innovation
performance
reliability
support

SALES AND SERVICE
NORTH AMERICA

SANYO Electric Co. Ltd. products are sold and serviced in North America by a network of factory trained authorized independent sales and service representatives under the direction of SANYO E & E America, Co., Bensenville, IL. Visit our web site at www.sanyobiomedical.com for the latest sales and service information.

preservation
incubation
sterilization

www.sanyobiomedical.com



VERTICAL COMPONENT INTEGRATION

SANYO

SANYO E&E America Company
1062 Thorndale Avenue, Bensenville, IL 60106 USA
Toll Free USA 800-858-8442 • Fax 630-238-0074
www.sanyobiomedical.com
SANYO Canada, Inc.
1- 300 Applewood Crescent, Concord, Ontario L4K 5C7
905-760-4025 • Fax 905-760-9945

DMREV8.06

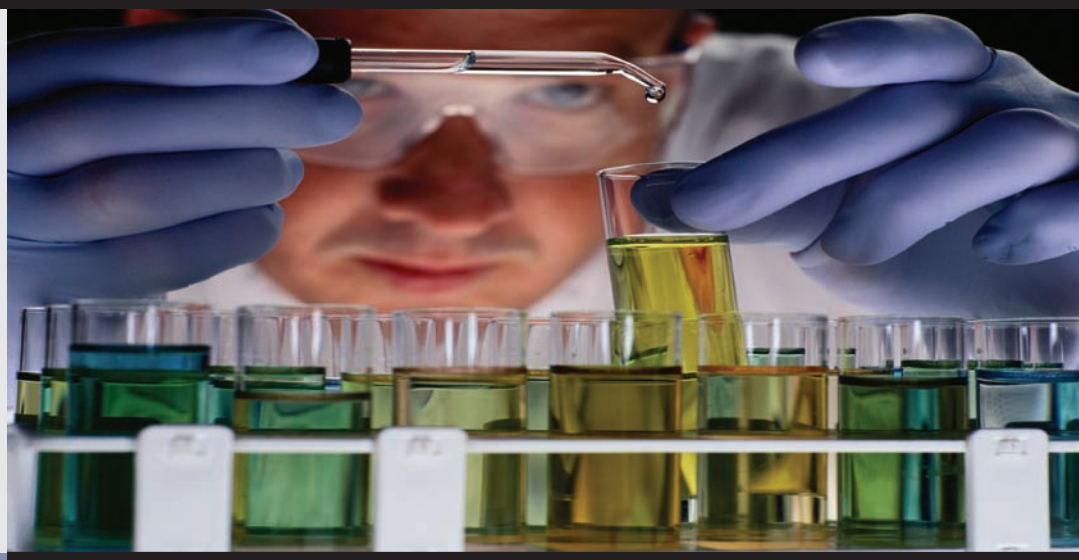
Laboratory Incubators • Ultra-Low Freezers • Biomedical Freezers and Refrigerators
Blood Bank Products • Autoclaves • Plant Growth Chambers

SANYO

Biomedical Equipment Product Guide

Advanced Products and Technologies for Life Science, Pharmaceutical, Biotechnology, Clinical and Industrial Laboratories

preservation
incubation
sterilization



www.sanyobiomedical.com

Laboratory Incubators • Ultra-Low Freezers • Biomedical Freezers and Refrigerators
Blood Bank Products • Autoclaves • Plant Growth Chambers

VERTICAL COMPONENT INTEGRATION™

As a leader in consumer electronics, refrigeration, energy and environmental products, SANYO offers a robust source of proven technologies deployed throughout a range of biomedical and medical research products.

Pioneering developments in consumer and industrial products are applied to all SANYO products through the development model of Vertical Component Integration™. Because many of our key component parts are designed and built by SANYO, we offer only the very best, accurately matched components in each SANYO product.

As SANYO draws on vast corporate resources to develop laboratory products to meet the needs of contemporary medical and scientific research, the SANYO philosophy of Vertical Component Integration™ is expressed in human-oriented, easy-to-use, ergonomic products.

HFC Refrigerants and CFC-free Insulation

Environmental Protection Agency Award

Always a leader in environmentally friendly technology, SANYO refrigerated products use commercially available HFC refrigerants and CFC-free insulation.

SANYO Electric Biomedical Co., Ltd., as a member of the SANYO Electric Group, has received ISO14001 Certification for its environmental management system.

SANYO *Connect*

Sanyo's customer-driven biomedical service program that guarantees local attention from qualified Sanyo service representatives, whenever and wherever you need it.

- New Unit Installation and Training
- Preventative Maintenance
- Warranty and Non-Warranty Repairs
- Calibration/Validation Services
- Refurbishment and Reconditioning
- Customized Service and Warranty Programs
- Loaner Units When Needed
- In-Stock Parts for Immediate Delivery

Prices and conditions may vary by market.

CORE TECHNOLOGIES

SANYO core technologies, patents and intellectual properties are represented in every product line. Core technologies apply to critical components and processes such as refrigeration compressors, microprocessor electronics and patented V.I.P.™ vacuum insulation panels engineered to exact specifications for important applications in the life science, pharmaceutical, biotechnology, clinical and industrial laboratories. As a result, SANYO products operate with dependability, safety, energy efficiency and ergonomic sensitivity.

