

AUTOFLOW



CO₂ INCUBATORS



Best Products. Best Performance. Best Protection.

The Perfect Choice for Your Unique Application



	Model	Electronic Control System	Gas Control System	Temperature Control System	Humidity Control System	HEPA Filtration System	Configuration System
IR AutoFlow	NU-8500, NU-8700	Microprocessor	CO ₂ -Infrared	Water-Jacketed	Convection ⁶	Air/Gas ⁴	Single ³ Over-Under Double
US AutoFlow	NU-4750, NU-4850, NU-4950	Microprocessor	CO ₂ -Infrared ¹ O ₂ Fuel Cell ⁹	Water-Jacketed	Convection ⁶ Sensor ^{2,8}	Air/Gas ⁴	Single
DH AutoFlow	NU-5500	Microprocessor	CO ₂ -Infrared	Direct Heat	Convection ⁶	Air/Gas ⁷	Single ³
DHD AutoFlow	NU-5510	Microprocessor	CO ₂ -Infrared	Direct Heat w/ Sterilization Cycles	Convection ⁶	Air/Gas ⁷	Single ³
TC PureCell	NU-5100	Microprocessor	CO ₂ -Thermo-Conductivity	Direct Heat	Convection ⁶	Air/Gas ⁷	Single ³

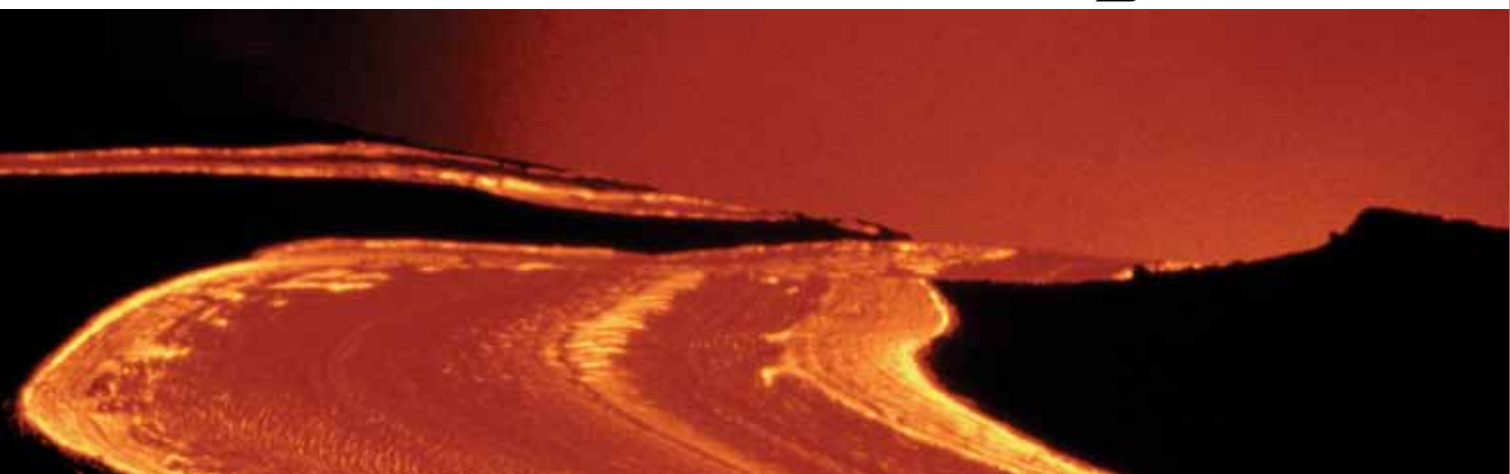
1] 2 or 3 gas control system
 2] Monitors actual chamber humidity. Alarms in low humidity condition indicating that water reservoir requires filling
 3] Right or left hand door swing – factory ordered

4] Internal recirculation system to ISO Class 5 clean air within 30 minutes
 5] Right or left hand door swing – field reversible
 6] Humidity pan (relative humidity to 95%)

7] Internal recirculation system to class 100 within 1 minute
 8] Humidity control w / NU-4850, NU-4950
 9] O₂ / N₂ control w / NU-4950



Registered to: ISO 9001:2000
 ISO 13485:2003



For more information contact NuAire, Inc. at 1.800.328.3352 or www.nuaire.com

Controlled Environments for Optimum Growth Conditions

- **The Sensitivity and Accuracy of Gas Control**

The AutoFlow incubators use a microprocessor-based, non-dispersive, digital solid-state infrared [IR] CO₂ sensor. This advanced design provides a very stable, drift-free output requiring less frequent calibrations.

