



## Thermo Scientific Forma -86°C Chest and Upright Freezers

Sample Storage Products You Can Trust



# Everyday sample storage protection.

State-of-the-art, patented refrigerated system improves temperature control for more consistent temperature cycling and increases reserve BTUH capacity, resulting in a more stable temperature sample.

Sturdy, solid, stainless steel shelving to support a full product load.

Easy-to-clean interior: 8600 and 900 Series freezers feature a stainless steel interior.

Four interior compartment doors in uprights and polystyrene sub-lid(s) in chests reduce cold air loss, improving temperature recovery after door closings. Five inner-door option is available for uprights.

Convenient, hinged, air filter grill allows easy access for inspection, cleaning and/or changing.

Ergonomically designed handle is cam-actuated to ensure a proper compression ratio around the door seal, while minimizing the effort required during freezer openings and closings.

Optional built-in chart recorder or digital datalogger can be installed at eye level on our 8600 and 900 Series Freezers for continuous monitoring.

## Rugged Cabinet Construction for Everyday Use

Heavy gauge, cold-rolled steel cabinets have a powder coat paint finish for a uniform exterior surface that resists chipping and rust.

Maximum product protection is provided by approximately 5.0" (127mm) of foamed-in-place polyurethane insulation in the cabinet that:

- reduces the amount of power consumed
- allows the cabinet to reach and maintain the temperature setpoint
- combined with triple-point door gasket provides longer holding times in the event of a power failure

Optional CO<sub>2</sub> and LN<sub>2</sub> safety back-up systems are available to provide additional sample protection in the event of a power or mechanical failure.

Storage pocket on 8600 Series uprights tilts forward, serving as a handy, centralized location for daily logs, IQ/OQ procedures, inventory control records, or the freezer's operating and maintenance manual.



### ENERGY-EFFICIENT, DOUBLE DOOR DESIGN

It's a unique design! Store frequently used specimens and samples in the top chamber, while long-term storage items remain undisturbed in the bottom.



<b>8600 Series</b> Advanced Performance, Controls and Monitoring Page <b>4</b>	<b>900 Series</b> High Performance and Controls Page <b>6</b>	<b>700 Series</b> Simplified Performance and Controls Page <b>8</b>	<b>Rack Systems for Upright Freezers</b> Page <b>10</b>	<b>Rack Systems for Chest Freezers</b> Page <b>14</b>	<b>Thermo Scientific Accessories</b> Page <b>15</b>
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Thermo Scientific Nalgene and Nunc cryogenic storage give you everything you need to safely store precious specimens, organize freezer space and simplify sample retrieval.

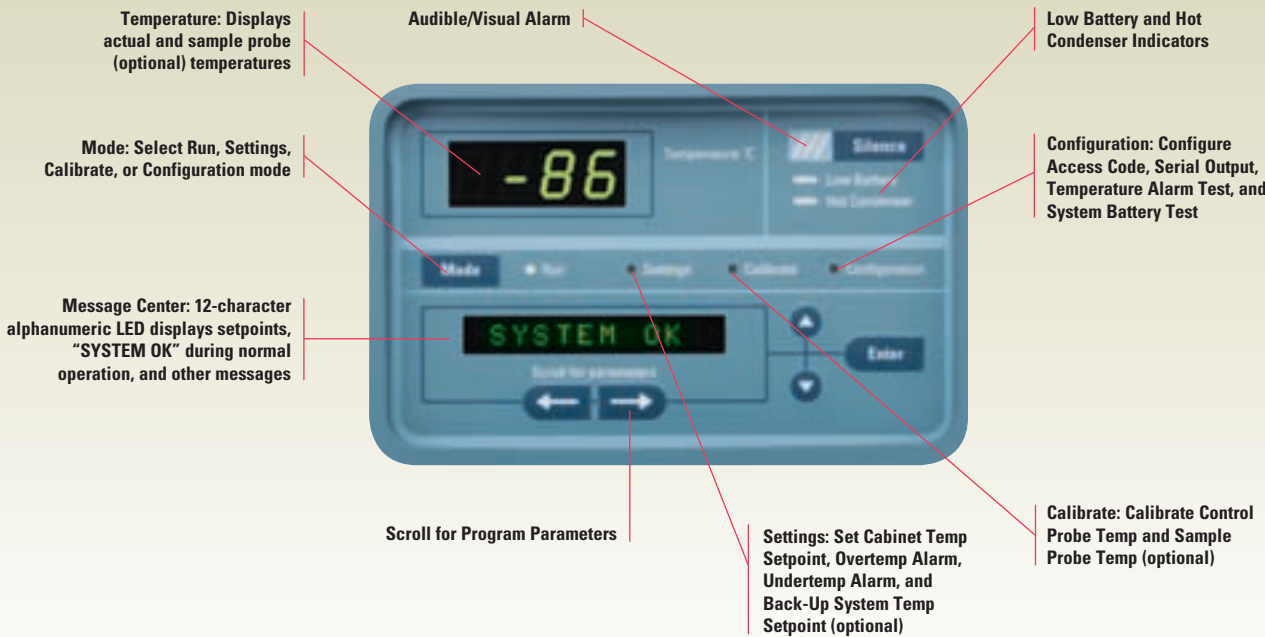
Nalgene and Nunc combine to provide one-stop shopping for the widest variety and highest quality of externally and internally threaded cryovials, storage boxes, lab top coolers and "Mr. Frosty" controlled rate freezing containers.



# Thermo Scientific Forma 8600 Series

## Upright and Chest Freezers for Ultimate Sample Protection

Our 8600 Series freezers are designed for pharmaceutical, biotech, blood bank applications, and any other industry that requires validation for critical sample storage.



## Additional Sample Protection Features:

RS-232 and 4-20 milliamp analog outputs are standard. The 4-20 milliamp output is a common analog output used to provide temperature data to independent monitoring devices and recorders. Output configurations other than the RS-232, 4-20 milliamp default are available (i.e., RS-485 or RS-232, and 0-1V, 4-20 milliamp, or 0-5V).

