (temperature selectable heater wire)
- Sensor failure alarm
- Power failure alarm
- Exterior cabinet front, sides and back are painted white
- Exterior cabinet top and bottom are galvanized steel
- Interior cabinet liner is stainless steel
- Cabinet is foamed-in-place with CFC Free high density polyurethane foam insulation
- Solid doors(s), full size with anti-condensate door frame heater
- Heavy duty door pivot hinges
- Pull door handles
- Magnetic door gaskets
- Centered key door lock(s) (2 keys)
- Four casters on one and two door models (2 locking), Six casters (3 locking) on three door models
- 3 coated wire shelves per door section
- Interior drain with plug
- Top mounted forced air refrigeration system
- Automatic defrost and condensate evaporation
- Wire basket drawer (maximum 8 per door)
- Warranties: 18 month parts and labor, 5 year compressor (US and Canada), 18 months parts (International)
- UL/CUL Listed (/8 models only)

Optional Features:

- Extra shelf
- Legs 6” in lieu of casters
- Reverse hinge door(s)
- Stainless steel exterior
- Stainless steel drawer (maximum 8 per door)
- Temperature chart recorder with chart paper (1 pen or 2 pen)
- 4-20ma output for product temperature (selectable to air temperature)
- Humidity Transmitter (2-100 DC)
- RS-485 digital communications port (MODBUS-RTU)
- Ethernet 10 baseT (HTTP) control monitoring web card
- Secure Guard II Lock ProxKey (Factory Installed)
- Secure Guard II MagKey (Factory Installed)
- Secure Guard II Lock Software
- Seismic mounting kit
- Electrical duplex outlet
- Access port 2” with sleeve and cover
- Sensor access port 1” diameter
- Export crating

NSRI241WSW/

NSRI241WSW/ NSRI331WSW/ NSRI522WSW/ NSRI803WSW/

NORLAKE SCIENTIFIC

Committed to our environment

Nor-Lake, Inc.
Registered to ISO 9001:2008
File No. 10001816

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CONTROL SYSTEM: A fully programmable logic microprocessor with non-volatile memory provides a user interface through a liquid crystal alphanumeric display. All set points are adjustable by one multi-function interface key pad. The standard control includes: Fully programmable ramp soak functions, product and air temperature Centigrade scale, alarm / temperature logging, system mode indicator heating / cooling, high / low audible / visual alarms, real time clock, power failure alarm, sensor failure alarms, service prompts and user password entry system. The modular system includes expansion slots on the control board for the ability to add at a later date, the option of RS485 serial communication interface.

CONDITIONING SYSTEM: Precision control provided by the uniform distribution of air through a ceiling plenum. The plenum delivers conditioned air evenly through out the chamber providing maximum uniformity and efficiency. A heavy duty refrigeration system provides rapid removal of heat caused by door openings or product load. The system accurately delivers cooling based on demand and modulates the system to provide precision control. The system utilizes environmentally safe non-toxic CFC free refrigerant, with air-cooled, hermetically sealed compressor backed by a 5 year warranty. The system includes an expansion valve system to optimize capacity and efficiency. Heating is provided by a incoloy tube heater. The complete cabinet is UL and C-UL listed.

CONSTRUCTION: Heavy duty double wall construction. Interior and exterior finish of heavy gauge steel painted with scratch resistant baked enamel. Complete cabinet and door are insulated and sealed with 100% UL Class 1 rigid polyurethane foam insulation. The foamed-in-place insulation provides low heat transfer, improved cabinet performance and prohibits moisture from migrating into the cabinet walls. Hardware includes: Heavy duty self closing door hinges, full length stainless steel pull handle, full peripheral high temperature door gasket providing a tight seal. Key lock door and 4" casters for ease of rolling. Complete perimeter anti-condensate door heater wire thermostatically controlled for energy savings.