Look for these and other proprietary technologies and patents on SANYO Biomedical laboratory products.

Patented V.I.P.™ Vacuum Insulation Panel Freezers, U.S. Patent No. 6260377

Patented SafeCell™ ultraviolet contamination control, U.S. Patent No. 6255103

inCu saFe™ germicidal effective copper-enriched stainless steel incubator interior

P.I.D./R™ infrared CO_2 system with rapid recovery

Patented Direct Heat and Air Jacket™ (DHA) incubator heating technology, U.S. Patent No. 5519188

Active Background Contamination Control™ cell culture environment

FDA clearance for *In Vitro* fertilization, FDA K013703, October 30, 2001

SANYO-brand application specific laboratory refrigeration compressors

SANYO-brand battery technology

SANYO-built electronic components

Product Guide

For over thirty years, SANYO has established a reputation as a premier manufacturer of precision biomedical and laboratory equipment.

On a broader scale, SANYO E & E America, Co., a division of SANYO North America Corporation, is the North America distributor for SANYO Electric Co., Ltd., Osaka, Japan.

Known throughout the world for leadership in consumer electronics and appliances, SANYO addresses global needs such as energy, food, housing, health and information technology.

The complete line of SANYO Biomedical products includes an array of laboratory equipment with the most advanced technology, controls, construction and performance attributes in the industry. Today we apply the most sophisticated refrigeration compressor design and state-of-the-art electronics to ultra-low and cryogenic freezers, refrigerators, incubators, and environmental chambers marketed to life science, pharmaceutical, biotechnology, healthcare and industrial laboratory markets worldwide.

r e p u t a t i o n

BIOMEDICAL EQUIPMENT PRODUCT GUIDE

Advanced Products and Technologies for Life Science, Pharmaceutical, Biotechnology, Clinical and Industrial Laboratories

preservation
incubation
sterilization

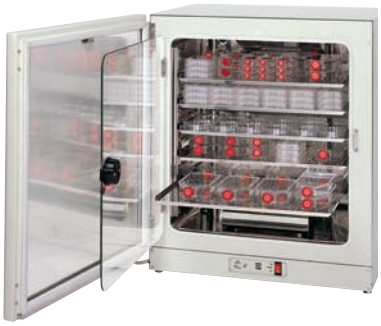
INDEX TO SANYO BIOMEDICAL PRODUCTS, NORTH AMERICA

Note: Not all products are available in all North or South American markets. Contact your local sales representative for availability in your area.

LABORATORY INCUBATORS, CO_2

Combination SafeCell™ UV technology and inCu saFe™ interior construction for contamination control, no culturing downtime

Feature	Benefit
inCu saFe™ Interior	Copper-enriched stainless steel interior surfaces provide inherent germicidal protection
Direct Heat and Air Jacket™ Control	Patented, radiant wall heating is microprocessor controlled in three zones to maintain uniformity and optimum humidity
SafeCell™ UV Contamination Control	Narrow bandwidth ultraviolet sterilization in situ to eliminate air and water pan contamination without downtime
CO_2 Control Options	Available with high precision, quick recovery infrared or thermal CO_2 sensor
P.I.D./R™ Control Sophistication	Proportional, integral and derivative infrared CO_2 control accelerates recovery, prevents overshoot



Model MCO-20AIC

Model Number	Volume	Exterior Dimensions	Contamination Control	CO_2 Control	Chamber	Voltage, Power Connection
MCO-20AIC	7.6 cu.ft.	30.3"W x 27.9"F-B x 35.4"H	SafeCell™ UV with ultraviolet light, inCu saFe™ copper-enriched stainless steel interior	infrared	single	115V NEMA 5-15
MCO-40AIC	15.2 cu.ft.	30.3"W x 27.9"F-B x 70.8"H			dual	
MCO-18AIC(UV)	6.0 cu.ft.	24.4"W x 28"F-B x 35.4"H	SafeCell™ UV with ultraviolet light, inCu saFe™ copper-enriched stainless steel interior	infrared with P.I.D./R™ recovery	single	
MCO-36AIC(UV)	12.0 cu.ft.	24.4"W x 28"F-B x 70.8"H			dual	
MCO-18AIC	6.0 cu.ft.	24.4"W x 28"F-B x 35.4"H	inCu saFe™ copper-enriched stainless steel interior	infrared with P.I.D./R™ recovery	single	
MCO-36AIC	12.0 cu.ft.	24.4"W x 28"F-B x 70.8"H			dual	
MCO-17AC	5.8 cu.ft.	24.4"W x 23.8"F-B x 35.4"H		thermal conductivity	single	
MCO-34AC	11.6 cu.ft.	24.4"W x 23.8"F-B x 70.8"H			dual	
MCO-5AC	1.7 cu.ft.	18.9"W x 21.6"D x 22.4"H	Optional SafeCell™ UV with ultraviolet light, in Cu saFE™ copper-enriched stainless steel interior	thermal conductivity	single	

SANYO laboratory CO_2 incubators feature selected SafeCell™ UV with exclusive, patented Active Background Contamination Control™. All SANYO CO_2 incubators feature patented Direct Heat, Air Jacket™ temperature control for accurate, uniform temperature control.