Optional sample probe in the top chamber of 8600 Series uprights measures sample temperature or top chamber temperature, assuring you of the sample temperature or uniformity between the top and bottom freezer.

## Enviro-Scan for Easy Setup, Programming and Monitoring

The centralized information center, which includes the Enviro-Scan Microprocessor Control/Monitoring System (shown below left) and an optional chart recorder or datalogger, ensures that all controls and displays are easy to reach and read.

- Highly visible display, intuitive controls and simplified programming make it easy to set up, program, check, and monitor parameters and conditions.
- Personal access code ensures setpoint security.
- Numerous audible/visual alarms (e.g., power failure, high/low temp, door ajar, condenser hot, probe failure, etc.) as well as high/low alarm test offer peace-of-mind monitoring of your samples.

## 8600 Series, Double Door Uprights

Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
8692	13.0 (368.1)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 19.3 (1308 x 584 x 490)	77.8 x 33.3 x 31.0 (1976 x 846 x 787)	712 (323)
8691		230V, 50/60 Hz	12/15 (P4)			
8693	17.3 (489.9)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 25.3 (1308 x 584 x 643)	77.8 x 33.3 x 37.0 (1976 x 846 x 940)	795 (360.6)
8694		230V, 50/60 Hz	12/15 (P4)			
8690	23.0 (651.3)	120V, 50/60 Hz	16/20 (P2)	51.5 x 30.6 x 25.3 (1308 x 777 x 643)	77.8 x 40.8 x 37.0 (1976 x 1036 x 940)	900 (408.2)
8695		230V, 50/60 Hz	12/15 (P4)			

## 8600 Series, Single Door Uprights

Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
8603	13.0 (368.1)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 19.3 (1308 x 584 x 490)	77.8 x 33.3 x 31.0 (1976 x 846 x 787)	712 (323)
8602		230V, 50/60 Hz	12/15 (P4)			
8604	17.3 (489.9)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 25.3 (1308 x 584 x 643)	77.8 x 33.3 x 37.0 (1976 x 846 x 940)	795 (360.6)
8605		230V, 50/60 Hz	12/15 (P4)			
8656	23.0 (651.3)	120V, 50/60 Hz	16/20 (P2)	51.5 x 30.6 x 25.3 (1308 x 777 x 643)	77.8 x 40.8 x 37.0 (1976 x 1036 x 940)	900 (408.2)
8606		230V, 50/60 Hz	12/15 (P4)			
8607	28.0 (792.8)	230V, 50/60 Hz	12/15 (P4)	51.5 x 36.6 x 27.0 (1308 x 930 x 686)	77.8 x 46.8 x 37.0 (1976 x 1189 x 940)	980 (444.5)

## 8600 Series, Chests

Temperature Range -50°C to -86°C						
Model	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
8615	12.7 (359.6)	120V, 50/60 Hz	16/20 (P2)	28.0 x 42.5 x 18.5 (711 x 1080 x 470)	40.5 x 72.0 x 28.8 (1029 x 1829 x 732)	716 (324.8)
8612		230V, 50/60 Hz	12/15 (P4)			
8621	20.0 (566.3)	120V, 50/60 Hz	16/20 (P2)	28.0 x 66.5 x 18.5 (711 x 1689 x 470)	40.5 x 96.0 x 28.8 (1029 x 2438 x 732)	833 (377.8)
8620		230V, 50/60 Hz	12/15 (P4)			

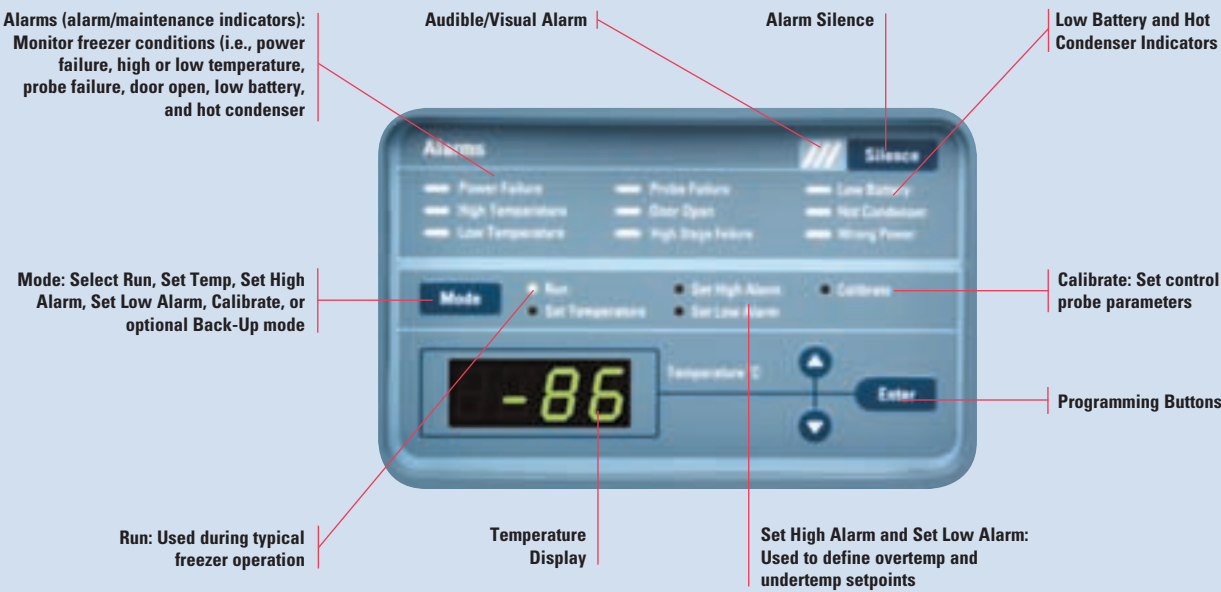
\* Upright freezers pass through a 34.0" (86.4cm) wide doorway with door and front panel opened 180 degrees, and rolling the freezer from side-to-side.

