Quality is more than a word

ESPEC

Large Volume Test Chambers

Platinum Series

ESPEC NORTH AMERICA, INC.

Larger test chambers ...

The Platinum series chambers from ESPEC provide more workspace for temperature cycling and humidity testing to validate quality and reliability of large assemblies and completed products.

42-60 cu. ft. style

112 cu. ft. style

Platinum Features

Larger workspaces with wide range testing

The Platinum series chambers have temperature change rates up to 15°C per minute, plus controlled humidity from 10 to 95% is available. There are four sizes, including the extra-large 112 cubic foot size.

The three smaller sizes have a stainless steel exterior with the control console is beside the door, making it easily accessible at all times. The 112 size has a slate-blue & grey exterior with the controller on the door.

International applications

These models come in four interior sizes, and can be further customized, if needed:

- 42 cu. ft.: 44" width x 36" depth x 46" height (p. 6-7)
- 48 cu. ft.: 44" width x 36" depth x 53" height (p. 8-9)
- 60 cu. ft.: 52" width x 44" depth x 46" height (p. 10-11)
- 112 cu. ft.: 48" width x 48" depth x 84" height (p. 12-13)

42-60 cubic foot sizes include shelf pilasters and a nonmetallic thermal break around the doorframe. (42 cu. ft. model shown)

Designed for serviceability and safety

For safety and worldwide compliance, Platinum series are UL 508A certified or CE-marked.

The refrigeration service panels are hinged for fast access. Analog refrigeration gauges are standard to help you monitor system performance and pinpoint service needs.

All models feature three levels of overheat protection, plus two levels of overcool protection. The fully-integrated system controller provides alarm messages with specific trouble-shooting help to quickly resume testing.

Standard features:

- Stainless steel interior
- High performance refrigeration utilizing reliable Copeland Scroll or Discus compressors.
- Hinged service panels for easy access
- Specimen power relay for interlocking test samples or external devices to chamber power for safety.
- Window with thin-film heaters and LED lighting
- One 100mm (4") cable port on the left side
- 42-60 cubic foot sizes include shelf pilasters, one shelf, & casters.

The 112 cubic foot size is suited for tall products such as solar panels, or large racks of smaller products.

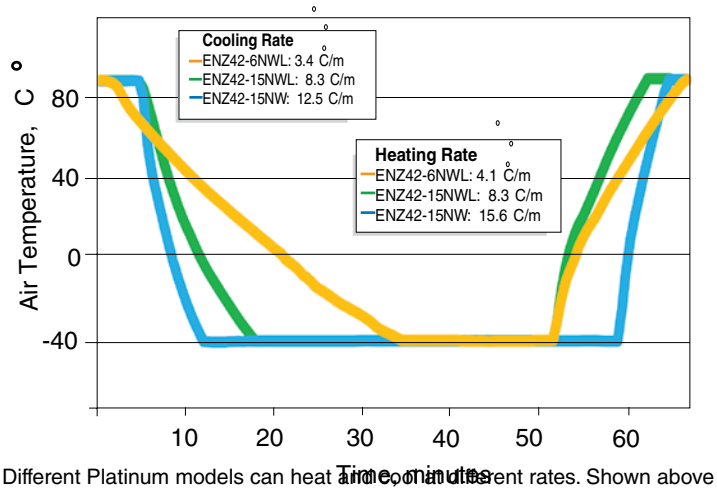
Performance

Temperature cycling up to 15 degrees per minute

The Platinum series has 58 different models, which allows you to choose the size and performance best suited for your test applications. Temperature cycling rates of up to 15°C/min. are possible. Two different ultimate low temperatures are available: -35°C or -70°C.

Models ENL & ENX also control humidity, for expanded testing options beyond temperature cycling.

Platinum chambers are capable of meeting the performance requirements of JEDEC, IEC, Mil-Std, and other international environmental test performance standards.



Different Platinum models can heat and cool at different rates. Shown above are change rates for ENZ42 models, from -40°C to 85°C with 50 lbs aluminum load.

Get a performance evaluation to help select your model

For better assurance of performance for your temperature cycling application, ESPEC can provide a guaranteed performance calculation based on your submitted requirements.