- **The Precision of Electronic Microprocessor Controls**

AutoFlow incubators are run by a programmable microcontroller that samples input sensors, sets control outputs, and makes necessary corrections to the chamber environment. AutoFlow incubators provide quick and responsive recovery times.



- **The Long-Term Reliability and Protection of Automated and Redundant Back-Up Systems**

AutoFlow incubators provide dual sensor probes where appropriate, solid-state analyzers, multiple HEPA filtration systems, and the status alarms / outputs create a dependable, long-lasting scientific instrument.

- **The Flexibility of Available Options and Add-On Expansion Built into the System**

Additional shelves, RS-232 communication output, inner Lexan® doors, multi-signal analog outputs, tank switches, chart recorders, and moveable platforms are just a few of the available options and accessories.



Constant Contamination Control

- Unique HEPA Filter System
 - Filters Fresh Air Into the Pump
 - Filters CO₂ Gas from Tanks or House Systems
 - Filters Internal Chamber Continuously to ISO Class 5 Air Quality
 - Filters IR CO₂ Sensor Sample Air Returning to Chamber
 - Filters Air Between Air Pump and Inner Chamber
- Interior Chamber is Constantly Maintained at Positive Pressure Similar to an ISO Class 5 Cleanroom
- Dual Sterilization Cycle (DHD AutoFlow NU-5510 Only)
 - 95°C Humidified Decontamination
 - 145°C Dry Sterilization Cycle





NU-8700 / NU-8500

IR AutoFlow 8000 Series CO₂ Water-Jacketed Incubators

Specifications	Model	Chamber Volume (Ft. ³ / Liters)	Electrical*	Chamber Dimensions (W x H x D)	Exterior Dimensions (W x H x D)	Weight
	NU-8500	6.64 / 188	115 VAC / 60 Hz D: 100 VAC / 50-60 Hz E: 230 VAC / 50-60 Hz G: 220 VAC / 50-60 Hz	21.5 x 25.5 x 21 in. 546 x 647 x 535 mm	25.5 x 40.5 x 27 in. 648 x 1029 x 686 mm	Dry: 218 lbs. / 99 kg Full H₂O Jacket: 385 lbs. / 175 kg Shipping: 287 lbs. / 130 kg
	NU-8700	13.28 / 376	115 VAC / 60 Hz D: 100 VAC / 50-60 Hz E: 230 VAC / 50-60 Hz G: 220 VAC / 50-60 Hz	21.5 x 25.5 x 21 in. 546 x 647 x 535 mm	25.5 x 73.5 x 27 in. 648 x 1867 x 686 mm	Dry: 492 lbs. / 224 kg Full H₂O Jacket: 826 lbs. / 375 kg Shipping: 561 lbs. / 255 kg

*Specify NU-8500 / 8700, NU-8500D / 8700D, NU-8500E / 8700E, or NU-8500G / 8700G

Features

Standard Features

- 100% Stainless Steel Covered Interior Chamber
- 20 gal. / 75.7 L Capacity Water Jacket
- Removable Stainless Steel Shelves (4) [21 maximum] 19.25 in.² [489 mm²]
- Remote Alarm Output Contacts
- CO₂ Sample Port
- Water Level Sensor
- Adjustable Leg Levelers
- Access Port
- Fill Port and Drain Valve
- NuAire Incubator Control Electronics
- Full Size Water Pan
- 8 ft. / 2.5 m Electrical Cord