# Thermo Scientific Forma 900 Series

## Upright Freezers for Daily Sample Protection and Dependability

Our 900 Series freezers are designed for universities, research facilities and industrial institutions where easily adjustable shelves, easy-to-access controls and convenient at-a-glance monitoring are preferred.

The centralized information center, which includes a microprocessor control and monitoring system and an optional chart recorder or datalogger, ensures that all controls and displays are easy-to-reach and read.



## 900 Series, Double Door Uprights

Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
992	13.0 (368.1)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 19.3 (1308 x 584 x 490)	77.8 x 33.3 x 31.0 (1976 x 846 x 787)	712 (323)
991		230V, 50/60 Hz	12/15 (P4)			
993	17.3 (489.9)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 25.3 (1308 x 584 x 643)	77.8 x 33.3 x 37.0 (1976 x 846 x 940)	795 (360.6)
994		230V, 50/60 Hz	12/15 (P4)			
990	23.0 (651.3)	120V, 50/60 Hz	16/20 (P2)	51.5 x 30.6 x 25.3 (1308 x 777 x 643)	77.8 x 40.8 x 37.0 (1976 x 1036 x 940)	900 (408.2)
995		230V, 50/60 Hz	12/15 (P4)			

## 900 Series, Single Door Uprights

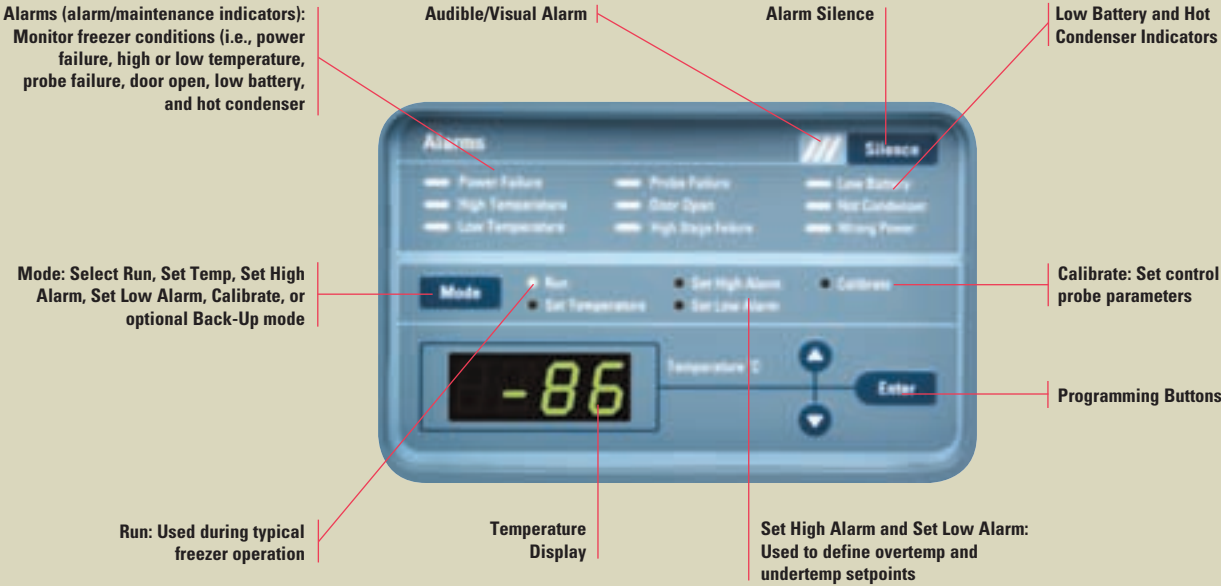
Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
903	13.0 (368.1)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 19.3 (1308 x 584 x 490)	77.8 x 33.3 x 31.0 (1976 x 846 x 787)	712 (323)
902		230V, 50/60 Hz	12/15 (P4)			
904	17.3 (489.9)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 25.3 (1308 x 584 x 643)	77.8 x 33.3 x 37.0 (1976 x 846 x 940)	795 (360.6)
905		230V, 50/60 Hz	12/15 (P4)			
906	23.0 (651.3)	230V, 50/60 Hz	12/15 (P4)	51.5 x 30.6 x 25.3 (1308 x 777 x 643)	77.8 x 40.8 x 37.0 (1976 x 1036 x 940)	900 (408.2)
956		120V, 50/60Hz	16/20 (P2)			
907	28.0 (792.8)	230V, 50/60 Hz	12/15 (P4)	51.5 x 36.6 x 27.0 (1308 x 930 x 686)	77.8 x 46.8 x 37.0 (1976 x 1189 x 940)	980 (444.5)

\* Upright freezers pass through a 34.0" (86.4cm) wide doorway with door and front panel opened 180 degrees, and rolling the freezer from side-to-side.

Thermo Scientific  
Forma 700 Freezers



Our 700 freezers are designed for clinical and academic institutions that require no-frills functionality without compromising sample protection. The information features simplified programmable controls, a temperature display and an optional chart recorder or datalogger for continuous monitoring.



700 Series, Chests

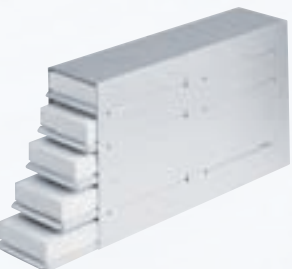
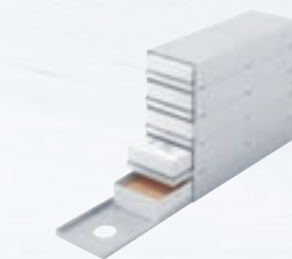
Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
708	3.0 (84.9)	115V, 60 Hz	10.5/15 (P1)	16.5 x 18.5 x 18.5 (419 x 470 x 470)	43.8 x 28.5 x 28.8 (1113 x 724 x 732)	432 (196)
709		230V, 50 Hz	5.4/15 (P4)			
715	12.7 (359.6)	120V, 50/60 Hz	16/20 (P2)	28.0 x 42.5 x 18.5 (711 x 1080 x 470)	40.5 x 72.0 x 28.8 (1029 x 1829 x 732)	716 (324.8)
712		230V, 50/60 Hz	12/15 (P4)			
719	17.0 (481.4)	230V, 50/60 Hz	12/15 (P4)	28.0 x 58.8 x 18.5 (711 x 1494 x 470)	40.5 x 87.6 x 28.8 (1029 x 2225 x 732)	821 (372.4)
721	20.0 (566.3)	120V, 50/60 Hz	16/20 (P2)	28.0 x 66.5 x 18.5 (711 x 1689 x 470)	40.5 x 96.0 x 28.8 (1029 x 2438 x 732)	833 (377.8)
720		230V, 50/60 Hz	12/15 (P4)			