Please use these questions (at right) as a guide to define your test plan. You can then give this information to your local sales representative, or submit at www.espec.com, for review by an ESPEC engineer. A recommended model with appropriate refrigeration size will be returned.

Questions for performance evaluation request:

1. Chamber type
Desired size: 42, 48, 60, 112
Local power: 50Hz or 60Hz?
Humidity control: Yes or no?

2. Your Sample
Sample description and type of material(s)
Total mass per test, including any racks or cabling
Heat output of samples, in watts, if powered during test

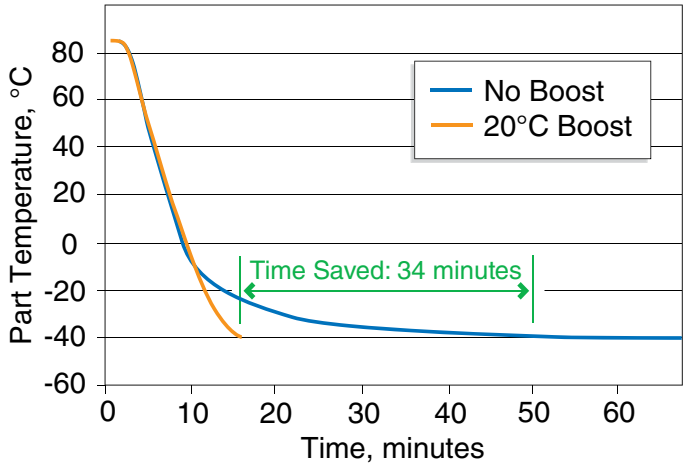
3. Your Test Plan
Test method, if a published standard (e.g. JEDEC JESD22-A104C)
Start temperature for cycling
End temperature for cycling
Ramp rate or time allowed between start and end temperatures
Ramp rate measured in the air or on the product

Air-cooled models available

High performance test chambers usually mean water cooling utilities are required. Most Platinum models with 6 hp refrigeration are available with integrated air-cooling. The condenser is built into the bottom machine section with low speed fans for minimal noise impact. Chambers with higher power refrigeration are available with a remote air-cooled instead of water-cooling.

Advanced Control

The console includes the P-300 programmer, USB port, product temperature protector, and chamber light (option).



Product temperature control generates faster ramp-rates for test samples, as well as significant time savings for soak periods.

Enhanced performance and USB access with P-300 touch-screen controller

The exclusive ESPEC P-300 programmer/controller brings energy savings, user-friendly operation, and expanded data access to the Platinum chambers. Tabs on the updated user interface allow faster access to any screen. Standard USB and optional Ethernet interfaces make programming and data acquisition much simpler. In addition, improved algorithms make operation more energy efficient, and temperature ramping faster, smoother and more repeatable..

- Store up to forty programs, as well as three constant-mode configurations.
- Multilingual display in English, Japanese, Chinese, or Korean.
- Alarm history and diagnostics, plus a 'back trace' feature for troubleshooting.

Standard USB port for upload/download of programs and test data. Test programs can be edited and stored on a PC using included software, then uploaded via USB. Operation data can be downloaded for review, graphing, or exporting to Excel.

Recommended: The Web Controller add-on allows remote operation, programming, and data-logging via a web browser or API. See page 15 for more details.

Optional product temperature control

- Monitors product temperature
- Enables faster product change rates
- Shortens testing time

During normal cycling tests, product temperature can lag behind air temperatures up to 20 degrees. The optional product temperature control is a valuable feature for high performance testing in Platinum chambers. This feature drives faster change rates by directly monitoring product temperature and automatically boosting air-temperature setpoints until the sample approaches the desired temperature.

As shown in the example at left, achieving -40°C product temperature with a 20°C boost (air overshooting temporarily to -60°C) took just 16 minutes, compared for nearly 50 minutes with the chamber air set at -40°C.