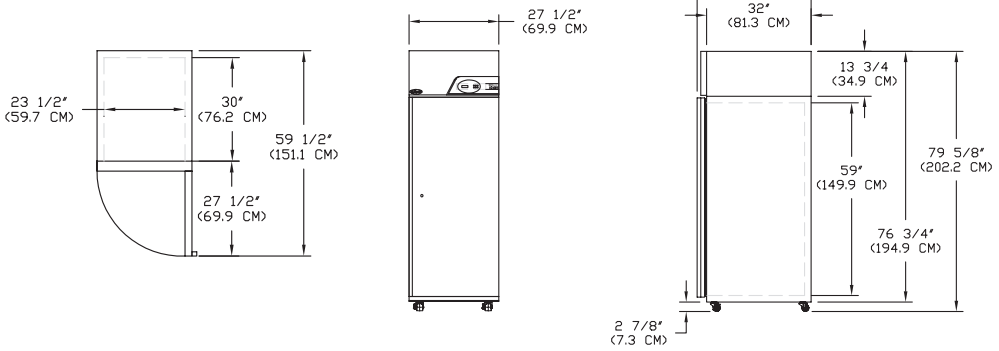
**C-UL is Underwriters Laboratories Safety Certification Mark which indicates that UL has tested the equipment to applicable CSA Standards.

SPECIFICATIONS

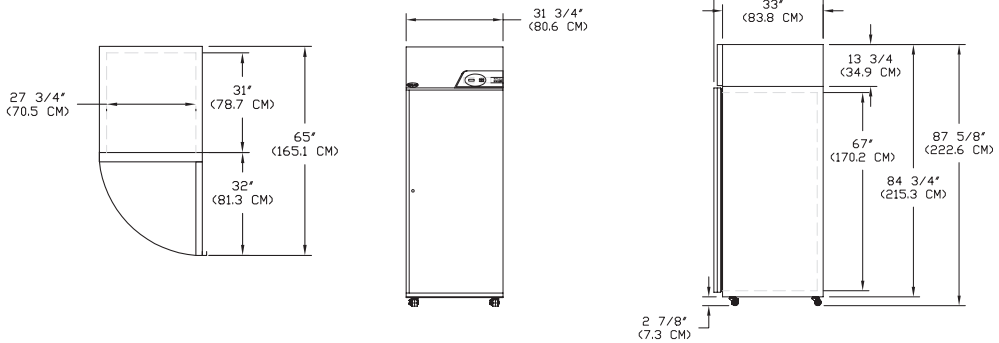
Models	*NSRI241WSW/8H*	*NSRI331WSW/8H*	*NSRI522WSW/8H*	*NSRI803WSW/8H*
	NSRI241WSW/5H	*NSRI331WSW/5H*		
Crated Height (in) (cm)	83" (211)	92" (234)	83" (211)	83" (211)
Crated Width (in) (cm)	31-7/8" (81)	36-1/4" (92)	59" (150)	85-1/4" (216)
Crated Depth (in) (cm)	38-7/8" (98)	39-7/8" (101)	38-7/8" (98)	38-7/8" (98)
Crated Weight (lbs) (kg)	407 (184)	462 (209)	651 (295)	840 (381)
Interior Height (in) (cm)	59" (149)	67" (170)	59" (149)	59" (149)
Interior Width (in) (cm)	23-1/2" (59)	27-3/4" (70)	51" (129)	78-1/2" (199)
Interior Depth (in) (cm)	30" (76)	31" (78)	30" (76)	30" (76)
Overall Height (in) (cm)	79-5/8" (202)	87-5/8" (224)	79-5/8" (202)	79-5/8" (202)
Overall Width (in) (cm)	27-1/2" (69)	31-3/4" (80)	55" (139)	82-1/2" (88)
Overall Depth (in) (cm)	34-7/8" (88)	35-7/8" (91)	34-7/8" (88)	34-7/8" (88)
Gross Cubage (ft.3) (m3)	24 (0.6)	33.1 (0.9)	52 (1)	80 (2)
Shelf Area (sq. ft.) (m^2)	12.8 (1)	15.8 (1)	28.5 (2)	42.8 (3)
Number of Shelves	3	3	6	9
Number of Casters	4	4	4	6
Condensing Unit Size	1/3 HP	1/3 HP	1/2 HP	3/4 HP
Refrigerant	R-134a	R-134a	R-134a	R-134a
Maximum Fuse Size AMPS	15	15	20	30
Total Amp Draw /8	11.7	11.7	13.4	18.79*
Total Amp Draw /5	11.3	11.3	N/A	N/A

Voltage Model Suffix Code	Voltage Description	NEMA Plug	NEMA Receptacle
/5	230V, 1PH, 50HZ	Power Inlet (IEC 60320) Module	Cord Supplied Locally
/8	115/208-230V/1PH60HZ	L-14-20P	L-14-20R
*/8	115/208-230V1PH60HZ	L-14-30P	L-14-30R