700 Series, Uprights

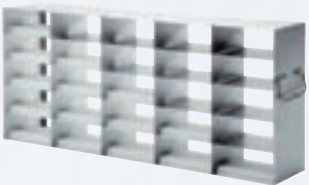
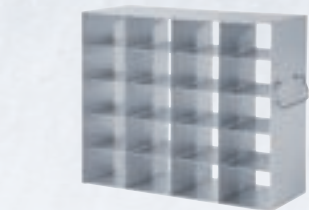
Temperature Range -50°C to -86°C						
Model No	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D inches (mm)	Exterior Dimensions H x W x D inches (mm)	Shipping Weight lbs (kg)
702	13.0 (368.1)	230V, 50/60 Hz	12/15 (P4)	51.5 x 23.0 x 19.3 (1308 x 584 x 490)	77.8 x 33.3 x 31.0 (1976 x 846 x 787)	603.7 (274.4)
703		120V, 50/60 Hz	16/20 (P2)			
704	17.3 (489.9)	120V, 50/60 Hz	16/20 (P2)	51.5 x 23.0 x 25.3 (1308 x 584 x 643)	77.8 x 33.3 x 37.0 (1976 x 846 x 940)	795 (360.6)
705		230V, 50/60 Hz	12/15 (P4)			
706	23.0 (651.3)	230V, 50/60 Hz	12/15 (P4)	51.5 x 30.6 x 25.3 (1308 x 777 x 643)	77.8 x 40.8 x 37.0 (1976 x 1036 x 940)	900 (408.2)
756		120V, 50/60Hz	16/20 (P2)			

\* Upright freezers pass through a 34.0" (86.4cm) wide doorway with door and front panel opened 180 degrees, and rolling the freezer from side-to-side.

Thermo Scientific Rack Systems  
for Upright Freezers



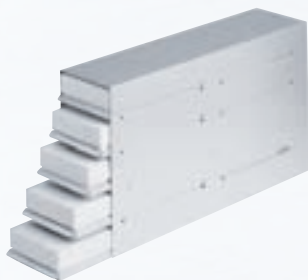
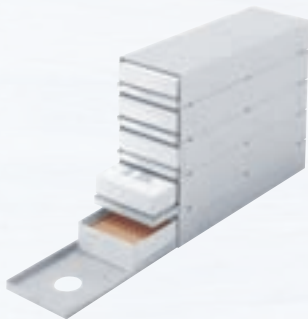
Cat. No.	Description (W x D x H mm)	Freezer Volume cu ft (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Total Racks/ Shelf	Racks/ Freezer
Sliding Drawer for Single Door Freezers and Bottom Half of Double Door*						
H6C5KIT100	With 2" boxes and 100 place cell dividers					
H6C5/00	Without boxes 140 x 410 x 305	13 (368)	15		4	16/8*
H6C3KIT100	With 3" boxes and 100 place cell dividers					
H6C3/00	Without boxes 140 x 545 x 305	13 (368)		9	4	16/8*
H7C5KIT100	With 2" boxes and 100 place cell dividers					
H7C5/00	Without boxes 140 x 545 x 305	17.3 (490) 23 (651)	20 20		4 5	16/8* 20/10*
H7C3KIT100	With 3" boxes and 100 place cell dividers					
H7C3/00	Without boxes 140 x 545 x 305	17.3 (490) 23 (651)		12 12	4 5	16/8* 20/10*
H8C5KIT100	With 2" boxes and 100 place cell dividers					
H8C5/00	Without boxes 140 x 673 x 305	28 (793)	25		6	
Sliding Drawer for Single Door Freezers						
H8C3KIT100	With 3" boxes and 100 place cell dividers					
H8C3/00	Without boxes 140 x 673 x 305	28 (793)	-	15	6	24



Cat. No.	Description (W x D x H mm)	Freezer Volume cu ft (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Tottal Racks/ Shelf	Racks/ Freezer
Side Access: Single Door Freezers Bottom Half of Double Door Freezer* (with non-adjustable shelves)						
H6C5/SA	Without boxes 137 x 410 x 305	13 (368)	15	-	4	16/8*
H6C3/SA	Without boxes 137 x 410 x 305	13 (368)	-	9	4	16/8*
H7C5/SA	Without boxes 137 x 545 x 305	17.3 (490) 23 (651)	20 20	- -	4 5	16/8* 20/10*
H8C5/SA	Without boxes 137 x 673 x 305	28 (793)	25	-	5	20/10*
H7C3/SA	Without boxes 137 x 545 x 305	17.3 (490) 23 (651)	- -	12 12	4 5	16/8* 20/10*

\* Total racks/freezer capacity in the bottom half of double door models.

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Cat. No.	Description (W x D x H mm)	Freezer Volume cu ft (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Racks/ Shelf	Total Racks/ Freezer
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### Sliding Drawer for Single Door Freezers with 5 Inner Door Option Top Half of Double Door Freezers\*

H6C4KIT100	With 2" boxes and 100 place cell dividers				
H6C4/00	Without boxes				
	140 x 410 x 240	13 (368)	12	-	4** 20/8*

When ordering, please include one H6C5/00/P Probe relief rack with your order to accommodate probe.

H6C5/00/P	Without boxes					
	140 x 410 x 305	13 (368)	12	-	4	20/8*

Probe rack to be used with H6C5/00/P Probe relief rack, one rack per freezer required.  
Please note H6C5KIT100 illustrated, note 4 trays only.