SPECIFICATION - 1190L / 42 CU. FT. MODELS

ENZ42: -70 TO 180°C Temp-only

	ENZ42-6NAL	ENZ42-6NWL	ENZ42-15NWL	ENZ42-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)			
*Cooling Capacity	3 kW [2.4 kW] at -50°C	3 kW [2.4 kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 6 hp Scroll	Cascade 15 hp Scroll	Cascade 15 hp Discus
Heating System	10 kW	10 kW	15 kW	20 kW
Measured Airflow	1,870 cubic meters per hour (1100 CFM)			
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)				
Heating Rate	4.1°C/m average	4.1°C/m average	8.3°C/m average	15.6°C/m average
*Cooling Rate	3.4°C/m [2.6°C/m]	3.4°C/m [2.6°C/m]	8.3°C/m [5.6°C/m]	12.5°C/m [10°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A]	40 A [50 A]	70 A [80 A]	100 A [125 A]
Cooling Water Maximum with 30°C Inlet	—	53 LPM (14 GPM) (NWL suffix models)	114 LPM (30 GPM)	121 LPM (32 GPM)
Heat to Room	78,000 BTU/hr	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENU42: -35 TO 180°C Temp-only

	ENU42-6NAL	ENU42-6NWL	ENU42-15NWL	ENU42-15NW
Temperature Range	-35 to 180°C (-40 to 354°F)			
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	4.3 kW [3.4 kW] at -20°C	8.5 kW [6.8 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 6 hp Scroll	Single-stage 15 hp Scroll	Single-stage 15 hp Discus
Heating System	10 kW	10 kW	15 kW	20 kW
Measured Airflow	1,870 cubic meters per hour (1100 CFM)			
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)				
Heating Rate	5°C/m average	5°C/m average	10°C/m average	15°C/m average
*Cooling Rate	3.5°C/m [2.6°C/m]	3.5°C/m [2.6°C/m]	10°C/m [6.5°C/m]	15°C/m [12.3°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A]	45 A [50 A]	60 A [70 A]	80 A [90 A]
Cooling Water Maximum with 30°C Inlet	—	53 LPM (14 GPM) (NWL suffix models)	114 LPM (30 GPM)	121 LPM (32GPM)
Heat to Room	78,000 BTU/hr	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

DIMENSIONS - 42 cu. ft. models

Workspace Volume	1190 L (42 cu. ft.)	
Workspace (WxDxH)	1118 x 914 x 1168 mm (44" x 36" x 46")	
Exterior (WxDxH)	NAL / NWL suffix models	1676 x 1867 x 2641 mm (66" x 73.5" x 104")
	15NW models	2032 x 2908 x 2641 mm (80" x 114.5" x 104")

SPECIFICATION - 1190L / 42 CU. FT. MODELS

ENX42: -70 TO 180°C Temp/Humidity

	ENX42-6NAL	ENX42-6NWL	ENX42-15NWL	ENX42-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)			
*Cooling Capacity	3 kW [2.4 kW] at -50°C	3 kW [2.4 kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 6 hp Scroll	Cascade 15 hp Scroll	Cascade 15 hp Discus
Heating System	10 kW	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below			
Measured Airflow	1,870 cubic meters per hour (1100 CFM)			
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)				
Heating Rate	4.1°C/m average	4.1°C/m average	8.3°C/m average	15.6°C/m average
*Cooling Rate	3.4°C/m [2.6°C/m]	3.4°C/m [2.6°C/m]	8.3°C/m [5.6°C/m]	12.5°C/m [10°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A]	40 A [50 A]	70 A [80 A]	100 A [125 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity			
Cooling Water Maximum with 30°C Inlet	—	53 LPM (14 GPM) (NWL suffix models)	114 LPM (30 GPM)	121 LPM (32 GPM)
Heat to Room	78,000 BTU/hr	—	—	—

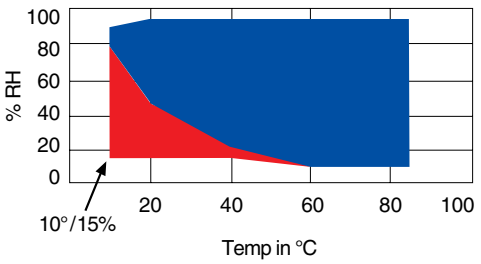
*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENL42: -35 TO 180°C Temp/Humidity