NSRI241WSW/_H



NSRI331WSW/_H



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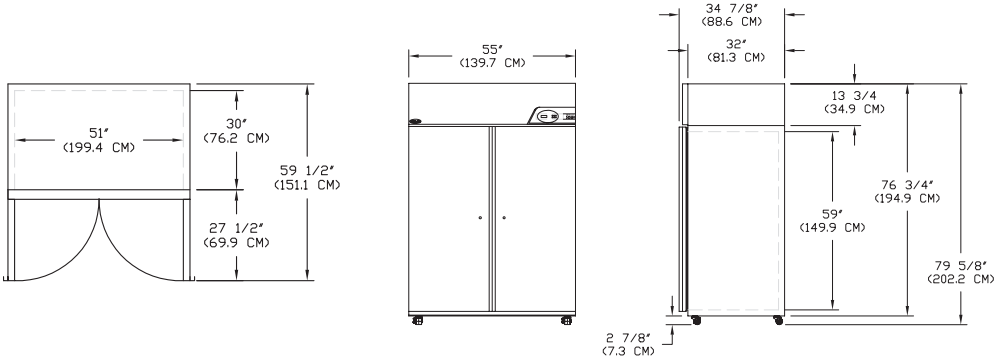
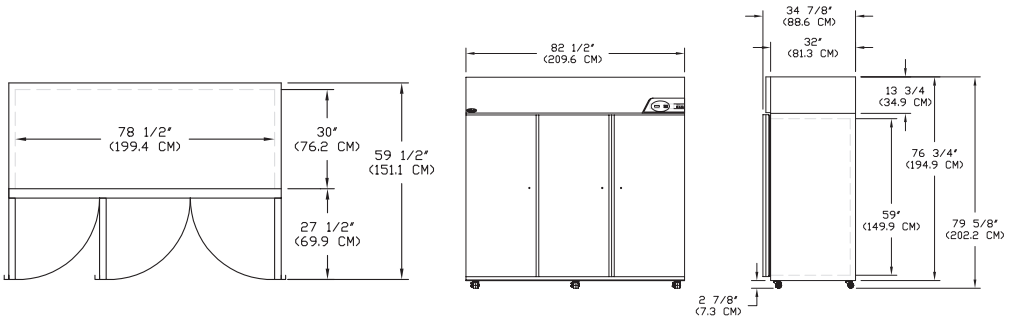