H7C4KIT100 H7C4/00	With 2" boxes and 100 place cell dividers					
	Without boxes					
	140 x 545 x 240	17.3 (490)	16	-	4**	20/8*
		23 (651)	16	-	5	25/10*

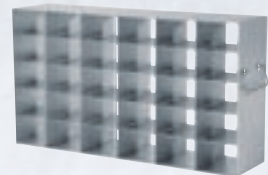
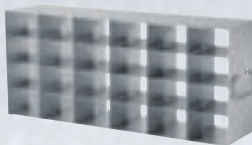
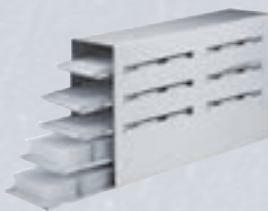
Probe rack to be used with H7C5/00, one rack per freezer required.  
When ordering, please include one H7C5/00/P Probe relief rack with your order to accommodate probe.  
Please note H7C5KIT100 illustrated, note 4 trays only.

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**Variable Side access Racks for either 2" or 3" Cryo Boxes.  
Single Door Freezers with 5 Inner Door Option Top Half of Double Door Freezers\***

H7C4-3/SA	Without boxes					
	137 x 545 x 240	17.3 (490)	16	12	4**	20/8*
		23 (651)	16	12	5	25/10*

H6C4-3/SA	Without boxes					
	137 x 410 x 240	13 (368)	12	9	4**	20/8*



Cat. No.	Description (W x D x H mm)	Freezer Volume cu ft (L)	Microplates	Racks/ Shelf	Total Racks/ Freezer
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## Microplate Racking for Single and Double Door options

(for other configurations, please contact your sales representative)

H6C5/MP	5 pull out trays 140 x 420 x 305	13 (368)	20 (60 shallow)	4	16/8*
H7C5/MP	5 pull out trays 140 x 555 x 305	17.3 (490)	30 (90 shallow)	4	16/8*

H6C4/MP/SA	side access 137 x 370 x 240	13 (368)	16 (48 shallow)	4*	20
H7C4/MP/SA	side access 137 x 550 x 240	17.3 (490)	4**	20	

H6C5/MP/SA	side access				
	137 x 370 x 305	13 cu. ft. (368)	20 deepwell (60 stacked)	4	16
H7C5/MP/SA	30 position, side access				
	137 x 550 x 305	17.3 (490)		4	16
		23.0 (651)		5	20

923/S/10/SA	Side-access microplate rack				
	137 x 625 x 305	17.3 (490)	70 single/140 double	4	16
925/S/10/SA		23 (651)	20 (60 shallow)	5	20
	Side-access microplate rack				
	137 x 477 x 305	13 (368)	50 single (100 stacked)	4	16

## General Sample Storage Bins

SB7	Multi-drawer rack 140 x 420 x 140	13 (368)	4	15
SB8	Multi-drawer rack 140 x 520 x 130H	17.3 (490)	4	15
		23 (651)	4	15

SB1	Storage container				
	140 x 470 x 275	13 (368)		4	15
SB2	Storage container				
	140 x 630 x 275	17.3 (490)			15
		23 (651)			20
		28			24

\*\* Four tier racks are designed to suit either double door cabinets or five compartment options only.

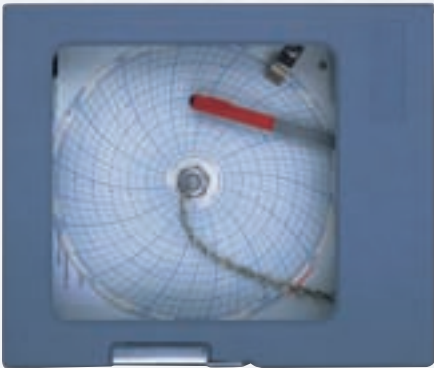
\*\* Four tier racks are designed to suit either double door cabinets or five compartment options only.



Cat. No.	Description (W x D x H mm)	Freezer Volume cu ft (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Total Racks/ Freezer
Vertical Cold Storage Rack with Handle					
K5A6	Without boxes				
	140 x 139 x 345	3 (85)	6		9
		6.7 (190)	6		18
K5A4	Without boxes				
	140 x 139 x 345	3 (85)		4	9
		6.7 (190)		4	18
K7A12	Without boxes				
	140 x 139 x 648	12.7 (360)	12		21
		17 (481)	12		29
		20 (566)	12		33
Rack with Handle					
K6A8	Without boxes				
	140 x 139 x 690	12.7 (360)		8	21
				8	29
		20 (566)		8	33
Microplate Rack with Handle					
K7/27SL K7/27SP	27 position, landscape				
	27 position, portrait				
	131 x 87 x 690	12.7 (360)			33
		17 (481)			48
		20 (566)			51

\* Total racks/freezer capacity in the top half of double door models.  
\*\* Four tier racks are designed to suit either double door cabinets or five compartment options only.