	ENL42-6NAL	ENL42-6NWL	ENL42-15NWL	ENL42-15NW
Temperature Range	-35 to 180°C (-40 to 354°F)			
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	4.3 kW [3.4 kW] at -20°C	8.5 kW [6.8 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 6 hp Scroll	Single-stage 15 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below			
Measured Airflow	1,870 cubic meters per hour (1100 CFM)			
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)				
Heating Rate	5°C/m average	5°C/m average	10°C/m average	15°C/m average
*Cooling Rate	3.5°C/m [2.6°C/m]	3.5°C/m [2.6°C/m]	10°C/m [6.5°C/m]	15°C/m [12.3°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A]	45 A [50 A]	60 A [70 A]	80 A [90 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity			
Cooling Water Maximum with 30°C Inlet	—	53 LPM (14 GPM)	114 LPM (30 GPM)	170 LPM (45 GPM)
Heat to Room	78,000 BTU/hr	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

Humidity Control Range



Blue = Standard humidity range
Red = Optional low-humidity range

Guaranteed humidity control range without live load.
Fluctuation is within ±3%, per IEC 60068 3-6.

SPECIFICATION - 1359L / 48 cu. ft. MODELS

ENZ48: -70 TO 180°C Temp-only

	ENZ48-6NWL	ENZ48-12NWL	ENZ48-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)		
*Cooling Capacity	3 kW [2.4 kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 12 hp Scroll	Cascade 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Measured Airflow	1,869 cubic meters per hour (1100 CFM)		
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	3.9°C/m average	6.2°C/m average	13.8°C/m average
*Cooling Rate	3.3°C/m [2.5°C/m]	5.3°C/m [3.9°C/m]	11.36°C/m [8.6°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	40 A [50 A]	70 A [80 A]	100 A [125 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENU48: -35 TO 180°C Temp-only

	ENU48-6NWL	ENU48-12NWL	ENU48-15NW
Temperature Range	-35 to 180°C (-40 to 356°F)		
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Measured Airflow	1,869 cubic meters per hour (1100 CFM)		
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	4.6°C/m average	7.5°C/m average	13.1°C/m average
*Cooling Rate	3.2°C/m [2.5°C/m]	5.6°C/m [3.9°C/m]	14°C/m [11.6°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

DIMENSIONS - 48 cu. ft. models

Workspace Volume	1376 L (48 cu. ft.)	
Workspace (WxDxH)	1118 x 914 x 1346 mm (44"x 36"x 53")	
Exterior (WxDxH)	NAL / NWL suffix models	1676 x 1867 x 2819 mm (66" x 73.5" x 111")
	15NW models	2032 x 2908 x 2819 mm (80" x 114.5" x 111")

SPECIFICATION - 1359L / 48 CU. FT. MODELS

ENX48: -70 TO 180°C Temp/Humidity

	ENX48-6NWL	ENX48-12NWL	ENX48-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)		
*Cooling Capacity	3 kW [2.4 kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below		
Measured Airflow	1,869 cubic meters per hour (1100 CFM)		
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	3.9°C/m average	6.2°C/m average	13.8°C/m average
*Cooling Rate	3.3°C/m [2.5°C/m]	5.3°C/m [3.9°C/m]	11.3°C/m [8.6°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	40 A [50 A]	70 A [80 A]	100 A [125 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity		
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

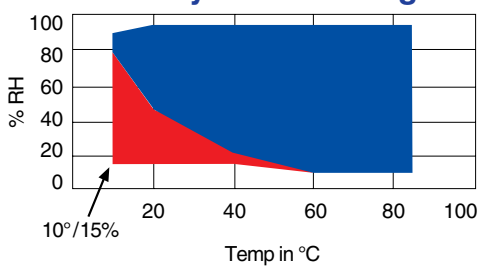
*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENL48: -35 TO 180°C Temp/Humidity

	ENL48-6NWL	ENL48-12NWL	ENL48-15NW
Temperature Range	-35 to 180°C (-40 to 356°F)		
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below		
Measured Airflow	1,869 cubic meters per hour (1100 CFM)		
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	4.6°C/m average	7.5°C/m average	13.1°C/m average
*Cooling Rate	3.2°C/m [2.5°C/m]	5.6°C/m [4.1°C/m]	14°C/m [11.6°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity		
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

Humidity Control Range



Blue = Standard humidity range
Red = Optional low-humidity range

Guaranteed humidity control range without live load.
Fluctuation is within ±3%, per IEC 60068 3-6.

