

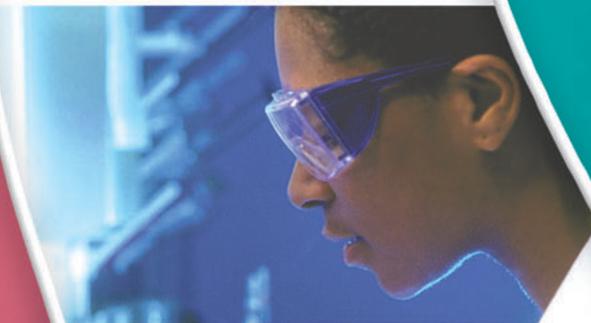


**New Brunswick Scientific**

*Where Quality and Innovation Have Become Tradition*

## DIRECT HEAT CO<sub>2</sub> INCUBATORS

*FOR SUPERIOR PERFORMANCE & CONVENIENCE.*





**New Brunswick Scientific**  
*Where Quality and Innovation Have Become Tradition*

# NBS CO<sub>2</sub> Incubators

*One of a full range of innovative products  
for culture growth, detection and storage.*

New Brunswick Scientific's CO<sub>2</sub> Incubators have been improved to provide much more usable chamber space for greater capacity in the same footprint! Add a unique, six-sided direct-heat fanless design that achieves a stable and homogenous culture environment, and new seamless chamber with rounded corners and copper interior option, these incubators optimize culture conditions to satisfy the most demanding requirements of scientists.

Four models provide a range of sizes and price points:

**Innova<sup>®</sup> CO-48 & CO-170** — feature an advanced controller and exceptionally large display screen making it easy to read and program setpoints, monitor chamber conditions, historical data, alarms and diagnostics, as well as access built-in help menus. Numerous automated functions simplify operation for added convenience. Choose either our full-sized CO-170 or personal-sized CO-48.

**Excella CO-170** — same capacity as the Innova CO-170, this incubator's simple controls and smaller display screen provide an economical alternative to cost-conscious labs.

**Innova CO-14** — this miniature incubator allows you to easily isolate sensitive samples, avoiding cross-contamination issues. Designed for the rigorous requirements of *in-vitro* fertilization, it provides simple control with sophisticated design for a truly personalized culture environment.



**Innova CO<sub>2</sub> Incubators** offer a wide range of advanced features including a built-in viewing window to avoid disturbing samples, tri-gas control option to optimize growth, and high-temperature decontamination option to protect your cultures. **Innova CO-170** is shown.



**Personal-Sized Innova Model CO-48** yields a 1.7 cu. ft. chamber in an exceptionally small footprint.



**Excella ECO-170** provides reliable performance at an economical price.



**Innova Model CO-14** — At just 12.3" wide, this uniquely-sized miniature incubator lets you isolate sensitive samples for complete peace of mind.

# Innova CO-48 & CO-170 Incubators — Superior Control.

## Capacity & Size

### Innova CO-48 Personal Size Incubator:

- **Capacity:** 48 L – 1.7 cu. ft.
- **External:** 19.1" W x 18.7" D x 25.4" H  
(48.4 x 47.5 x 64.5 cm)

### Innova CO-170 Full Size Incubator:

- **Capacity:** 170 L – 6.0 cu. ft.
- **External:** 27" W x 26.4" D x 33.3" H  
(68.5 x 67 x 84.5 cm)

## Performance

- **Unique Six-Sided Direct Heating** ensures stable temperature control, excellent uniformity, and rapid recovery with no overshoot.
- **Extra-Large Display & Intuitive Controls Simplify Operation.** Features help text, real-time data graphing, programmable alarms, diagnostics & more.
- **Redesigned CO-170 Provides More Usable Chamber Space than Comparably-Sized Incubators!** Taller, less deep design provides convenient access to all samples, and 17% more usable space than ever before.
- **Elimination of Fan & Ductwork** increases usable chamber space & simplifies cleaning. Gentle, fanless convection circulation provides excellent chamber homogeneity, eliminates vibration & reduces sample evaporation.
- **Infrared [IR] CO<sub>2</sub> Sensor** provides superior accuracy and stability over conventional thermal-conductivity sensors.
- **High Humidity – Dry Wall Chamber** achieves 95% RH, minimizing sample evaporation. Independent door heater eliminates condensation on inner glass surfaces.
- **Use On or Under the Bench, or Stacked Two High.** Ergonomically-positioned controls & display facilitate multi-position operation. Accessory stacking stands with feet or casters optimize height & maneuverability.<sup>†</sup>