Cat. No.	Description
Storage Boxes	
	5.3" x 5.3" (13.5cm x 13.5cm)
820002	2.0" (5.1cm) high box (water repellent cardboard box with 81 cell dividers)
820003	3.0" (7.6cm) high box (water repellent cardboard box with 81 cell dividers)
820010	2.0" (5.1cm) high polycarbonate box, includes 100-cell divider with 0.5" (1.3cm) openings, 5.3" x 5.3" x 2.0"H (13.5cm x 13.5cm x 5.1cm), Holds 1.0, 1.5, and 2.0ml vials and features a numerical grid system printed on the cover for inventory purposes
820011	2.0" (5.1cm) high polycarbonate box, includes 81-cell divider with 0.5" (1.3cm) openings, 5.3" x 5.3" x 2.0"H (13.5cm x 13.5cm x 5.1cm), Holds 1.0, 1.5, and 2.0ml vials and features a numerical grid system printed on the cover for inventory purposes
820013	3.0" (7.62cm) high polycarbonate box, includes 81-cell divider with 0.5" (1.3cm) openings, 5.3" x 5.3" x 3.3"H (13.5cm x 13.5cm x 8.4cm), Holds 3.0, and 4.0ml cryotubes and features a numerical grid system printed on the cover for inventory purposes
Cell Dividers	
820016	16-cell, 1.22" (3.0cm) nominal opening
820025	25-cell, 0.98" (2.5cm) nominal opening
820049	49-cell, -0.70" (1.7cm) nominal opening
820064	64-cell, 0.61" (1.5cm) nominal opening
820081	81-cell, 0.54" (1.3cm) nominal opening
820100	100-cell, 0.49" (1.1cm) nominal opening
4000221	Cryo Marker Pens, four fine tip pens (black, blue, green and red) with fast-drying, non-smearing, permanent ink
6", 7 Day Temperature Recorders -100°C to +38°C (-148°F to +100°F)	
	Chart recorders are installed within easy view (e.g., eye level on uprights) and reach on our 8600 and 900 Series Freezers for easy monitoring and paper changes, and in the base of the 700 Series. These chart recorders are for current 120V and 230V Forma freezer models. Recorders for discontinued models are also available. Contact us for details.
201240	Recorder, customer installed* Includes single felt-tip pen and box of chart paper.
201241	Recorder, factory installed Includes single felt-tip pen and box of chart paper.
17020	Chart paper, 50 charts per box
245231	Red felt-tip replacement pen
245232	Blue felt-tip replacement pen
6", 7 Day Inkless Circular Chart Recorders +50°C to -115°C (-175°F to +122°F)	
	(-175°F to 122°F), single pressure-sensitive pen, includes inkless pen and box of chart paper
201248	Inkless recorder, customer installed* (includes single pressure-sensitive inkless pen and box of chart paper)
201249	Inkless recorder, factory installed (includes single pressure-sensitive inkless pen and box of chart paper)
180000	Chart paper, 50 charts per box
Built-in Dataloggers, -90°C to +140°C (-130°F to +284°F)	
	Dataloggers are located within easy view (e.g., eye level on uprights) and reach on our 8600 and 900 -86°C Series Freezers for easy monitoring, and in the base of the 700 Series.
	Dataloggers are designed to meet U.S. FDA guidelines cGLP 21 CFR Part 58, Software Validation 21 CFR Part 820, and Electronic Records 21 CFR Part 11. Full compliance requires user training. Contact your sales representative for an implementation quotation.
201246	Datalogger, customer installed* (includes evaluation software and PC data cable)
201247	Datalogger, factory installed (includes evaluation software and PC data cable)



\* Must be installed by  
qualified personnel



Cat. No.	Description
Safety Back-Up Systems, Wall Clamp, and Hoses	
Back-up systems provide the convenience, reassurance, and reliability you need in the event of a power or mechanical failure. A CO <sub>2</sub> or LN <sub>2</sub> safety back-up system is a must for your critical storage applications.	
<b>Back-up systems for uprights and chests</b>	
195875	Deluxe CO <sub>2</sub> back-up, factory installed
195876	Deluxe CO <sub>2</sub> back-up, customer installed*
195877	LN <sub>2</sub> back-up, factory installed
195878	LN <sub>2</sub> back-up, customer installed
950316	Wall clamp, CO <sub>2</sub> cylinder holder for securing tank to wall in accordance with OSHA regulatons
991505	High pressure liquid CO <sub>2</sub> hose, kink resistant with stainless steel liner covered with double-braided stainless steel sheath, NPT Type 316 stainless steel female fitting, maximum working pressure 2500 psig in 6 ft. (1.8m) lengths
4000401	LN <sub>2</sub> transfer hose, flexible 6 ft. (1.8m) metal hose, 0.5" (1.3cm) diameter 45 degree flare with swivel ends
SD3 GSM Professional Alarm Communication Systems	
An SD3 can communicate from a PSTN line, GSM network or both together. The unit is fully self-programmable, letting you enter up to ten contact telephone numbers. Remote access feature lets you dial in from any land line or mobile phone in the world and an integral thermometer can be pre-set at any temperature between 0 and 40C.	
SD1KIT	Complete Installation Kit Auto Dialler for up to 4 units. UK Plug. Dials 3 numbers with recorded message.
SD1KIT-E	Complete Installation Kit Auto Dialler for up to 4 units. European Plug. Dials 3 numbers with recorded message.
SD3KIT	Complete Installation Kit GSM Auto Dialler for up to 8 units. UK Plug. Dials 3 numbers with recorded message.
SD3KIT-E	Complete Installation Kit GSM Auto Dialler for up to 8 units. European Plug. Dials 3 numbers with recorded message.
Temperature/Power Monitors	
Digital and audible/visual alarms are ideal for monitoring the temperature and power supply of freezers, lab refrigerators, and incubators, or other equipment within the specified temperature ranges.	
The Digital Temperature/Power Monitor with alarm silence, which can be mounted to your equipment, includes one temperature probe encased in a stainless steel sheath with a 20 ft. (6.1m) lead wire. Monitoring range is -135°C to 99°C (-211°F to 210.2°F).	
Digital temperature readout is easy to view.	
Indicator lights exist for power, normal operation and alarm. Audible alarm also sounds if a power failure or alarm condition occurs.	
Adjustable high/low alarms can be set digitally. Alarm silence is momentary-timed. Key switch allows standby mode until temperature is fully recovered and then rings back to remind you to switch to normal operation. Alarm test system (high alarm only) is standard.	
The unit also features a recharging nickel cadmium battery back-up system, remote alarm contacts, millivolt output signal (for use with our Model 1535 Monitor/Alarm System), and an 8 ft. (2.4m) electrical line cord.	
<b>Digital Temp/Power Monitors, 10.0"W x 10.0"H x 4.0"F-B</b> (25.4cm x 25.4cm x 10.2cm)	
400048	120V, 60 Hz
400049	230V, 50 Hz