SPECIFICATION - 1725L / 60 cu. ft. MODELS

ENZ60: -70 TO 180°C Temp-only

	ENZ60-6NAL ENZ60-6NWL	ENZ60-12NWL	ENZ60-15NW	ENZ60-30NW
Temperature Range	-70 to 180°C (-94 to 354°F)			
Cooling Capacity	3 kW [2.4 kW] at -50°C	5 kW [4 kW] at -50°C	9.5 kW [7.8 kW] at -50°C	20 kW [16.5 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 12 hp Scroll	Cascade 15 hp Discus	Cascade 30 hp Discus
Heating System	10 kW	15 kW	20 kW	35 kW
Measured Airflow	1100 CFM (1,870 m3/h)			2200 CFM (3,738 m3/h)
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)				with 300 lbs. Al
Heating Rate	2.2°C/m average	5.2°C/m average	12.5°C/m average	8.3°C/m average
*Cooling Rate	1.8°C/m [1.3°C/m]	4.1°C/m [3.1°C/m]	10.4°C/m [7.1°C/m]	8.3°C/m [5.6°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A] 40 A [50 A]	70 A [80 A]	100 A [125 A]	150 A [200 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM) (NWL suffix models)	102 LPM (27 GLPM)	121 GPM (32 GPM)	201 LPM (53 GPM)
Heat to Room	78,000 BTU/hr (NAL suffix models)	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENU60: -35 TO 180°C Temp-only

	ENU60-6NAL ENU60-6NWL	ENU60-12NWL	ENU60-15NW	ENU60-30NW
Temperature Range	-35 to 180°C (-40 to 354°F)			
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C	24.7 kW [19.8 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Discus	Single-Stage 30 hp Discus
Heating System	10 kW	15 kW	20 kW	35 kW
Measured Airflow	1100 CFM (1,870 m3/h)			2200 CFM (3,738 m3/h)
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)*				with 300 lbs. Al
Heating Rate	3°C/m average	5°C/m average	13.1°C/m average	10°C/m average
*Cooling Rate	3°C/m [2.2°C/m]	5°C/m [3.6°C/m]	13.1°C/m [10.5°C/m]	10.5°C/m [6.7°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]			
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]	125 A [150 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM) (NWL suffix models)	102 LPM (27 GPM)	121 LPM (32 GPM)	201 LPM (53 GPM)
Heat to Room	78,000 BTU/hr (NAL suffix models)	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

DIMENSIONS - 60 cu. ft. models

Workspace Volume	1725L (60 cu. ft.)	
Workspace (WxDxH)	1321 x 1118 x 1168 mm (52" x 44" x 46")	
Exterior (WxDxH)	6 - 15 hp models	1880 x 2070 x 2642 mm (74" x 81.5" x 104")
	30 hp models	2032 x 3112 x 2642 mm (80" x 122.5" x 104")

