

**SPECIFICATIONS FOR NUAIRE DHDD AUTOFLOW NU-5510
DIRECT HEAT DECONTAMINATION
AUTOMATIC CO² INCUBATOR**

This document is a concise statement of requirements for a quality Direct Heat Decontamination CO² Incubator, which may be used to augment your purchase request/order.

A NuAire sales representative will be pleased to explain the importance of the performance and control affected by each of the following requirements. The DHD AUTOFLOW NU-5510 meets all of the requirements in the following SPECIFICATION.

Overall Dimensions - Inches [mm]

| | | |
|---------|-----------|---------------|
| Height: | Exterior: | 39.5 [1003.3] |
| Width: | | 25.5 [647.7] |
| Depth: | | 26.5 [673.1] |
| Height: | Interior: | 25.5 [647.7] |
| Width: | | 21.5 [546.1] |
| Depth: | | 21.0 [533.4] |

Volume: 6.65 ft.³ [188.5 liters]

1. The chamber walls are directly heated by foil heating elements attached to the sides, bottom, top and back of the chamber.
2. A space-age high-density insulation [rated R5.0] covers the complete outer surfaces of the incubator inner chamber.
3. Air is constantly circulating within the chamber using a continuous operating fan/motor/blower within the upper air plenum and sidewall duct system. This airflow is distributed uniformly and at very low velocity.
4. A large replaceable 99.99% efficient HEPA filter cartridge continually filters the air that circulates in the chamber. The filter is made for the Decon cycle temperatures.
5. A state-of-the-art microcomputer based control system is specifically designed to service the precise control requirements of the chamber's environment.
6. The microcomputer is supported with Read Only Memory [ROM] containing executable software, Random Access Memory [RAM] for temporary storage, and Electronically Erasable Programmable Read Only Memory [EEPROM] for control set points and parameters. The EEPROM provides for indefinite storage of these values during periods of power off or power interruption. The microcomputer includes a complete internal diagnostic software package that permits fault isolation detection down to the failed component.

7. The direct heat incubator incorporates an integrated digital microprocessor-based, non-dispersive infrared CO² sensor. Advanced design provides a very stable drift-free output requiring less frequent calibration.
8. Incubator shall be listed by Underwriters Laboratory to meet the requirements of both the U.S. and Canada standards for electrical/mechanical integrity.
9. The outer shell is cold-rolled steel with powder coat paint finish.
10. The inner chamber is 16 gauge, type 304 polished stainless steel using coved corner crevice-free construction.
11. All stainless steel shelves, shelf supports, guide rails, and air plenum are easily removable for cleaning.
12. Manually adjustable outer front door heater and front frame perimeter heater are duty cycle controlled to reduce condensation within the chamber. The heaters are microprocessor controlled to reduce output in an increasing room ambient to avoid an overheating condition. The heater output can then increase back to the set value as the room cools back down.
13. Relative humidity level up to 95% is achieved in the incubator by the use of a stainless steel pan filled with distilled water and placed on the bottom of the chamber.
14. A microprocessor controlled air pump injects air at user settable intervals to control condensation.
15. The incubator is programmed with options that give the user control of System use, CO₂ sensor calibration procedures, alarm parameters, & adaptation to different lab environments.
16. Incubator shall come with four [4] square polished stainless steel shelves, 8 ft. [2.5m] electrical power cord, utility side access port, and heavy-duty leg levelers.
17. Incubators are stackable.
18. The incubator is equipped with 2 user selectable heated Decon cycles.
 - 95°C Humidified Decontamination
< 14 Hours (Start to Finish)
 - 145°C Dry Sterilization Cycle
< 10 Hours (Start to Finish)

19. Performance Parameters

| | |
|--|---|
| Temperature Range: | 5° C above ambient to 55°C |
| Temperature Sensitivity: | ±0.125° C |
| Temperature Uniformity: | ± 0.3° C @ 37° C |
| Temperature Accuracy: | ± 0.1° C |
| CO ² Range: | 0.1 to 20% |
| CO ² Accuracy: | ± 0.1% |
| CO ² Recovery: | Up to 5% ± 0.2% in 4 minutes |
| Temperature Recovery: | 0.3° C/min. |
| Temperature Display Resolution: | 0.1° C |
| CO ² Uniformity: | ± 0.1% |
| CO ² Display Resolution: | 0.1% |
| Door and Perimeter Heater | |
| Control Logic: | Proportional 0-100% [adjustable] |
| Temperature Sensor Type: | Precision Integrated Circuit |
| CO ² Control Logic: | Fixed Algorithm/Manual Environmental Adaptable |
| CO ² Sensor Type: | Infrared |
| RJ-11 Jack - on rear panel for remote alarm connection | |

20. The following optional equipment shall be available to support installation and user requirements:

- Automatic CO² Tank Switch [Internal]
- RS-232 Communication Output
- Additional Shelves
- Surge Protector
- Multi-Signal Chart Recorder Outputs (0-5 vdc, 0-10 vdc, & 4-20 mA)
- Platform w/Combination Castor/Leg Levelers
- Moisture Proof Duplex
- Two Stage Regulators