External dimensions (W × U × H)**27.6 × 22.8 × 0.1 (inch)31.5 × 32.8 × 1.3 (inch)Internal dimensions (W × U × H) $620 \times 3268 \times 555 (mn)$ $24.4 × 14.5 × 2.1 (inch)27.6 \times 22.8 \times 63.7 (inch)640 \times 550 \times 1140 (mn)24.4 × 14.5 × 2.2 (inch)640 \times 550 \times 1140 (mn)24.4 × 14.5 × 2.4 S (inch)Effective capacity123 liters (4.3 cu.ft.)238 liters (8.4 cu.ft.)40.6 liters (14.3 cu.ft.)Exterior finishGalvanised steel with baked-on finish40.6 liters (14.3 cu.ft.)Interior finishGalvanised steel with baked-on finish, triple-pane glassGalvanised steel with baked-on finish, triple-pane glassShelves355InsulationFoamed-in-place rigid polyurethane5Circulation systemForamed-in-place rigid polyurethane5CompressorSingle phase, Output 150 WSingle phase, Output 250Single phase, Output 250EvaporatorCord heater 141 WCord heater 218 WCord heater 322 WTemperature setting indicationWire and tube type, norred are circulationCord heater 322 WTemperature setting indicationMicroprocessor PID system (when compressor operates, ON-OFF control)Temperature setting indicationUser temperature setting indication12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.Temperature setting indication12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.Temperature setting indication12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.Temperature setting indication12-step repeat from 1 - 98 times or unlimi$		Model No.			Specifications
220 V − 240 V, 50 Hz (CE)         MIR-154-PE         MIR-254-PE         MIR-554-PE           External dimensions (W x D x H)*1         700 x 580 x 1018 (mm) 27 & x 22 x 8.3 (ln ch)         700 x 580 x 1018 (mm) 27 & x 22 x 8.3 (ln ch)         800 x 832 x 1310 (mh) 37 & x 22 x 8.3 (ln ch)         800 x 832 x 1310 (mh) 37 & x 22 x 8.3 (ln ch)         800 x 832 x 1310 (mh) 37 & x 22 x 8.3 (ln ch)         35 x 32 x 7.1 x (sh 5 x 32 k 7.1 3) (mh) 32 & x 11 x (sh 5 x 21 k 7 x 45) (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 21 7 x 450 (in ch) 25 x 21 7 x 450 (in ch)         25 x 11 20 x 11		-	MIR-254-PA	MIR-154-PA	115 V, 60 Hz
External dimensions (W x D x H)*1         270 x 580 x 1018 (mm) 27.6 x 22.8 x 40.1 linch)         700 x 580 x 1018 (mm) 27.6 x 22.8 x 43.7 linch)         900 x 832 x 1010 (mm) 31.5 x 32.8 x 71.3 (inch)           Internal dimensions (W x D x H)         620 x 384 x 555 (mm) 24.4 x 14.5 x 21.9 (inch)         620 x 388 x 1088 (mm) 24.4 x 14.5 x 42.8 (inch)         620 x 368 x 1088 (mm) 24.4 x 14.5 x 42.8 (inch)         620 x 368 x 1080 (mm) 25.2 x 21.7 x 45.7 (inch           Effective capacity         123 litrer (8.4 cu.ft.)         238 litrer (8.4 cu.ft.)         406 litrer (14.3 cu.ft.)           Exterior finish		MIR-554-PK	MIR-254-PK	MIR-154-PK	220 V, 60 Hz
External dimensions (W X D X H) ***27.6 x 22.8 x 40.1 (inch)21.6 x 22.8 x 13.0 (inch)31.6 x 32.8 x 13.0 (inch)Internal dimensions (W X D X H) $620 x 368 x 555 (mm)$ $24.4 x 14.5 x 22.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 22.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)24.4 x 14.5 x 42.8 (inch)640 x 550 x 1140 (mm)25.2 x 21.7 x 45.7 (inch)Exterior finish0 = 33 x 15 x 140 (mm)640 x 550 x 1140 (mm)640 x 550 x 1140 (mm)DoorGalvanised steel with baked on finishtime-pane glass6a vanised steel with baked on finishShetves07 formed iner, adjustable6a vanised steel with baked on finishCirculation system- Formed in regid polyurethaneFormed air circulation5Compressor- Formed air circulation- Single phase, Output 150 WSingle phase, Output 250Condenser- Wirre and tube type, forced circulationDefrosting system- Cord heater 141 WCord heater 218 WCord heater 322 WTemperature setting indication- Wirre and tube type, forced circulationUtamezis esting temperature atarmWhen temperature variat and udible atarmOver temperature setting indication- Cord heater 141 WCord heater 322 WTemperature setting indication- Wirre and tube type internat in a udible atarmOver temp$		MIR-554-PE	MIR-254-PE	MIR-154-PE	220 V—240 V, 50 Hz (CE)