Optional Features

- Automatic CO₂ Tank Switch
- Communications Interface (RS-232)
- Internal Coil for Chilled Water
- Multi-Signal Analog Outputs: 0-5 VDC, 0-10 VDC, 4-20 mA
- 4 Inner Lexan® Doors
- Humidity Display (RH)

Temperature Control System

- Default Set Point:** 37 °C
- Chamber Temperature Range:** 18 °C to 55 °C (5 °C Above Ambient to 30 °C Ambient Max)
- Chamber Temperature Uniformity:** ± 0.2 °C at 37 °C
- Temperature Sensitivity:** ± 0.0125 °C

Electrical Requirements

Model NU-8500:
115 VAC / 60 Hz
Startup Power: 625 Watts
Running Power: 250 Watts
Heat Rejected: 14 BTU/min. [Other electrical voltages available.]

Model NU-8700:
115 VAC / 60 Hz
Startup Power: 1250 Watts
Running Power: 500 Watts
Heat Rejected: 28 BTU/min. [Other electrical voltages available.]

CO₂ Control System

- Default Set Point:** 5%
- CO₂ Range:** 0% to 20%
- CO₂ Accuracy:** ± 0.1%
- CO₂ Recovery:** 5.0 ± 0.2% Within 3.5 Minutes
- CO₂ Sensor Type:** Non-dispersive Digital Infrared CO₂ Sensor

Utility Connections

- Gas Connections:** .25" (6.3 mm) Tubing Connections
- Gas Input Pressure:** 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.





NU-4750

NU-4850

NU-4950

US AutoFlow 4000 Series CO₂ Water-Jacketed Incubators

Specifications	Model	Chamber Volume (Ft. ³ / Liters)	Electrical*	Chamber Dimensions (W x H x D)	Exterior Dimensions (W x H x D)	Weight
	NU-4750	6.64 / 188	115 VAC / 60 Hz	21.5 x 25.5 x 21 in.	31.0 x 34.0 x 25.5 in.	Dry: 222 lbs. / 101 kg
D: 100 VAC / 50-60 Hz			546 x 647 x 535 mm	787 x 864 x 648 mm	Full H₂O Jacket / RH system: 392 lbs. / 178 kg	
E: 230 VAC / 50-60 Hz				Shipping: 291 lbs. / 132 kg		
G: 220 VAC / 50-60 Hz						
	NU-4850	6.64 / 188	115 VAC / 60 Hz	21.5 x 25.5 x 21 in.	31.0 x 34.0 x 25.5 in.	Dry: 232 lbs. / 105 kg
D: 100 VAC / 50-60 Hz			546 x 647 x 535 mm	787 x 864 x 648 mm	Full H₂O Jacket / RH system: 412 lbs. / 188 kg	
E: 230 VAC / 50-60 Hz				Shipping: 301 lbs. / 137 kg		
G: 220 VAC / 50-60 Hz						
	NU-4950	6.64 / 188	115 VAC / 60 Hz	21.5 x 25.5 x 21 in.	31.0 x 34.0 x 25.5 in.	Dry: 232 lbs. / 105 kg
D: 100 VAC / 50-60 Hz			546 x 647 x 535 mm	787 x 864 x 648 mm	Full H₂O Jacket / RH system: 412 lbs. / 188 kg	
E: 230 VAC / 50-60 Hz				Shipping: 301 lbs. / 137 kg		
G: 220 VAC / 50-60 Hz						

*Specify NU-4750, 4850, 4950 / NU-4750D, 4850D, 4950D / NU-4750E, 4850E, 4950E / NU-4750G, 4850G, 4950G

Features

Standard Features

- 100% Stainless Steel Covered Interior Chamber
- 20 gal. / 75.7 L Capacity Water Jacket
- Removable Stainless Steel Shelves (4) [21 maximum] 19.25 in.² [489 mm²]
- Remote Alarm Output Contacts
- CO₂ Sample Port
- Water Level Sensor
- Adjustable Leg Levelers
- Access Port
- Fill Port and Drain Valve
- NuAire Incubator Control Electronics
- Full Size Water Pan
- 8 ft. / 2.5 m Electrical Cord