LABORATORY INCUBATORS, CO_2/O_2

For below-ambient or enriched (above ambient) oxygen levels in addition to CO_2 control

Feature	Benefit
Infrared CO_2 Sensor	Precise CO_2 control, fast response to door openings
Zirconia O_2 Control	Non-depleting design for precise O_2 control, fast response to door openings
Inner Doors	Multiple chamber inner doors minimize loss of balanced interior atmosphere during routine door openings

Model MCO-18M

Model Number	Chamber/ Volume	Exterior Dimensions	Contamination Control	CO_2 Control	O_2 Control	Voltage, Power Connection
MCO-5M	1.7 cu.ft.	18.9"W x 21.6"D x 22.4"H	Optional SafeCell™ UV with ultraviolet light, inCu saFE™ copper-enriched stainless steel interior	thermal conductivity	zirconia sensor with P.I.D./R.™ recovery	115V NEMA 5-15
MCO-18M	Single, 6.0 cu.ft.	24.4"W x 28"D x 35.4"H		infrared with P.I.D./R.™ recovery		
MCO-36M	Double, 6.0 cu.ft.	24.4"W x 28"D x 70.8"H				

SANYO Model MCO-5M/18M/36M Series CO_2/O_2 incubators employ multiple sensor technologies to achieve *in vitro* simulation of the *in vivo* environment.

MCO-Series CO_2 and CO_2/O_2 incubators have received U.S. Food and Drug Administration 510(k) clearance for *in vitro* fertilization applications in accordance with the FDA Safe Medical Devices Act of 1990 and the Medical Device Amendments of 1992.

Reference: Number K013703. Regulation Number: 21 CFR 884-6120, Assisted Reproduction Accessories, Regulatory Class II, Product Code 85MOG, October 30, 2001.

INCUBATORS, HEATED AND REFRIGERATED

Programmable for multifunction laboratory applications

Model MIR-253

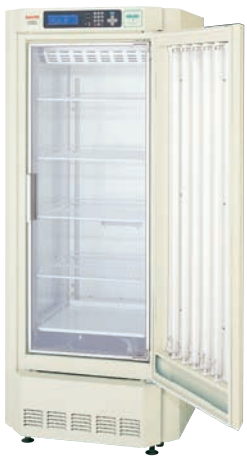
Feature	Benefit
Programmable	Multiple setpoints and cycling for a variety of laboratory functions
P.I.D. Controller	Microprocessor-based P.I.D. (proportional, integral, derivative) control with digital input, full-function alarm and monitoring
SANYO-Brand Refrigeration	Built by SANYO for long-lasting, dependable operation in demanding laboratory environments

Model Number	Volume	Exterior Dimensions	Heated	Refrigerated	Programmable Temperature	Voltage, Power Connection
MIR-153	4.4 cu.ft.	27.6"W x 22.8"F-B x 40.1"H		•	-10°C to 50°C	115V NEMA 5-15
MIR-253	9.0 cu.ft.	27.6"W x 22.8"F-B x 63.7"H		•	-10°C to 50°C	
MIR-553	14.3 cu.ft.	31.5"W x 32.8"F-B x 71.3"H		•	-10°C to 50°C	
MIR-162	3.3 cu.ft.	22.8"W x 23.4"F-B x 32.3"H	•		5°C above ambient to 80°C	
MIR-262	5.4 cu.ft.	28.7"W x 25.4"F-B x 34.3"H	•		5°C above ambient to 80°C	

SANYO MIR-Series Incubators are designed for general laboratory applications requiring fixed setpoint or cycling temperature control. A selection of five cabinet sizes offers programmed operation and integrated refrigeration for a wide temperature range.

PLANT GROWTH CHAMBER

For simulation of cyclical environmental conditions



Model MLR-351H

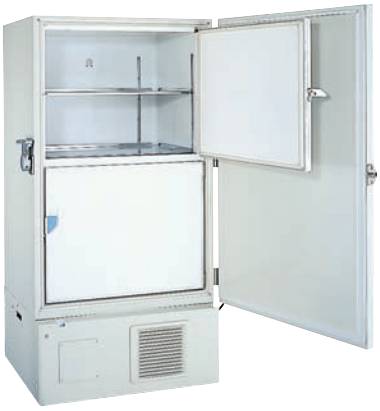
Feature	Benefit
Microprocessor P.I.D. Control	Allows accurate, reproducible and flexible programming of all performance parameters with optimal energy management; comprehensive security monitoring and alarm functions are standard
Forced Air Circulation	Maximizes temperature uniformity at all shelf levels
Programmable	Nine user programmable steps allow simulation of environmental conditions; fifteen variable intensity fluorescent lamps create uniform lighting
Ergonomic Design	Slim-profile cabinet offers sophisticated performance in minimal space

The Model MLR-Series humidified plant growth chamber has a temperature range* of 0ºC to 50ºC, with programmable lighting for diurnal protocols in plant and insect cell culture applications.