Cat. No.	Description
Audible/Visual Temperature/Power Monitor	
Compact Temperature/Power Monitor, which operates on a 120V power source, attaches to a wall or equipment for convenient single unit monitoring. The monitoring range is -90°C to 40°C (-130°F to 104°F).	
Audible/visual alarms alert you of over and undertemperature conditions and power loss (alarm can be reset when cabinet temperature returns to normal). Battery back-up power keeps the monitor operational, even during a power failure.	
Ringback system provides additional protection. The self-contained probe avoids reliance on equipment remote alarm contacts, providing an additional level of safety. Unit includes remote alarm contacts for connection to a remote alarm.	
290003	Temp/Power Monitor, 120V, 60 Hz; 4.3"W x 6.3"H x 2.0"F-B (10.9cm x 16.0cm x 5.1cm)
Remote Alarms	
Our Remote Alarms are designed for areas where an alarm may not be readily heard. These alarms extend your existing alarm system to a remote location in the facility.	
The lightweight units attach to a wall or cabinet for convenience. The alarms operate on line voltage and switch to battery back-up if a power failure occurs. The remote alarms can be connected easily to a temperature/power monitor and remote alarm contacts on our products.	
Units come complete with an audible alarm silence switch and alarm ringback feature. You can temporarily defeat any alarm, but the system rings back as a reminder to reset when normal conditions are restored.	
No. 400040 and No. 400011 include audible and/or visual alarms to indicate an alarm condition on monitored equipment.	
<b>Remote Alarms 4.3" x 6.3"H (10.9cm x 16.0cm)</b>	
400011	120V, 60 Hz; audible signal; 2.0" (5.1 cm) F-B
400040	120V, 60 Hz; audible and visual signal; 1.5" (3.8 cm) F-B
400041	230V, 50 Hz; audible and visual signal; 1.5" (3.8 cm) F-B
Data Outputs	
Although RS-232 and 4-20 milliamp analog outputs are standard on the 8600 Series, we offer the following options to meet your specific needs.	
Optional Data Outputs, factory installed (available on 8600 series only)	
195895	RS-232, 0-1V
195896	RS-232, 0-5V
195897	RS-485, 4-20 milliamp
195898	RS-485, 0-1V
195899	RS-485, 0-5V
RS-232 allows connection to a computer, recorder, or independent monitoring device. (RS-232 is not compatible with our Model 1535 Monitor/Alarm System). RS-485 allows direct connection to the Model 1535 Monitor/Alarm System	
Cryo Gloves	
<b>Wrist-Length, 12.0" (30.5cm), one pair</b>	
189573	Small
189574	Medium
189575	Large
<b>Mid-Arm Length, 14.0" to 15.0" (35.6cm to 38.1cm), one pair</b>	
189561	Medium
189562	Large
189563	Extra Large
<b>Elbow-Length, 18.0" to 30.0" (45.7cm to 50.8cm), one pair</b>	
189564	Medium
189565	Large



Cat. No.	Description
Inner Door Kits for Uprights	
	Interior compartment doors reduce cold air loss and improve temperature recovery after door closings. (Four interior doors are already included on our -86°C uprights).
195240	Interior Door Kit for Forma -40°C Lab Freezers (uprights), Includes four interior doors with latches, factory installed
	Five Inner Door Option for 8600 and 900 Series, includes five powder Coated inner doors and one additional shelf, factory installed
189405	For 13.0 cu.ft. uprights
189406	For 17.3 cu.ft. uprights
189407	For 23.0 cu.ft. uprights
195652	For 28.0 cu.ft. uprights
Water-Cooled Condenser Option	
	The water-cooled condenser option is available for our -86°C uprights and -86°C 12.7, 17.0 and 20.0 cu.ft. chests.
	Your work environment stays cooler because 50% less heat is emitted to your surroundings (i.e., less BTU rejection). A water regulating valve automatically controls the water flow needed to maintain the compressor discharge pressure. Cooler compressor temperatures enhance compressor stability and reliability.
	<b>Water-Cooled Condensers</b>
195964	For 13.0 cu.ft. uprights
195965	For 17.3, 23.0, and 28.0 cu.ft. uprights
195967	For 12.7, 17.0, and 20.0 cu.ft. chests
	Like our standard freezers, those with the water-cooled condenser options are also UL Listed to Canadian and United States requirements and bear the CE Mark.
Condenser Specifications	
	These specifications apply to tower and city water sources.
	<b>Water Pressure and Temperature</b>
	Maximum Pressure150 psig
	Maximum Temperature29.4°C (85°F)
	<b>Connections</b>
	Inlet0.5" compression
	Outlet.5" compression
	<b>Water Flow Rate Required</b>
	Tower Water3.0 gallons (11.4 liters) per minute
	City Water1.0 gallons (3.8 liters) per minute
	<b>Drain Required?</b>
	Tower WaterNo (return line is required)
	City WaterYes
	Installation requires a qualified technician and should include proper adjustment of the regulating valve, which controls the discharge pressure.
	Condenser options for discontinued freezer models are also available. Contact your sales representative for details.
Shelving for Uprights	
	<b>Stainless Steel Shelf Kits for 8600 and 900 Series, include mounting hardware</b>
224134	For 13.0 cu.ft. uprights
224135	For 17.3 cu.ft. uprights
224158	For 23.0 cu.ft. uprights
224180	For 28.0 cu.ft. uprights
	Behind-the-Mullion Shelf for 8600 and 900 Series
195338	For 13.0 cu.ft. double door uprights
195339	For 17.3 cu.ft. double door uprights
195340	For 23.0 cu.ft. double door uprights

Cat. No.	Description
Air Filter Replacement Kits	
	<b>Air Filter Replacement Kits, value pack of five filters</b>
195890	For 8600, 900, and 700 Series uprights
195947	For 3.0 cu.ft. chests
195948	For 12.7, 17.0, and 20.0 cu.ft. chests
	Air filters for discontinued freezer models are also available. Contact your sales representative for details.
Sample Probe Kits for 8600 Series Uprights	
	Probe kits are useful to measure sample temperature or top chamber temperature, assuring you of the sample temperature or uniformity between the top and bottom of the freezer.
195892	Kit, customer installed* (includes probe clip and probe)
195893	Kit, factory installed (includes probe clip and probe)
Miscellaneous Accessories	
189620	Access Port, 1.3" inside diameter, factory installed
195915	Unique key lock, factory installed
430266	120V/20A Twist lock plug, NEMA L5-20P
430267	230V/15A Twist lock plug, NEMA L6-15P
* Must be installed by qualified professional	



Achieve secure, efficient  
tracking of laboratory samples  
with Thermo Scientific 2D  
Barcoded storage tubes.