## Convenience

- **72-Hour Data Storage.** CO<sub>2</sub> concentration, temperature, alarms and door openings are automatically recorded for on-screen display. Optional communications package enables data logging to your PC.
- **High-Temperature Decontamination Mode Simplifies Maintenance\*.** Uses 120°C dry heat to decontaminate the chamber, all internal sensors, racks & humidity pan.
- **CO<sub>2</sub> Sensor Auto-Zero** automatically adjusts baseline for optimum accuracy. User-programmable. Requires no manual measurements nor operator intervention.
- **On-Screen Help.** Never lose your operating manual instructions again! Comprehensive text files walk you through set-up, programming and diagnostics.
- **Large Viewing Window with Heated Door** reduces



*Innova CO-48 (left) and Innova CO-170.*

the need to disturb chamber contents. (See photos p. 3.)

- **Seamless Chamber, Rounded Corners** and external front flange prevent contamination and simplify cleaning.
- **Easily Removable Shelving.** Stainless rack & shelves are quickly removable, without tools. Four shelves in CO-170 and three in CO-48 are standard. Added shelving optional.
- **Space-Saving – Convenient Size & Weight.** Compared to air- or water-jacketed designs, direct heating decreases overall size and weight, while increasing chamber capacity. Simplifies setup, maintenance and relocation.
- **Built-In System Diagnostics** help you identify system status & expedite on-site service.

## Dependability

- **Comprehensive Two-Level Alarm System** includes audio and screen-displayed alarms for system status, with programmable alarms for CO<sub>2</sub> and temperature set-points, delays, duration & more.
- **Password Protection** ensures the integrity of all programmable system settings.
- **Backed by a Comprehensive Warranty** on parts and labor, and factory-trained field service support.

## Safety

- **Separate Over-Temperature Cutout** prevents overheating, in event of a control failure.
- **Supervisory Microprocessor** ensures system integrity by verifying main processor function.
- **Non-Volatile Memory** guarantees data integrity, regardless of length of time or frequency of power interruption.
- **Alarm Setpoints Reset Automatically** to  $\pm 0.5^\circ\text{C}$  and  $+ 0.5\%$  above & below the new temp./CO<sub>2</sub> setpoints.
- **HEPA Filter on CO<sub>2</sub> Inlet** protects cultures from potential contamination sources.

<sup>†</sup> Compared to all models on the market, as of Jan. 2006. \* Optional.

<sup>‡</sup> Note: Incubators should never be placed directly on the floor. Under-bench carts, as well as mobile carts and/or stacking kits for double stacking, are available.

# Ultimate Convenience. Simply Better.

## Incubator Options

Pre-Configured Systems Allow You to Mix and Match All the Most Popular Options:

- **High-Temperature Decontamination.**
- **O<sub>2</sub> Control (1 - 19%).**
- **Communications Package**, consisting of an **Access Port Pass-Through** for sensors & probes; **Remote Alarm Contacts** to external user-supplied building alarm/monitoring system; and **RS-232 Port with InnovaLog™ Data Logging Software** for downloading data to be your PC.
- **Other Options And Accessories** may also be available. Ask your NBS sales representative for details.



Innova Models CO-48 (above) and CO-170 (below) feature a cleverly-designed viewing window in the heated glass door, so you can check on cultures without altering chamber conditions. When chamber access is needed, a single door speeds entry.

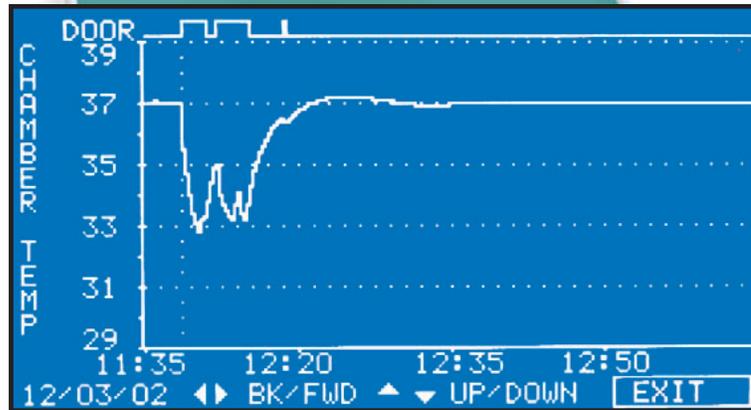


Uniquely flexible eight-position shelf is standard on Innova CO-170 and optional on Excella CO-170.

Large Display.  
Intelligent Controls.