Optional Features

- Automatic CO₂ Tank Switch
- Communications Interface (RS-232)
- Internal Coil for Chilled Water
- Multi-Signal Analog Outputs: 0-5 VDC, 0-10 VDC, 4-20 mA
- 4 Inner Lexan® Doors
- Humidity Display (RH) and control (NU-4850 and NU-4950)
- O₂ Control System (NU-4950)

Temperature Control System

- Default Set Point:** 37 °C
- Chamber Temperature Range:** 18 °C to 55 °C (5 °C Above Ambient to 30 °C Ambient Max)
- Chamber Temperature Uniformity:** ± 0.2 °C at 37 °C
- Temperature Sensitivity:** ± 0.0125 °C

Electrical Requirements

- 115 VAC / 60 Hz
- Startup Power:** 625 watts
- Running Power:** 250 watts, 60 Hz
- Heat Rejected:** 14 BTU/min. [Other electrical voltages available.]

Utility Connections

- Gas Connections:** .25" (6.3 mm) Tubing Connections
- Gas Input Pressure:** 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.

CO₂ Control Systems

- CO₂ (NU-4750 / 4850 / 4950)**
- Default Set Point:** 5%
- CO₂ Range:** 0 to 20%
- CO₂ Accuracy:** ± 0.1%
- CO₂ Recovery:** 5.0 ± 0.2%
- CO₂ Sensor Type:** Non-dispersive Digital Infrared CO₂ Sensor

RH (NU-4850 / 4950)

- Default Set-Point:** 90%
- RH Range:** 5% Above Ambient to 95%
- RH Accuracy:** ± 3%
- RH Recovery:** 95% ± 3%

O₂ (NU-4950)

- Default Set-Point:** 21%
- O₂ Range:** 2 to 21%
- O₂ Accuracy:** ± 1.0%
- O₂ Recovery:** 5% ± 2%





NU-5500

DH AutoFlow 5500 CO₂ Direct Heat Incubator

Specifications	Model	Chamber Volume (Ft. ³ / Liters)	Electrical*	Chamber Dimensions (W x H x D)	Exterior Dimensions (W x H x D)	Weight
	NU-5500	6.64 / 188	115 VAC / 60 Hz	21.5 x 25.5 x 21.0 in.	25.5 x 39.5 x 26 in.	208 lbs. / 94.35 kg
			E: 230 VAC / 50-60 Hz	546 x 648 x 533 mm	648 x 1003 x 660 mm	
			G: 220 VAC / 50-60 Hz			

*Specify NU-5500 / NU-5500E / NU-5500G

Features

Standard Features

- 100% Stainless Steel Covered Interior Chamber
- Foil Heaters Attached to Chamber Outer Walls
- Removable Stainless Steel Shelves (4) [17 maximum] 19.25 in.² [489 mm²]
- Remote Alarm Output Contacts
- CO₂ Sample Port
- Adjustable Leg Levelers
- Access Port
- Digital Infrared CO₂ Gas Sensor
- Water Pan
- Microcomputer-Based Controls
- Replaceable HEPA Filter
- Replaceable Fan Wheel
- 8 ft. / 2.5 m Electrical Cord

Optional Features

- Automatic CO₂ Tank Switch
- Communications Interface (RS-232)
- Multi-Signal Analog Outputs: 0-5 VDC, 0-10 VDC, 4-20 mA
- Additional Shelves
- Surge Protector

Temperature Control System

- Temperature Range:** 18°C to 55°C (5°C Above Ambient to 30°C Ambient Max)
- Temperature Sensitivity:** ± .125°C
- Temperature Uniformity:** ± 0.3°C at 37°C
- Temperature Accuracy:** ± 0.1°C
- Temperature Recovery:** 0.3°C / min. (Average)
- Temperature Display Resolution:** 0.1°C

Electrical Requirements

- 115 VAC / 60 Hz
- Startup Power:** 345 watts
- Running Power:** 175 watts
- Heat Rejected:** 10 BTU/min. [Other electrical voltages available.]