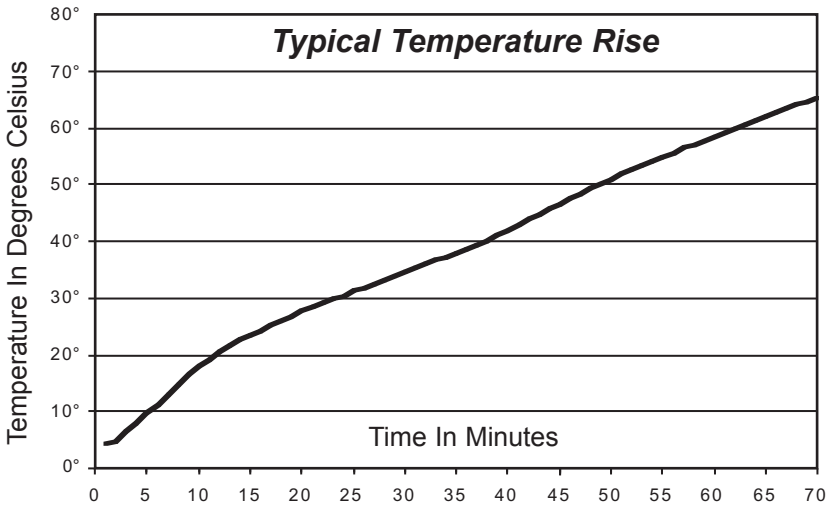
NSRI803WSW/8H

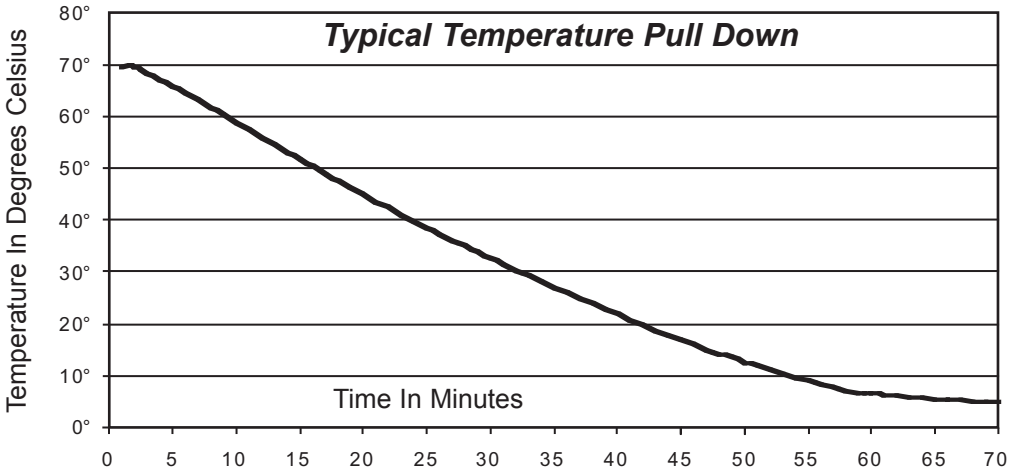


Performance:
Temperature Variation: +/-0.5°C @ 4°C to 70°C. The published temperature variation is derived from the maximum deviation of the thermocouple located nearest the chamber geometric center during the entire test period. (i.e. 25.0°C min and 26.0°C max divided by two would be a variation of +/-0.5°C).

Temperature Uniformity:
+/-1°C @ 4°C to 70°C. The published temperature uniformity is derived from the maximum deviation of 9 thermocouples are placed on 3 horizontal planes, each plane having the thermocouples evenly spaced diagonally across the shelf from the left and right inner wall, and the middle sensor placed in the approximate geometric center of the shelf.

Humidity Variation: +/-5% @ 5°C to 60°C and RH within performance graph. Humidity variation is derived from the maximum deviation of the humidity sensor during the test period.

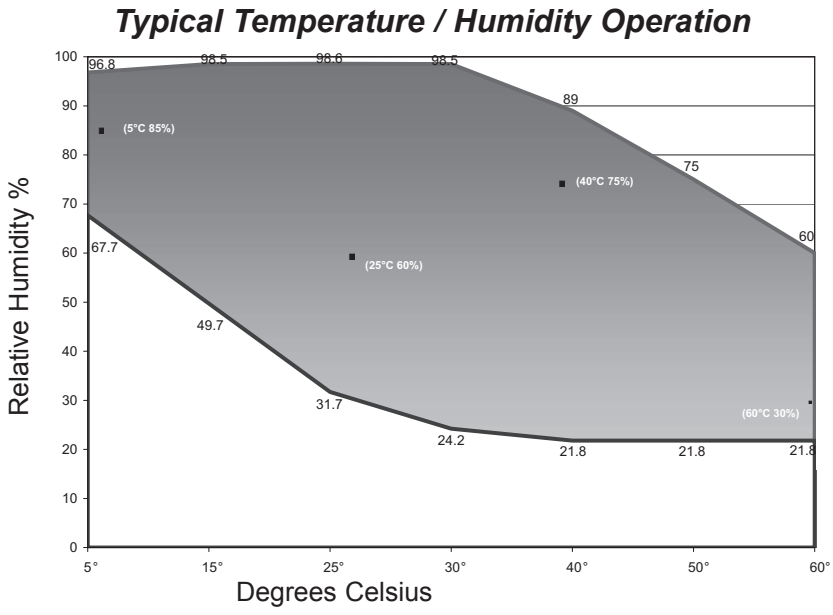




Performance data is based on 23°C, 50% RH ambient conditions, type T-24 Ga. thermocouples with 1.0oz. brass slugs attached and no product in the chamber. Data may vary if; ambient conditions change, product load is added, or other changes cause interference to chamber airflow.

Humidification / Dehumidification:
Relative humidity is induced by a highly efficient centrifugal atomizer with a sealed motor and low maintenance reservoir. Dehumidification is achieved by the use of a separate dehumidification latent coil. Both systems are precisely controlled by the programmable logic microprocessor. The humidity controller utilizes a dry capacitance type sensor for rapid response to humidity changes with exceptional accuracy. The humidifier requires a water source with low mineral content; i.e., resistance of 0.05 - 1.0 megohm and a pressure of 10 – 100 psi. Reverse osmosis treated water is recommended. The water supply connection requires 1/4” plastic or copper tubing.

Specifications subject to change without notice.



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Standex® Food Service Equipment Group

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