Large back-lit displays are easy to read. Above, shown actual size — 4.75" x 2.5" (12 cm x 6.5 cm).



# Economical Excella ECO-170 & the Micro Innova CO-14

## Capacity & Size

### Excella ECO-170 Full-Sized, Economical Incubator:

- **Capacity:** 170 L – 6.0 cu. ft.
- **External:** 27" W x 26.4" D x 33.3" H  
(68.5 x 67 x 84.5 cm)

### Innova CO-14 Micro-Sized Incubator:

- **Capacity:** 14 L – 0.5 cu. ft.
- **External:** 12.3" W x 11.2" D x 17.8" H  
(31.3 x 28.5 x 45.1 cm)

## Performance

- **Unique Six-Sided Direct Heating System** ensures stable temperature control, excellent uniformity, and rapid recovery with no overshoot.
- **Gentle, Fanless Convection Circulation** provides excellent chamber homogeneity, eliminates vibration & reduces sample evaporation. Increases usable chamber space & simplifies cleaning by eliminating fan & ductwork.
- **Infrared [IR] CO<sub>2</sub> Sensor** provides superior accuracy and stability over conventional thermal-conductivity sensors.
- **Simple Display & Easy-to-Use Controls** feature a user-friendly 4-button keypad and CO<sub>2</sub> & temperature display, with audio/visual alarms.
- **High Humidity – Dry Wall Chamber** achieves 95% RH, minimizing sample evaporation. Independent door-heater eliminates condensation on inner door surfaces.
- **Use On or Under the Bench, or Stacked Two High.** Controls & display are ergonomically positioned for convenient use<sup>◇</sup>. (CO-14 includes foot recesses in lid for double-stacking.)

## Convenience

- **Seamless Chamber, Rounded Corners** and external front flange simplify cleaning and prevent contamination.
- **Direct Heat Design Simplifies Setup, Maintenance and Relocation** compared to air- or water-jacketed designs.
- **Single-Door Entry System** facilitates access to chamber. (Inner glass doors available as an option.)
- **Four-Position Shelving System.** Stainless wire rack shelf support and four\* shelves are easily and completely removed without tools. (\*Two shelves, Model CO-14.) Additional shelving available.



The Excella ECO-170 provides a full 6.0 cu. ft. chamber at an economical price. For isolating sensitive samples, micro-sized CO-14 fits the bill.

## Dependability

- **User Programmable CO<sub>2</sub> & Temperature Alarms** have selectable settings for setpoints, delays & duration.
- **Comprehensive Audible and Visible Alarms** monitor every sensor and warn of out-of-limit status.
- **Backed by a Comprehensive Warranty** on parts and labor, and factory-trained field service support.

## Safety

- **Separate Temperature Cutout** prevents over-heating condition, in event of a control failure.
- **Non-Volatile Memory** guarantees data integrity, regardless of length of time or frequency of power interruption.
- **Alarm Setpoints Reset Automatically** to  $\pm 0.5^{\circ}\text{C}$  and  $\pm 0.5\%$  above & below the new temp./CO<sub>2</sub> setpoints.
- **HEPA Filter on CO<sub>2</sub> Inlet** provides added protection from potential contamination sources.

## Options

- **High-Temperature Decontamination, Excella ECO-170.**
- **O<sub>2</sub> Control, 1 - 19%, Innova CO-14.**
- **Communications Package**, consisting of an **Access Port Pass-Through** for sensors & probes; **Remote Alarm Contacts** to external user-supplied building alarm/monitoring system; and **RS-232 Port with InnovaLog Data Logging Software** for downloading data to be your PC .
- **Inner Glass Door and Other Options And Accessories** are available. Ask your NBS sales representative for details.

<sup>◇</sup> Note: Incubators should never be placed directly on the floor — under-bench mobile carts and/or floor stand for double stacking are available.