Utility Connections

- Gas Connections:** .25" (6.3 mm) Tubing Connections
- Gas Input Pressure:** 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.

CO₂ Control Systems

- CO₂ Range:** 0.1 to 20%
- CO₂ Accuracy:** ± 0.1%
- CO₂ Recovery:** 5.0% ± 0.2% In Four Minutes
- CO₂ Display Resolution:** ± 0.1%
- CO₂ Sensor Type:** Non-dispersive Digital Infrared CO₂ Sensor



[A]



[B]

[A] A 99.98% efficient HEPA filter maintains Constant Contamination Control (C3) in the growth chamber.

[B] Dual temperature sensor probes, mounted just under the inflow to the HEPA filter controlling the chamber environment.





NU-5510

DHD AutoFlow 5510 CO₂ Direct Heat Incubator with Dual Sterilization Cycles

Specifications	Model	Chamber Volume (Ft. ³ / Liters)	Electrical*	Chamber Dimensions (W x H x D)	Exterior Dimensions (W x H x D)	Weight
	NU-5510	6.65 / 188.51	115 VAC / 60 Hz	21.5 x 25.5 x 21.0 in.	25.5 x 39.5 x 26 in.	208 lbs. / 94.35 kg
			E: 230 VAC / 50-60 Hz	546 x 648 x 533 mm	648 x 1003 x 660 mm	
			G: 220 VAC / 50-60 Hz			

*Specify NU-5510 / NU-5510E / NU-5510G

Features

Standard Features

- 100% Stainless Steel Covered Interior Chamber
- Foil Heaters Attached to Chamber Outer Walls
- Removable Stainless Steel Shelves (4) [17 maximum] 19.25 in.² [489 mm²]
- Remote Alarm Output Contacts
- CO₂ Sample Port
- Adjustable Leg Levelers
- Access Port
- Digital Infrared CO₂ Gas Sensor
- Water Pan
- Microcomputer-Based Controls
- Replaceable HEPA Filter
- Replaceable Fan Wheel
- 8 ft. / 2.5 m Electrical Cord
- Dual Decontamination Cycles**
 - 95°C Wet Decontamination Cycle
 - 145°C Dry Decontamination Cycle

Optional Features

- Automatic CO₂ Tank Switch
- Communications Interface (RS-232)
- Multi-Signal Analog Outputs: 0-5 VDC, 0-10 VDC, 4-20 mA
- Additional Shelves
- Surge Protector

Temperature Control System

- Temperature Range:** 18°C to 55°C (5°C Above Ambient to 30°C Ambient Max)
- Temperature Sensitivity:** ± .125°C
- Temperature Uniformity:** ± 0.3°C at 37°C
- Temperature Accuracy:** ± 0.1°C
- Temperature Recovery:** 0.3°C / min. (Average)
- Temperature Display Resolution:** 0.1°C

Electrical Requirements

- 115 VAC, 50/60 Hz
- Startup Power: 345 watts
- Running Power: 175 watts
- Heat Rejected: 10 BTU/min.
- Decon. Cycle Power: 1150 watts [Other electrical voltages available.]

Utility Connections

- Gas Connections: .25" (6.3 mm) Tubing Connections
- Gas Input Pressure: 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.

CO₂ Control System

- CO₂ Range:** 0.1 to 20%
- CO₂ Accuracy:** ± 0.1%
- CO₂ Recovery:** 5.0% ± 0.2% in Four Minutes.
- CO₂ Display Resolution:** ± 0.1%
- CO₂ Sensor Type:** Non-dispersive Digital Infrared CO₂ Sensor

Decontamination Cycles

- 95°C Humidified Cycle**
- 95°C Humidified Decontamination Cycle Eradicates Contaminating Agents
- Advanced Chamber Design Allows for Shorter Heat Up and Cool Down Cycles; Complete Cycle Takes 14 Hours to Run
- Remote CO₂ IR Sensor Does Not Need to be Removed or Recalibrated
- 145°C Dry Cycle Features**
- 145°C High Temperature Dry Decontamination Cycle Eradicates Contaminating Agents
- Complete Cycle Takes 10 Hours to Run
- Remote CO₂ IR Sensor Does Not Need to be Removed or Recalibrated



[A]

[A] Coved interior corners prevent contaminants from becoming trapped in the chamber.