SPECIFICATION - 1725L / 60 CU. FT. MODELS

ENX60: -70 TO 180°C Temp/Humidity

	ENX60-6NAL ENX60-6NWL	ENX60-12NWL	ENX60-15NW	ENX60-30NW
Temperature Range	-70 to 180°C (-94 to 354°F)			
Cooling Capacity	3 kW [2.4 kW] at -50°C	5 kW [4 kW] at -50°C	9.5 kW [7.8 kW] at -50°C	20 kW [16.5 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 12 hp Scroll	Cascade 15 hp Discus	Cascade 30 hp Discus
Heating System	10 kW	15 kW	20 kW	35 kW
Humidity Range	10 to 95% RH per chart below			
Measured Airflow	1100 CFM (1,870 m3/h)			2200 CFM (3,738 m3/h)
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)				with 300 lbs. Al
Heating Rate	2.2°C/m average	5.2°C/m average	12.5°C/m average	8.3°C/m average
*Cooling Rate	1.8°C/m [1.3°C/m]	4.1°C/m [3.4°C/m]	10.4°C/m [7.1°C/m]	8.3°C/m [5.6°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50 Hz]			
*Recommended Service	45 A [50 A] 40 A [50 A]	70 A [80 A]	100 A [125 A]	150 A [200 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity			
Cooling Water Maximum with 30°C Inlet	53 LPM(14 GPM) (NWL suffix models)	102 LPM (27 GPM)	121 LPM (32 GPM)	201 LPM (53 GPM)
Heat to Room	78,000 BTU/hr (NAL suffix models)	—	—	—

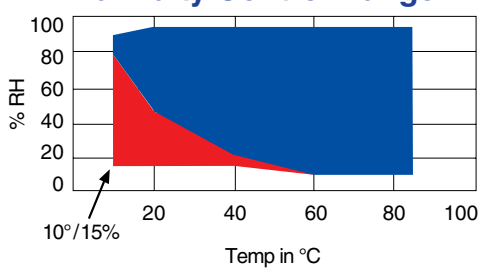
*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50 Hz power.

ENL60: -35 TO 180°C Temp/Humidity

	ENL60-6NAL ENL60-6NWL	ENL60-12NWL	ENL60-15NW	ENL60-30NW
Temperature Range	-35 to 180°C (-40 to 354°F)			
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C	24.7 kW [19.8 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Discus	Single-stage 30 hp Discus
Heating System	10 kW	15 kW	20 kW	35 kW
Humidity Range	10 to 95% RH per chart below			
Measured Airflow	1100 CFM (1,870 m3/h)			2200 CFM (3,738 m3/h)
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)				with 300 lbs. Al
Heating Rate	3°C/m average	5°C/m average	13.1°C/m average	10°C/m average
*Cooling Rate	3°C/m [2.2°C/m]	5°C/m [3.6°C/m]	13.1°C/m [10.5°C/m]	10°C/m [6.7°C/m]
Site Requirements				
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]			
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]	125 A [150 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity			
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM) (NWL suffix models)	102 LPM (27 GPM)	121 LPM (32 GPM)	201 LPM (53 GPM)
Heat to Room	78,000 BTU/hr (NAL suffix models)	—	—	—

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

Humidity Control Range



Blue = Standard humidity range
Red = Optional low-humidity range

Guaranteed humidity control range without live load.
Fluctuation is within ±3%, per IEC 60068 3-6.

SPECIFICATION - 3171L / 112 cu. ft. MODELS

ENZ112: -70 TO 180°C Temp-only

	ENZ112-6NWL	ENZ112-12NWL	ENZ112-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)		
*Cooling Capacity	3 kW [2.4kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 6 hp Scroll	Cascade 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Measured Airflow	3,398 cubic meters per hour (2,000 CFM)		
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	2.3°C/m average	3.6°C/m average	8.6°C/m average
*Cooling Rate	1.9°C/m [1.4°C/m]	3.1°C/m [2.3°C/m]	6.9°C/m [4.8°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	50 A [60 A]	70 A [80 A]	100 A [125 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

ENU112: -35 TO 180°C Temp-only

	ENU112-6NWL	ENU112-12NWL	ENU112-15NW
Temperature Range	-35 to 180°C (-40 to 356°F)		
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Measured Airflow	3,398 cubic meters per hour (2000 CFM)		
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	3°C/m average	3.3°C/m average	8.7°C/m average
*Cooling Rate	2°C/m [1.5°C/m]	3.2°C/m [2.5°C/m]	10°C/m [6.5°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

DIMENSIONS - 112 cu. ft. models

Workspace Volume	3171 L (112 cu. ft.)	
Workspace (WxDxH)	1219 x 1219 x 2134 mm (48" x 48" x 84")	
Exterior (WxDxH)	NWL suffix models	1600 x 2494 x 2466 mm (63" x 98"x 97")
	15NW models	1600 x 3312 x 2466 mm (63" x 130" x 97")