# Ordering Information, CO-48, CO-170, CO-14 & ECO-170\*

Incubators **	Innova CO-48	Innova CO-170	Innova CO-14	Excella ECO-170
Incubator, 120 V 50/60 Hz	M1300-0000	M1306-0000	M1314-0000	M1311-0000
Incubator, 120 V, High-Temp. Decontamination	M1300-1000	M1306-1000	N/A	M1311-1000
Incubator, 120 V, 1 - 19% Oxygen Control	M1300-0200	M1306-0200	M1314-0200	N/A
Incubator, 120 V, Communications Package **	M1300-0010	M1306-0010	M1314-0100	M1311-0010
Incubator, 120 V, 1 - 19% Oxygen Control & High Temp.	M1300-1200	M1306-1200	N/A	N/A
Incubator, 230 V, 50/60 Hz	M1300-0002	M1306-0002	M1314-0002	M1311-0002
Incubator, 230 V, High-Temp. Decontamination	M1300-1002	M1306-1002	N/A	N/A
Incubator, 230 V, 1 - 19% Oxygen Control	M1300-0202	M1306-0202	M1314-0200	N/A
Incubator, 230 V, Communications Package **	M1300-0012	M1306-0012	M1314-0100	M1311-0012
Incubator, 230 V, 1 - 19% Oxygen Control & High Temp.	M1300-1202	M1306-1202	N/A	N/A
<b>** Communications Packages Listed Above Include:</b>				
25 mm Access Port (10 mm on CO-14) • Relay Contacts for Building Management Systems InnovaLog™ Data Logging Software • RS-232 Port, required for InnovaLog Software				
Custom Options ◊				
O <sub>2</sub> Control, 1 - 19%	P0628-5250	P0628-5390	P0628-6290	N/A
Tri-Gas/O <sub>2</sub> Control, 1 - 95%	P0628-5260	P0628-5400	N/A	N/A
O <sub>2</sub> Control, 0.1 - 19%	P0628-6280	P0628-5410	N/A	N/A
Cooling Unit (below ambient)	N/A	P0628-5430	N/A	N/A
Copper Chamber	N/A	P0628-5612	N/A	P0628-5611
Inner Glass Door	N/A	P0628-6400	P0628-6210	P0628-6400
Split Inner Doors - 2	P0628-5330	N/A	N/A	N/A
Split Inner Doors - 4	N/A	P0628-6410	N/A	P0628-6410
Split Inner Doors - 8	N/A	P0628-6420	N/A	N/A
Humidity Display	P0628-5280	P0628-5470	N/A	N/A
Humidity Display for High Temperature models	N/A	P0628-5480	N/A	N/A
Humidity Tray Warning System	P0628-5290	P0628-5490	N/A	N/A
Internal Sealed Power Receptacle	P0628-5350	P0628-5560	N/A	N/A
Accessories				
CO <sub>2</sub> Bottle Automatic Changeover Controller	P0628-5000	P0628-5000	P0628-5000	P0628-5000
CO <sub>2</sub> Supply Line Filters, HEPA (pack of five)	P0628-5020	P0628-5020	P0628-5020	P0628-5020
CO <sub>2</sub> In-line Pressure Regulator	P0628-5030	P0628-5030	P0628-5030	P0628-5030
Air-Zero Filters, HEPA, for auto-zero function (in pairs)	P0628-5060	P0628-5060	N/A	N/A
CO <sub>2</sub> Gas Analyzer Kit	P0628-5040	P0628-5040	P0628-5040	P0628-5040
10 Spare CO <sub>2</sub> Gas Analyzer Tubes	P0628-5050	P0628-5050	P0628-5050	P0628-5050
Stacking Kit or Stand for 2 Units	P0628-5090	P0628-6270 ††	P0628-6230 †	P0628-6270 ††
Below-Bench Caster Set	N/A	P0628-6160	N/A	P0628-6160
Additional Shelf, non-perforated	P0628-5070 ◊	P0628-6241	P0628-6180	P0628-6241 ◊
Additional Shelf, perforated	P0628-5080 ◊	P0628-6251	N/A	P0628-6251 ◊
Multi-Position Wire Shelf Rack	P0628-5100	STANDARD	P0628-6170	N/A
Additional Humidity Tray	P0628-5940 (0.5 liter)	P0628-6260 (2.5 liter)	P0628-6200 (0.3 liter)	P0628-6260 (2.5 liter)
Electronic CO <sub>2</sub> Gas Analyzer	P0628-6150	P0628-6150	P0628-6150	P0628-6150

\*\* Additional incubator configurations are also available. Ordering them, or ordering custom options, will affect delivery and shipping. Ask your NBS Sales Rep for quotation.

\* Part numbers subject to change without notice. ◊ Must be factory installed. ◊ Requires multi-position shelf rack accessory.

†† Includes castered stand and stacking kit. † This is a stacking bracket, not a stand.