NU-5100

TC PureCell 5100 CO₂ Direct Heat Incubator

Specifications	Model	Chamber Volume (Ft. ³ / Liters)	Electrical*	Chamber Dimensions (W x H x D)	Exterior Dimensions (W x H x D)	Weight
	NU-5100	4.4 / 125	115 VAC / 60 Hz	18.0 x 22.0 x 19.0 in.	23.0 x 30.0 x 23.4 in.	135 lbs. / 62.3 kg
			E: 230 VAC / 50-60 Hz	457 x 559 x 533 mm	584 x 762 x 595 mm	
			G: 220 VAC / 50-60 Hz			

*Specify NU-5100 / NU-5100E / NU-5100G

Features

Standard Features

- 100% Stainless Steel Covered Interior Chamber
- Foil Heaters Attached to Chamber Outer Walls
- Removable SST Shelves (3), Maximum Shelf Capacity (16)
- Remote Alarm Output Contacts
- CO₂ Sample Port
- Adjustable Leg Levelers
- Access Port
- Water Pan
- Microcomputer-Based Controls
- Replaceable HEPA Filter
- Replaceable Fan Wheel
- 8 ft. / 2.5 m Electrical Cord

Optional Features

- Automatic CO₂ Tank Switch
- Communications Interface (RS-232)
- Multi-Signal Analog Outputs: 0-5 VDC, 0-10 VDC, 4-20 mA
- Additional Shelves
- Surge Protector

Temperature Control System

- Temperature Range:** 18°C to 55°C (5°C Above Ambient to 30°C Ambient Max)
- Temperature Uniformity:** ± 0.5°C at 37°C
- Temperature Accuracy:** ± 0.25°C
- Temperature Display Resolution:** 0.1°C

Electrical Requirements

- 115 VAC, 50/60 Hz
- Startup Power:** 130 watts
- Running Power:** 72 watts
- Heat Rejected:** 4.1 BTU/min. [Other electrical voltages available.]

Utility Connections

- Gas Connections:** .25" (6.3 mm) Tubing Connections
- Gas Input Pressure:** 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.

CO₂ Control System

- CO₂ Range:** 0.1 to 20%
- CO₂ Accuracy:** ± 0.25%
- CO₂ Display Resolution:** ± 0.1%
- CO₂ Sensor Type:** Digital Thermo-conductivity



Accessories



- NU-1555** Stainless Steel Water Pan (Water Jacket)
- NU-5560** Stainless Steel Water Pan (Direct Heat)
- NU-1556** Replacement Tubing Kit
- NU-1557** Additional Stainless Steel Shelves



- NU-1564** CO₂ Regulator, Two Stage
- NU-1590** CO₂ Regulator, Single Stage
- NU-3557** O₂ Regulator, Two Stage
- NU-3556** N₂ Regulator, Two Stage



- NU-1574** Platform w/ Leveling Casters
- NU-1553** Stacking Rack (Single)



- NU-1575** Moisture-Proof Duplex Outlet
- NU-2568** Isobar® Surge Protector
- SV-7008** 15A/20A 2 Outlet Surge Protector
- SV-7006** 15A/20A 6 Outlet Surge Strip



- NU-1550** Automatic Tank Switch
- NU-1552** CO₂ Tank Alarm



- NU-1559** CO₂ Analyzer Fyrite Kit
- NU-1561** CO₂ Analyzer Fluid
- NU-3550** O₂ Analyzer Fyrite Kit
- NU-3551** O₂ Analyzer Fluid

Discover more accessories online at www.scientificvisions.com



For more information contact NuAire, Inc. at 1.800.328.3352 or www.nuaire.com

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