Model Number	MLR-351H
Effective Capacity	10.4 cu.ft.
Exterior Dimensions	29.9"W x 27.6"F-B x 72.2"H
Temperature Range* Lamp OFF	0°C to +50°C
Temperature Range* Lamp ON	10°C to +50°C
Humidity Control Range	55% to 90%RH
Lighting Range	0 to 20,000 lux
Voltage	115V
Power Connection	NEMA 5-20

V.I.P.® SERIES SPACE SAVING -86°C ULTRA-LOW FREEZERS

High-density ultra-low storage solutions for the laboratory



Model MDF-U73VC

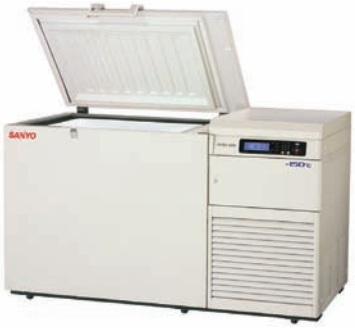
Feature	Benefit
Patented V.I.P.® Vacuum Panel Insulation	Combination of multiple high-performance vacuum panels with high-density foam insulation achieves thin-wall profile for maximum interior volume in compact footprint
Microprocessor	Comprehensive setpoint, alarm, monitoring and diagnostic functions supervised by SANYO-built microprocessor controller with digital display of all input/output function
SANYO-Designed Compressors	Designed by SANYO specifically for ultra-low temperature applications in a rugged laboratory environment; CFC-free refrigerants only

Model Number	MDF-U32V	MDF-U52VA	MDF-U53VC	MDF-U73VC
Volume	11.8 cu.ft.	18.3 cu.ft.	18.3 cu.ft.	25.7 cu.ft.
Voltage	115V	115V	208/230V	208/230V
Exterior Dimensions	26.4"W x 34.1"F-B x 73.2"H	30.3"W x 34.4"F-B x 78.3"H	30.3"W x 34.4"F-B x 78.3"H	39.8"W x 34.4"F-B x 79.1"H
Power Connection	NEMA 5-15	NEMA 5-20	NEMA 6-15	NEMA 6-15
2" Boxes	216	352	352	576
3" Boxes	168	224	224	384
2ml Vials in Boxes	21,600	35,200	35,200	57,600

SANYO V.I.P.® ultra-low temperature freezers offer the most advanced combination of low-temperature refrigeration, cabinet and control technology in the life science industry. Space-saving, high-density V.I.P.® vacuum insulation panel construction allows more storage volume in the same or less floor space than conventional freezers.

CRYOGENIC FREEZERS, -150°C

Cost-effective alternative to liquid nitrogen vapor for long-term storage at temperatures safely below the water recrystallization point



Model MDF-C2156VANC

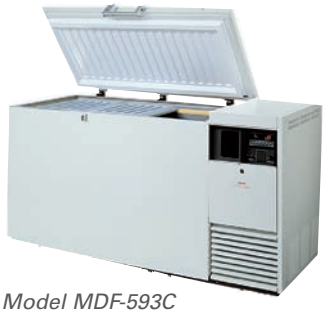
Feature	Benefit
Uniform Cryogenic Temperatures	Mechanically refrigerated design promotes better top-to-bottom uniformity than liquid nitrogen vapor-phase storage
Mechanical Refrigeration	Lowers LN_2 consumption and mitigates safety concerns, reduces cost of ownership, minimizes chance of cross-contamination among stored samples due to vial breakage at extreme temperatures
SANYO-Designed Refrigeration	Designed by SANYO specifically for rugged cryogenic temperature applications in a laboratory environment; CFC-free refrigerants only
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with intuitive LCD display of all input / output functions
Built-In LN_2 Back-Up System	Automatically injects LN_2 to maintain temperature during prolonged power outage. (*LN_2 tank not included)*

Model Number	MDF-C2156VANC
Temperature	-150°C
Volume	8.2 cu.ft.
Exterior Dimensions	68.1"W x 30.1"F-B x 39.8"H
Voltage	208/230V
Power Connection	NEMA 6-15
2" Boxes	150
3" Boxes	105
2ml Vials in Boxes	15,000

SANYO MDF-Series cryogenic freezers maintain uniform temperature of -150ºC for stable, long-term preservation of cells and tissues. SANYO V.I.P. PLUS™ Cryogenic Series -150°C ultra-low temperature freezers achieves up to 25% more storage capacity than a conventionally insulated freezer without increasing the footprint. Precise operation via graphic LCD control panel (Adjustable High/Low temperature alarm Power failure alarm; Filter check alarm; Door ajar alarm; Part replacement time notification). Equipped with LN2 backup system.

MDF SERIES -86°C ULTRA-LOW FREEZERS (CHEST)

Chest models with standard & VIP+ insulation



Model MDF-593C

Model MDF-C8V

Feature	Benefit
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with digital display of all input/output functions
SANYO-Designed Refrigeration	Designed by SANYO specifically for rugged ultra-low temperature applications in a laboratory environment; CFC-free refrigerants only
Integrated Cabinet Design	High performance refrigeration system with foamed-in-place cabinet insulation maximizes interior temperature uniformity and protects against fluctuating ambient temperatures

Model Number	MDF-C8V*	MDF-192	MDF-593C	MDF-793C
Volume	3.0 cu.ft.	3.0 cu.ft.	17.2 cu.ft.	24.8 cu.ft.
Exterior Dimensions	21.6"W x 27.0"F-B x 37.2"H	29.5"W x 27.6"F-B x 37.2"H	79.1"W x 30.3"F-B x 42.1"H	101.2W x 30.3"F-B x 42.1"H
Voltage	115V	115V	208/230V	208/230V
Power Connection	NEMA 5-15	NEMA 5-15	NEMA 6-15	NEMA 6-15
Capacity				
2" Boxes	42	63	351	507
3" Boxes	30	45	243	351
2ml Vials in Boxes	4,000	6,300	35,100	50,700

SANYO MDF-Series ultra-low temperature freezers maintain internal temperatures as low as -86°C (-123°F). All models use SANYO designed compressors for ultra-low temperature applications. Manufactured with foamed-in-place insulation, they are ideally suited for use in hospitals and laboratories for long-term preservation and storage of blood, specimens and components, as well as materials testing.

