

AUTOFLOW



CO₂ INCUBATORS



Best Products. Best Performance. Best Protection.

The Perfect Choice for Your Unique Application



NU-8500



NU-8700



NU-4750



NU-5500



NU-5510



NU-5100

	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%)

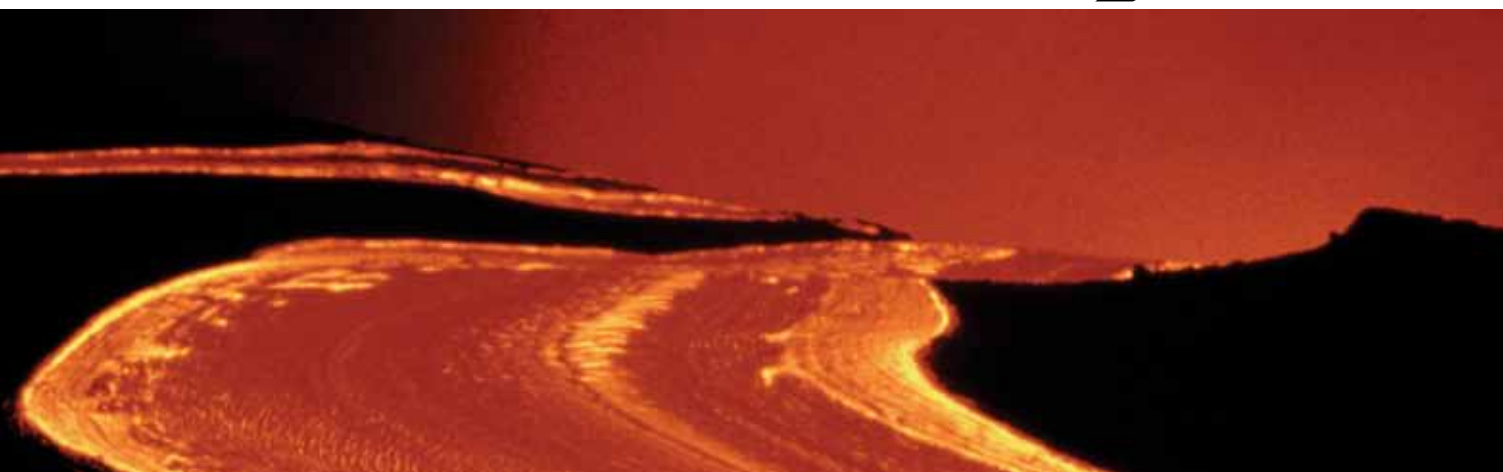
7] Internal recirculation system to class 100 within 1 minute

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 Coved 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 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	31.0 x 34.0 x 25.5 in. 787 x 864 x 648 mm	Dry: 222 lbs. / 101 kg Full H₂O Jacket / RH system: 392 lbs. / 178 kg Shipping: 291 lbs. / 132 kg
	NU-4850	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	31.0 x 34.0 x 25.5 in. 787 x 864 x 648 mm	Dry: 232 lbs. / 105 kg Full H₂O Jacket / RH system: 412 lbs. / 188 kg Shipping: 301 lbs. / 137 kg
	NU-4950	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	31.0 x 34.0 x 25.5 in. 787 x 864 x 648 mm	Dry: 232 lbs. / 105 kg Full H₂O Jacket / RH system: 412 lbs. / 188 kg Shipping: 301 lbs. / 137 kg

*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 E: 230 VAC / 50-60 Hz G: 220 VAC / 50-60 Hz	21.5 x 25.5 x 21.0 in. 546 x 648 x 533 mm	25.5 x 39.5 x 26 in. 648 x 1003 x 660 mm	208 lbs. / 94.35 kg
						*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

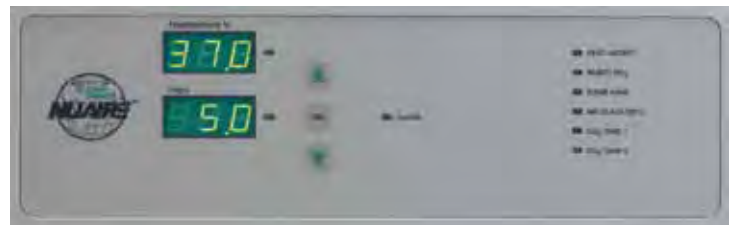
Gas Connections: .25" (6.3 mm) Tubing Connections
Gas Input Pressure: 20 PSIG (1.4 BAR) Input Pressures Maximum. Two-stage Gas Regulators Required.

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]



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



[B]

[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

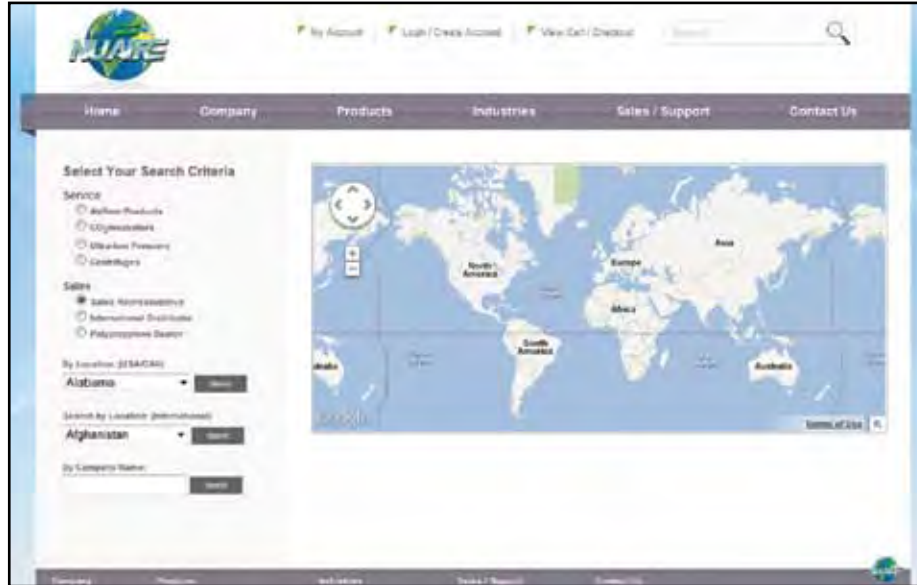
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