# Specifications, CO-48, CO-170, CO-14 & ECO-170\*

		Innova CO-48			Innova CO-170			Innova CO-14			Excella ECO-170			
<b>Chamber</b>	Volume	1.7 cu. ft. / 48 liters			6.0 cu. ft. / 170 liters			0.5 cu. ft. / 14 liters			6.0 cu. ft. / 170 liters			
<b>Temperature Management</b>	Range	1°C above ambient to 50°C			1°C above ambient to 50°C			5°C above ambient to 50°C			1°C above ambient to 50°C			
	Control	± 0.1°C			± 0.1°C			± 0.1°C			± 0.1°C			
	Stability	± 0.1°C			± 0.1°C			± 0.1°C			± 0.1°C			
	Uniformity	± 0.2°C			± 0.2°C			± 0.2°C			± 0.3°C			
<b>CO<sub>2</sub> Gas Management</b>	Range	0.2 – 20%			0.2 – 20%			0.2 – 20%			0.2 – 20%			
	Control	± 0.1%			± 0.1%			± 0.1%			± 0.1%			
	Stability	± 0.2%			± 0.2%			± 0.2%			± 0.3%			
	Uniformity	± 0.1%			± 0.1%			± 0.1%			± 0.2%			
	Recovery	>0.7% per minute			>0.7% per minute			>1.5% per minute			>0.7% per minute			
	Connections	~ 1/4" (6mm) tubing			~ 1/4" (6mm) tubing			~ 1/4" (6mm) tubing			~ 1/4" (6mm) tubing			
	Gas Service Pressure	5 psi / 0.35 bar			5 psi / 0.35 bar			5 psi / 0.35 bar			5 psi / 0.35 bar			
<b>Humidity</b>	Reservoir	removable stainless tray			removable stainless tray			removable stainless tray			removable stainless tray			
	Volume	0.5 liters			2.5 liters			0.3 liters			2.5 liters			
	Control	95% @37°C			95% @37°C			>90% @37°C			95% @37°C			
<b>Shelves</b>	Dimensions per Shelf †	13.75" x 10.1" (34.9 x 25.7 cm)			20.5" x 16.5" (52.1 x 41.9 cm)			8.5 x 7.25" (21.6 x 18.4 cm)			20.5" x 16.5" (52.1 x 41.9 cm)			
	Shelves Provided	3			4			2			4			
	Adjustability (∞ option only)	6 position ∞			8 position			4 position ∞			8 position ∞			
<b>Dimensions</b> ◇		<b>H</b>	<b>W</b>	<b>D</b>	<b>H</b>	<b>W</b>	<b>D</b>	<b>H</b>	<b>W</b>	<b>D</b>	<b>H</b>	<b>W</b>	<b>D</b>	
	Chamber	inch	15.8	15.8	12.1	27.3	21.3	17.5	11.6	9.2	8.2	27.3	21.3	17.5
	Chamber	cm	40.1	40.1	30.8	69.3	54	44.4	29.2	23.3	20.8	69.3	54	44.4
	External	inch	25.4	19.1	18.7	33.3	27	26.4	17.8	12.3	11.2	33.3	27	26.4
	External	cm	64.5	48.4	47.5	84.5	68.5	67	45.1	31.3	28.5	84.5	68.5	67
	Shipping Container	inch	33.9	24.0	23.0	37.4	28.5	29.9	21.1	17.1	16.3	37.4	29.7	29.9
	Shipping Container	cm	86.0	61.0	58.5	95.0	72.5	76.0	53.5	43.5	41.5	95.0	72.5	76.0
<b>Electrical</b>	Voltage	120 V & 230 V, 50/60 Hz			120 V & 230 V, 50/60 Hz			120 V & 230 V, 50/60 Hz			120 V & 230 V, 50/60 Hz			
	Power	500 watts			500 watts			500 watts			500 watts			
	Power, High Temp. Option	1,000 watts			1,000 watts			N/A			1,000 watts			
	Consumption †	< 0.1 kWh			< 0.1 kWh			< 0.06 kWh			< 0.1 kWh			
† Energy required to maintain chamber at 37°C at ambient temperature of 20 - 25°C														
<b>Weight</b>	Net	71 lbs / 32 kg			183 lbs / 83 kg			30 lbs / 13.5 kg			163 lbs / 74 kg			
	Shipping	110 lbs / 50 kg			247 lbs / 112 kg			62 lbs / 28 kg			247 lbs / 112 kg			
<b>Warranty</b>	Coverage **	Comprehensive 2-year warranty on parts and labor									1-year parts and labor			
	Maintenance Contracts	Ask your NBS sales representative about our extended maintenance contracts												
<b>Certification</b>	CE Certified													

\* Specifications subject to change without notice. Image of male scientist on cover courtesy of Univ. of Adelaide Media.

◇ Height includes feet at lowest setting. † Wide x deep. \*\* Outside the U.S., contact your local NBS sales rep for warranty info.



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