**SANYO's advanced insulation system V.I.P. PLUS™ reduces the thickness of insulation to approximately one half compared to conventional systems. A new cooling circuit makes the inconvenient customer maintenance procedure of filter cleaning unnecessary. Newly developed single-compressor system achieves an approximately 40% reduction in power consumption and enables low-noise operation.*

MDF SERIES -86°C ULTRA-LOW FREEZERS (UPRIGHT)

Upright models with standard insulation

Model MDF-U7386SC

Feature	Benefit
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with digital display of all input/output functions
SANYO-Designed Refrigeration	Designed by SANYO specifically for rugged ultra-low temperature applications in a laboratory environment; CFC-free refrigerants only
Integrated Cabinet Design	High performance refrigeration system with foamed-in-place cabinet insulation maximizes interior temperature uniformity and protects against fluctuating ambient temperatures

Model Number	MDF-U7386SC	MDF-U5386SC
Volume	23.5 cu. ft.	17.1 cu. ft.
Exterior Dimensions	44.5"Wx34.4"Dx78.3"H	35.0"Wx34.4"Dx78.3"H
Voltage	208v	230V
Power Connection	NEMA 6-15	NEMA 6-15
Capacity		
2" Boxes	480	320
3" Boxes	366	192
2ml Vials in Boxes	4800	3200

SANYO MDF-Series ultra-low temperature freezers maintain internal temperatures as low as -86°C (-123°F). All models use SANYO designed compressors for ultra-low temperature applications. Manufactured with foamed-in-place insulation, they are ideally suited for use in hospitals and laboratories for long-term preservation and storage of blood, specimens and components, as well as materials testing.

BIOMEDICAL FREEZERS, -30°C

Designed for general laboratory applications

Model MDF-U730

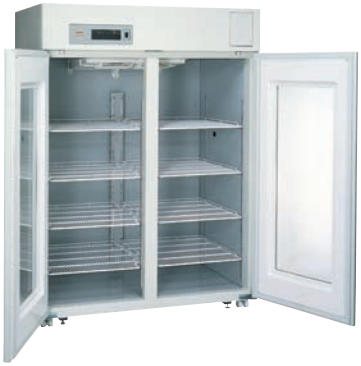
Feature	Benefit
SANYO-Designed Refrigeration	Designed by SANYO with compressors specifically for storage applications in a laboratory environment; CFC-free refrigerants only
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with digital display of all input/output functions
High Performance Refrigeration	Laboratory quality refrigeration assures stable, uniform temperatures throughout the chamber

Model Number	Exterior Dimensions	Chest, -35°C	Upright, -30°C	Voltage, Power Connection
MDF-136	25.2"W x 27"F-B x 34.7"H	4.9 cu.ft.		115V NEMA 5-15
MDF-236	35.6"W x 27"F-B x 34.7"H	7.8 cu.ft.		
MDF-436	49.8"W x 31.8"F-B x 35.6"H	15.0 cu.ft.		
MDF-U333	24" Wx 28.9"F-B x 63.8"H		9.7 cu.ft.; single door, single chamber	
MDF-U537	31.7"W x 30.4"F-B x 70.9"H		17.0 cu.ft.; double door, single chamber	
MDF-U537D	31.7"W x 30.4"F-B x 70.9"H		16.0 cu.ft.; double door, double chamber	
MDF-U730	30.3"W x 32.7"F-B x 77"H		22.3 cu.ft.; single door, single chamber	

SANYO MDF-Series Biomedical Freezers include chest and upright models designed for short or intermediate term storage at temperatures as low as -35°C. Constructed with high-performance laboratory grade refrigeration systems, these freezers are used in medical, biotechnology and industrial labs for short to intermediate storage of blood components, enzymes, culture media, reagents, specimens and vaccines.

LABORATORY REFRIGERATORS

Lab-ready with microprocessor control, alarm and monitoring, casters, access ports and interior lights



Model MPR-1410

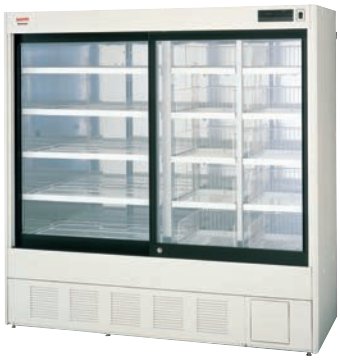
Feature	Benefit
Forced Air Circulation	Interior blower fans quickly restore temperature uniformity following routine door openings
Adjustable Temperature Control	SANYO-built microprocessor controller, temperature range 2°C to 23°C, with comprehensive setpoint, alarm, monitoring and diagnostic functions with digital display of all input/output functions
SANYO Cycle Defrost	Unique on-demand defrost initiates only as required; maintains internal temperature uniformity during process
SANYO-Designed Compressors	Designed by SANYO specifically for demanding laboratory applications; CFC-free refrigerants only
Inventory Control	Choice of stainless steel roll-out drawers or adjustable wire shelves