SPECIFICATION - 3171L / 112 CU. FT. MODELS

ENX112: -70 TO 180°C Temp/Humidity

	ENX112-6NWL	ENX112-12NWL	ENX112-15NW
Temperature Range	-70 to 180°C (-94 to 354°F)		
*Cooling Capacity	3 kW [2.4kW] at -50°C	6 kW [4.9 kW] at -50°C	9.5 kW [7.8 kW] at -50°C
Refrigeration System	Cascade 6 hp Scroll	Cascade 12 hp Scroll	Cascade 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below		
Measured Airflow	3,398 cubic meters per hour (2,000 CFM)		
Performance Example (-40°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	2.3°C/m average	3.6°C/m average	8.6°C/m average
*Cooling Rate	1.9°C/m [1.4°C/m]	3.1°C/m [2.3°C/m]	6.9°C/m [4.8 °C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	50 A [60 A]	70 A [80 A]	100 A [125 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity		
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

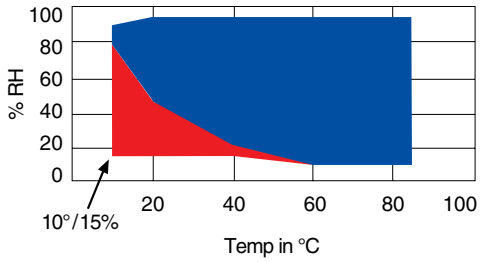
*Cooling capacity, ramp rates, and service amps in brackets are for 380V-415V 50Hz power.

ENL112: -35 TO 180°C Temp/Humidity

	ENL112-6NWL	ENL112-12NWL	ENL112-15NW
Temperature Range	-35 to 180°C (-40 to 356°F)		
*Cooling Capacity	4.3 kW [3.4 kW] at -20°C	7.1 kW [5.7 kW] at -20°C	12.5 kW [10 kW] at -20°C
Refrigeration System	Single-stage 6 hp Scroll	Single-stage 12 hp Scroll	Single-stage 15 hp Scroll
Heating System	10 kW	15 kW	20 kW
Humidity Range	10 to 95% RH per chart below		
Measured Airflow	3,398 cubic meters per hour (2000 CFM)		
Performance Example (-20°C to 85°C with 50 lbs. Aluminum)			
Heating Rate	3°C/m average	3.3°C/m average	8.7°C/m average
*Cooling Rate	2.0°C/m [1.5°C/m]	3.2°C/m [2.5°C/m]	10°C/m [6.5°C/m]
Site Requirements			
Electrical Supply	460V 3Ø 60Hz [380-415V 3Ø 50Hz]		
*Recommended Service	45 A [50 A]	60 A [70 A]	80 A [90 A]
Humidity Water	De-ionized water, 0.2 to 10 µS/cm resistivity		
Cooling Water Maximum with 30°C Inlet	53 LPM (14 GPM)	102 LPM (27 GPM)	121 LPM (32 GPM)

*Cooling capacity, ramp rates, and service amps in brackets are for 380-415V 50Hz power.

Humidity Control Range



Blue = Standard humidity range
Red = Optional low-humidity range

Guaranteed humidity control range without live load.
Fluctuation is within ±3%, per IEC 60068 3-6.

OPTIONS

Cabinet Options

- Additional adjustable shelves, capacity 45 kg. (100 lbs.)

Additional cable ports with cover and flexible port plug

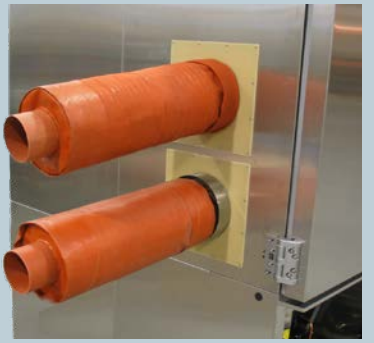
50, 100, or 150 mm (2", 4", or 6") diameters available