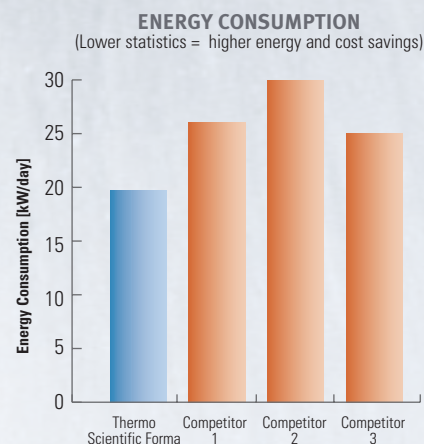
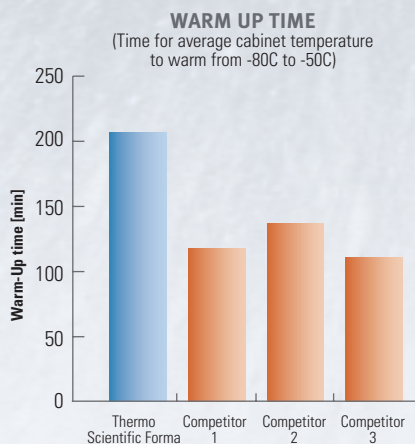
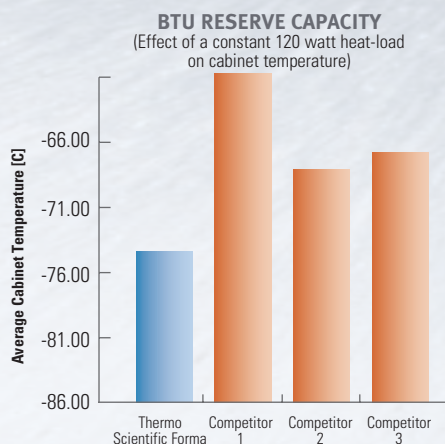
Unlike traditional storage tubes, a permanently bonded 2D barcode is laser-etched on the base of every tube for individual identification and traceability. Available in volumes from 0.3 ml to 12.0 ml, stringent quality control ensures flawless barcodes and all tubes are leak-tested to ensure the integrity of every sample. The microplate footprint tube racks, with a locking lid to secure samples, are stackable to provide space efficiencies for storage.

Complementary Thermo Scientific 2D barcode readers allow instant decoding of each barcode and sample entry into virtually any file or database application, permanently linking the tube contents to the unique 2D code.

For more information, please visit  
[www.thermoscientific.com/matrix](http://www.thermoscientific.com/matrix)

# Designed with your samples in mind

The BTU Reserve Capacity test illustrates our Forma freezers' ability to accept a heat load (warm samples placed inside a freezer), yet maintain a very cold average cabinet temperature. This is accomplished through a robust refrigeration system and superior insulation. The Warm Up Time chart illustrates our superior insulation and door seals by showing the time it takes for an empty unit to warm from -80C to -50C in a simulated power outage. Finally, we accomplish this with optimized Energy Consumption during normal cycling at a -80C set point. The graphs below are based on a Thermo Scientific Forma 906 at 60Hz versus similar competitive units.



## ADDITIONAL FEATURES

Our fully-tested refrigeration system improves temperature control for more consistent temperature cycling and increases reserve BTUH capacity, resulting in a more stable temperature for safer product storage.

Triple-point silicone gasket and latch/handle on uprights and flexible gasket on chests ensure a snug seal that:

- Minimizes ambient temperature and humidity migration to the interior, reducing maintenance because less frost builds up on the inner doors and chest sub-lid(s)
- Provides an energy-efficient thermal barrier to keep cold air in and room temperature air out, contributing to safe product storage and reducing wear and tear on the compressors because they don't have to operate as often

Uprights include acoustical mufflers designed into the base and sound-absorbing foam that work together to reduce noise level, ensuring quiet operation for more comfortable working conditions.

### Automatic Voltage Compensator for Longer Compressor Life

- Ensures that a more consistent electrical current flows to the freezer, reducing wear and tear on the compressor(s)
- Increases compressor life by maintaining reliability over a wide voltage range
- Prevents incorrect voltage from being applied to the freezer's fan(s) and compressors (e.g., ensures use of the correct electrical outlet) All freezers include a battery back-up system that provides power to the monitoring and alarm system in the event of a power failure.

Freezers include remote alarm contacts for connection to an in-house security system, optional remote alarm system or Sensaphone® Telephone Dialing System.

Heated vacuum relief port on uprights equalizes the pressure quickly, allowing easy re-entry after closing.

Key lock prevents unwanted access to your valuable samples.

For added security, an audible/visual alarm occurs if the door or lid is not closed properly.

**Contact your sales representative  
for warranty information.**

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**North America:** USA/Canada +1 866 984 3766 (866-9-THERMO)

**Europe:** Austria +43 1 801 40 0, Belgium +32 2 482 30 30, France +33 2 2803 2180, Germany national toll free 08001-536 376, Germany international +49 6184 90 6940, Italy +39 02 02 95059 434-254-375, Netherlands +31 76 571 4440, Nordic countries +358 9 329 100, Russia/CIS +7 (812) 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

**Asia:** China +86 21 6865 4588 or +86 10 8419 3588, India toll free 1800 22 8374, India +91 22 6716 2200, Japan +81 45 453 9220,

Other Asian countries +852 2885 4613, **Countries not listed:** +49 6184 90 6940 or +33 2 2803 2000

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