Model Number	MPR-720	MPR-720R	MPR-1410	MPR-1410R
Volume	24.2 cu.ft.	23.7 cu.ft.	48.4 cu.ft.	48.2 cu.ft.
Exterior Dimensions	30.3"W x 32.7"F-B x 77"H	30.3"W x 32.7"F-B x 77"H	56.7"W x 32.7"F-B x 76.8"H	56.7"W x 32.7"F-B x 76.8"H
Adjustable Wire Shelves	4	–	8	–
Solid Roll-Out Drawers	–	5	–	10
Glass Door	single, swinging	single, swinging	double, swinging	double, swinging
Voltage	115V			
Power Connection	NEMA 5-15			

Large-capacity laboratory refrigerators offer stable and reliable refrigerated environments for exacting laboratory requirements in clinical, research, pharmaceutical and industrial applications.

PHARMACY REFRIGERATORS

Ergonomic design offers temperature stability with safe, secure and easy inventory management



Model MPR-1013

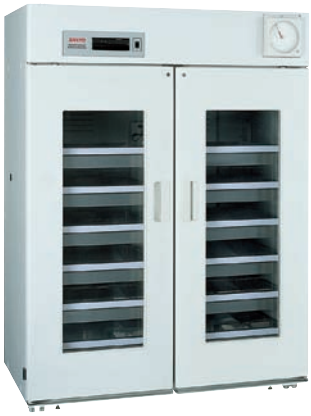
Feature	Benefit
Forced Air Circulation	Quickly restores temperature uniformity following routine door openings
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with digital display of all input/output functions, adjustable temperature range 2ºC to 14ºC
SANYO Cycle Defrost	Unique on-demand defrost initiates only as required; maintains internal temperature uniformity during process
SANYO-Designed Compressors	Designed by SANYO specifically for clinical applications in a pharmacy environment; CFC-free refrigerants only
Inventory Control	Stainless steel interior construction with roll-out or adjustable wire shelves

Model Number	Exterior Dimensions	Volume	Door	Wire Shelves	Voltage, Power Connection
MPR-1013	70.9"W x 23.6"F-B x 70.5"H	36.5 cu.ft.	dual, sliding glass	adjustable	
MPR-1013R	70.9"W x 23.6"F-B x 70.5"H	36.5 cu.ft.	dual, sliding glass	roll-out	
MPR-513	35.4"W x 23.6"F-B x 70.5"H	17.2 cu.ft.	dual, sliding	adjustable	115V
MPR-513R	35.4"W x 23.6"F-B x 70.5"H	17.2 cu.ft.	dual, sliding	roll-out	NEMA 5-15
MPR-311D(H)	31.4"W x 17.7"F-B x 70.5"H	12.0 cu.ft.	dual, sliding glass	adjustable	

SANYO pharmacy refrigerators feature stable temperature control and uniformity with convenient sliding-glass doors and key locks for security.

BLOOD BANK REFRIGERATORS

Designed to meet AABB and ANRC criteria for safety and performance



Model MBR-1404GR

Feature	Benefit
Inner Doors	Plexiglass inner doors offer additional interior chamber temperature protection during door openings
Forced Air Circulation	Interior blower fans quickly restore temperature uniformity following routine door openings
Temperature Recorder	Built-in recorder provides a permanent record of cabinet temperature
Microprocessor Temperature Control	SANYO-built microprocessor controller with comprehensive alarm, monitoring and diagnostic functions with digital display
SANYO-Designed Refrigeration	Designed by SANYO with compressors specifically designed for blood bank storage; CFC-free refrigerants only
SANYO Cycle Defrost	Unique on-demand defrost initiates only as required; maintains internal temperature uniformity during process

Model Number	MBR-107D(H)	MBR-304GR	MBR-704GR	MBR-1404GR
450ml Bag Capacity	32	120	360	720
Volume	2.8 cu.ft.	10.6 cu.ft.	21.8 cu.ft.	45.4 cu.ft.
Exterior Dimensions	15.7"W x 19.5"F-B x 59.6"H	23.6"W x 26.8"F-B x 72.2"H	30.3"W x 32.7"F-B x 77"H	56.7"W x 32.7"F-B x 76.8"H
Stainless Steel Roll-Out Drawers	n/a	5	6	12
Shelves	4			
Swinging Glass Doors, Dual Pane, With Lock	1	1	1	2
Inner Doors	2	2	3	6
Voltage	115V			
Power Connection	NEMA 5-15			

SANYO blood bank refrigerators are designed to create stable, reliable temperature control pre-set to 4ºC with precise top-to-bottom temperature uniformity.