Rack for solar panel testing for 112 cu. ft. models

Operational Options

- Integrated air-cooled condenser for applications where water-cooling isn't practical. (For 6 hp units, see page 4.)
- Remote air-cooled condenser for 12-30 hp units, includes 40 ft. interconnect piping. A separate power drop is required.
- Liquid nitrogen (LN_2) cooling boost for faster temperature change rates.
- Dry air purge to keep moisture in the chamber extremely low by purging with -40°C dewpoint air. Compressed air supply required.
- Water purifying filter for humidity models
- Low humidity control systems (see chart on previous pages for range)

Remote environmentally conditioned air (ECA)



Allows conditioning of remotely-located equipment that cannot be placed inside the chamber.

Overall performance and available interior space are reduced.

Instrumentation Options

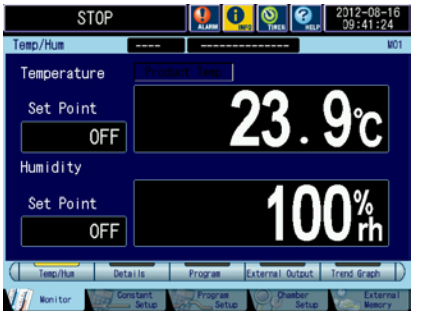
- RS-232C computer interface for general purpose applications using serial data communication.
- RS-485 interface for applications requiring full duplex and/or higher speed data transmission.
- Web Controller for remote Ethernet/web access (see next page).
- Product temperature control (see page 5)
- Solid state humidity sensor in lieu of wet/dry bulb (humidity models)
- Additional six time signals for controlling external devices
- Emergency-stop button

Recorders

- Chino paperless recorders with Ethernet and SD storage
- Honeywell circular-chart
- Chino strip-chart

Performance P-300 Programmer/Controller Specification

Display	Color touch-screen, 6.5 inch diagonal, 640x480 resolution Multilingual display in English, Japanese, Chinese, or Korean
Communications	Standard: USB external memory port Optional: RS-232, RS-485, GP-IB, Ethernet
Operating Modes	STOP: chamber off, programmer on PROGRAM: RUN runs selected test profile CONSTANT: runs at set value continually
Program Capacity	40 programs, 99 steps per program
Control Method	PID (Proportional. Integral, Derivative) plus WRTC (Window Reference Trajectory Control)
Programming Capabilities	• Create or copy programs • Upload and download programs via USB • Copy, edit, insert, and delete steps • Two nested loops to repeat steps up to 999 times • Selectable end-of-test modes • Create pause steps within programs • Soak control delays timer until setpoint is reached
Additional Functions	• Alarm report lists last 1000 alarms and time occurred • Time signal relay control (with naming capability) • High/low limit alarm functions • Audible alarm with on-screen explanation • Selectable restart modes after power failure • Automatic start and stop functions • Keylock protection and configuration lock-out • Service guide and help screens • Three settable reminder alarms for PM • Integrated running time meter • RoHS directive lead-free compliant



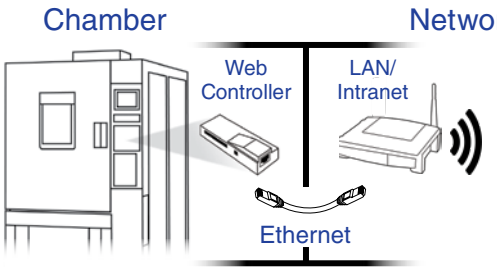
Remote operation and programming

Ethernet/LAN remote operation is possible via ESPEC's Web Controller. A straight-forward web-browser interface allows remote monitoring, programming and data logging via your local network. Email notice of alarms is also possible.

NEW: The Web Controller now includes a network view, RESTful API, and a macro editor. These allow you to display all your chambers in one screen, access functions and data via API, and create outbound triggered actions such as email notifications, data downloads, or API calls (webhooks).

Learn more and try a live demonstration:

www.espec.com/wc



The Web Controller is available for most USA-built ESPEC models built since 1997.

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DANGER

Not for use with specimens which are explosive or flammable, or which contain such substances. To do so could be hazardous, as this may lead to fire or an explosion.

ENA-EN-A Edition
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