BIOMEDICAL REFRIGERATOR WITH FREEZER COMBINATION

Designed for storage of vaccines and pharmaceuticals in the hospital, laboratory or medical office

Model MPR-414F

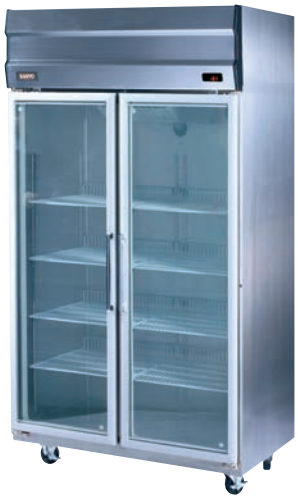
Feature	Benefit
SANYO Cycle Defrost	Initiates defrost on-demand, maintains internal temperature uniformity during process of
SANYO-Designed Refrigeration	With SANYO-designed compressors, allows differential control of individual refrigerator and freezer compartments
Microprocessor Controls	Comprehensive setpoint, alarm, monitoring and diagnostic functions based on SANYO-built microprocessor controller with digital display of all input/output functions
Validatable Storage	Laboratory grade, integrated systems are designed to assure stored product safety

Model Number	Volume (Cu.Ft.)		Exterior Dimensions	Temperature Range		Voltage, Power Connection
	Refrigerator	Freezer		Refrigerator (Forced Air)	Freezer (Cold Wall)	
MPR-214F	6.2	1.4	21.3"W x 21.9"F-B x 70.5"H	2°C to 14°C	-20°C to -30°C	115V NEMA 5-15
MPR-414F	12.0	2.9	31.5"W x 23.6"F-B x 71.1"H			

When space is at a premium, SANYO refrigerator with freezer combination offer convenience and performance in an attractive, space-saving design.

GENERAL PURPOSE REFRIGERATORS & FREEZERS

Designed for general purpose storage applications in the laboratory



Model SRR-49GD-MED

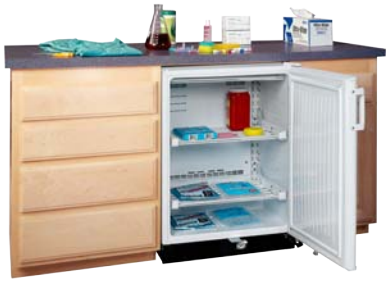
Feature	Benefit
Large interior	Greater flexibility in cold storage
Heavy Duty Refrigeration	Designed for frequent door opening applications
Stainless Steel Construction	Durable exterior and interior surfaces
Adjustable Temperature Control	Microprocessor temperature control with LED readout and alarm functions.

Model Number	Exterior Dimensions	Volume	Door	Wire Shelves	Voltage, Power
+4°C Refrigerators					
SRR-23GD-MED	29.1"W x 31.7"F-B x 79.25"H	21 cu.ft.	single glass, swing	4 adjustable	
SRR-23FD-MED	29.1"W x 31.7"F-B x 79.5"H	21 cu.ft.	single solid, swing	4 adjustable	
SRR-49GD-MED	49.6"W x 31.7"F-B x 79.25"H	40 cu.ft.	double glass, swing	8 adjustable	115V
SRR-49FD-MED	49.6"W x 31.7"F-B x 79.5"H	40 cu.ft.	double solid, swing	8 adjustable	NEMA 5-15
SRR-72GD-MED	74.8"W x 31.7"F-B x 79.25"H	61 cu.ft.	triple glass,swing	12 adjustable	
-20°C Freezers					
SRF-23FD-MED	29.1"W x 31.7"F-B x 79.25"H	21 cu.ft.	single solid, swing	4 adjustable	115V
SRF-49FD-MED	49.6"W x 31.7"F-B x 79.5"H	40 cu.ft.	double solid, swing	8 adjustable	NEMA 5-15

SANYO General Purpose Refrigerators are designed for general purpose storage applications in clinical, life science, pharmaceutical, biotechnology, and industrial laboratories. Feature reliable heavy duty refrigeration systems for frequent door openings with optional duplex power outlet for Chromotography applications.

Convenient compact refrigeration in a laboratory environment

Model SF-L6111W



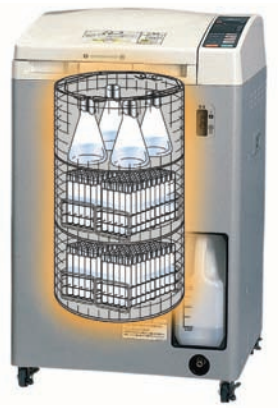
Model SR-L6111W

Feature	Benefit
Compact Design	Allows for easy installation undercounter, counter top, or within the knee-well of laboratory cabinetry
SANYO Refrigeration	Energy efficient, whisper quiet operation
Convenient Storage	Door shelves and standard shelving maximize product storage capacity

Model Number	Volume	Exterior Dimensions	Temperature	Voltage, Power Connection	Display	Lock
SR-L6111W	6.1 cu.ft.	23.6"W x 22.5"F-B x 34.5"H	1°C to 14°C Microprocessor		yes	yes
SR-L4110W	4.9 cu.ft.	21.4"W x 22.8"F-B x 33.8"H	4°C	115V	no	no
SR-L4110WSEC	4.9 cu.ft.	21.4"W x 22.8"F-B x 33.8"H	4°C		no	yes
SF-L6111W	6.1 cu.ft.	23.6"W x 22.5"F-B x 34.5"H	-15°C to -25°C Microprocessor		yes	yes
HF-5015W	5.0 cu.ft.	21.4"W x 25.4"F-B x 33.4"H	-20°C	NEMA 5-15	no	no
HF-5015WSEC	5.0 cu.ft.	21.4"W x 25.4"F-B x 33.4"H	-20°C		no	yes

Designed for the demanding standards of clinical, life science, pharmaceutical, biotechnology, and industrial laboratories.

Easily mobile for sterilization on demand



Model MLS-3780

Feature	Benefit
Microprocessor Controls	Assures correct temperature is accurately maintained and easily operated with one-touch operation
Programmable	Allows maximum flexibility in ramp up, dwell, ramp down and cool-off protocols
Compact Design	Maximizes use of available lab floor space, stores easily when not in use
Low-Profile & Ergonomic Swing-Up Lid	Simplifies access, easy to load and unload Opens chamber to 100% access; eliminates side space requirement

Model Number	MLS-3750	MLS-3780
Effective Capacity	50 liters	75 liters
Exterior Dimensions	23.6"W x 22"F-B x 29.7"H	23.6"W x 22"F-B x 38.5"H
Voltage	115V	208/230V
Power Connection	NEMA L5-30	NEMA L6-30
Maximum Temperature	135°C	135°C
Baskets (Included)	2	3
Flask Capacity (1 liter)	8	12
Cross Section	14.6" (37 cm)	14.6" (37 cm)

SANYO MLS-Series top-loading autoclaves are a popular method of sterilization for today's research laboratories. Self-contained and easy to use, these reliable, energy-saving autoclaves are ideal for a wide range of applications, including liquid culture media preparation, labware and waste sterilization. Designed to meet good laboratory practice criteria in biotechnology, pharmaceutical and clinical laboratories, SANYO MLS-Series portable autoclaves deliver high pressure steam with speed, efficiency and reliability.

OPTIONAL ACCESSORIES

Temperature Recorder/Mounting Brackets

Recorder Chart Type	Circular Chart		Strip Chart Recorder			
Model Number	**MTR-C954**	**MTR-C955**	**MTR-0620LH**	**MTR-4014LH**	**MTR-85H**	**MTR-155H**
Recording Range	Selectable	Selectable	-6°C to +20°C	-40°C to +14°C	-100°C to +0°C	-170°C t +30°C
Duration	7 Day	7 Day	32 Day	32 Day	60 Day	60 Day
Pen/Stylus	1 Pen	2 Pen	1 Stylus	1 Stylus	1 Pen	1 Pen
Applicable to Models	MDF-U5386SC MDF-U7386SC MPR-513/513R MPR-1013/1013R MPR-720/720R MPR-1410/1410R MDF-U537 MDF-U730 MDF-136/236/436 MDF-192 MDF-593/793 MDF-U32V MDF-U52VA/52VC MDF-U72VC	MPR-214F MPR-414F MDF-U537D	MPR-214F(refig) MPR-414F(refig)) MPR-311D(H) MPR-513/513R MPR-1013/1013R MPR-720/720R MPR-1410/1410R	MPR-214F(freezer) MPR-414F(freezer) MDF-U333 MDF-U537 MDF-U537D(2required) MDF-136/236/436	MDF-U5386SC MDF-U7386SC MDF-192 MDF-593/793 MDF-U32V MDF-U52VA/52VC MDF-U72VC	MDF-1155
Chart Paper			RP-06	RP-40	RP-85H	RP-155
for +4°C Refrigerators for -30°C Freezers	C7-38+17-6 C7-40+30-6*REV					
for Combonation Units for -86°C Freezers	C7-100+38-6*REV	C7-40+30-6*REV				
Recording Pens	R25-2(red) R25-3(blue)	R25-2(red) R25-3(blue)	n/a (inkless chart)	n/a (inkless chart)	DF-38FP	DF-38FP

Incubator Accessories/Options

Model Number	MCO-5AC	MCO-17AC	MCO-18AIC	MCO-20AIC	MCO-5M	MCO-18M
Roller Base	MCO-5RB	MCO-18RB	MCO-18RB	MCO-20RB	MCO-5RB	MCO-18RB
Individual inner doors	—	—	MCO-18ID	MCO-20ID	—	—
Extra Shelf	MCO-30ST	MCO-46ST	MCO-46ST	MCO-58ST	MCO-30ST	MCO-46ST
Shelf Half Tray	—	—	MCO-25ST	MCO-35ST	—	MCO-25ST
CO_2 tank regulator	MCO-100L	MCO-100L	MCO-100L	MCO-100L	MCO-100L	MCO-100L
N_2 tank regulator	—	—	—	—	MCO-100N	MCO-100N
O_2 tank regulator	—	—	—	—	MCO-100M	MCO-100M
CO2 tank switcher	MCO-5GC	—	MCO-21GC	MCO-21GC	MCO-5GC	MCO-21GC
UV sterilization kit	MCO-18UVS2	—	MCO-18UVS2	MCO-18UVS2	MCO-18UVS2	MCO-18UVS2

ULT-Freezer Back-up Kits

Model Number	
CVK-UB2(I)	Liquid CO_2 Back-up system for upright and chest -86ÞC freezers
CVK-UBN2	Liquid N_2 Back-up system for upright and chest -86ÞC freezers