Internal amensions (W X D X H)24.4 x 14.5 x 21.9 (inch)24.4 x 14.5 x 42.8 (inch)25.2 x 21.7 x 45.7 (inch)Effective capacity123 liters (8.4 cu.ft.)238 liters (8.4 cu.ft.)40.6 liters (14.3 cu.ft.)Exterior finishGalvanised steel with baked-on finish, triple-pane glassGalvanised steel with baked-on finish, triple-pane glassDoorGalvanised steel with baked-on finish, triple-pane glassGalvanised steel with baked-on finish, triple-pane glassGalvanised steel with baked-on triple-pane glassShelvesS55InsulationSS5Insulation systemFored-in-place rigid polyurethaneSingle phase, Output 250 WSingle phase, Output 250 WCompressorSingle phase, Output 150 WSingle phase, Output 250 WSingle phase, Output 250 WEvaporatorSingle phase, Output 150 WSingle phase, Output 250 WSingle phase, Output 250 WEvaporatorCord heater 141 WCord heater 218 WCord heater 322 WTemperature setting indicationMicroprocessor Pusytem (when compressor operates, OFF control)Temperature setting with keylock, digital displayTemperature setting indicationMicroprocessor Pusytem (when compressor operates, OFF control)Temperature setting indicationAutomatic setting temperature alarmWhen temperature dive sum on unimited. Max.10 program memorized.Temperature sensorSister on endition with temperature settires on unimited. Max.10 program memorized.Automatic setting temperature alarmVisual and audible alarmProgrammed operation10.2 cuepr		800 x 832 x 1810 (mm) 31.5 x 32.8 x 71.3 (inch)			External dimensions (W x D x H) $^{*1}$
Exterior finish         Galvanised steel with baked-on finish           Interior finish         Stainless steel           Door         Galvanised steel with baked-on finish, triple-pane glass         Galvanised steel with baked-on finish, triple-pane glass           Door         Galvanised steel with baked-on finish, triple-pane glass         Galvanised steel with baked-on finish, triple-pane glass with bokerva           Shelves         Polyethylene coated steel wire, adjustable           Shelves         Stainless steel         Galvanised steel with baked-on finish, triple-pane glass           Shelves         Polyethylene coated steel wire, adjustable           Shelves         Stainless steel           Circulation system         Forced air circulation           Compressor         Hermetic type           Condenser         Manual / Automatic           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 322 W           Temperature setting indication         Thermistor           Automatic setting temperature alarm         When end tube type, for ed circulation           Cord heater 141 W         Cord heater 322 W		640 x 550 x 1160 (mm) 25.2 x 21.7 x 45.7 (inch)		· · · · · · ·	Internal dimensions (W x D x H)
Interior finish         Stainless steel         Galvanised steel with baked-on finish, triple-pane glass         Galvanised steel with baked-on f	.)	406 liters (14.3 cu.ft.)	238 liters (8.4 cu.ft.)	123 liters (4.3 cu.ft.)	Effective capacity
Door         Galvanised steel with baked-on finish, triple-pane glass         Galvanised steel with baked-or triple-pane glass           Shelves         3         5         5           Insulation         Foamed-in-place rigid polyurethane         5         5           Circulation system         Forced air circulation         5         5           Compressor         Single phase, Output 150 W         Single phase, Output 250 W			Galvanised steel with baked-on finish		Exterior finish
Door         Galvanised steel with baked-on finish, triple-pane glass         triple-pane glass           Shelves         3         5         5           Insulation         5         5           Insulation system         Forced air circulation         5           Compressor         Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Hermetic type         5         5           Defrosting system         Wire and tube type, forced circulation         5           Defrosting system         Manual / Automatic         5           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Temperature setting indication           Temperature sensor         Microprocessor PID system (when compressor operates, ON-OFF control)         Temperature sensor operates and audible alarm           Over temperature protection device         Visual and audible alarm         So (Circulation audible alarm           Programmed operation         12-step reset rom 1 - 98 times or unlimited. Max. 10 programs memorized.         Temperature range           -10°C to +60°C (Ambient temperature : 5°C to +35°C, no load]         11.5 degrees at Compressor ON-OFF control (SV 5°C, Ambient temperature : 20°C, no load] <th></th> <th colspan="3">Stainless steel</th> <th>Interior finish</th>		Stainless steel			Interior finish
Shelves         3         5         5           Insulation         Foamed-in-place rigid polyurethane         5           Circulation system         Forced air circulation         6           Compressor         Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Fin and tube type, forced circulation         Condenser           Defrosting system         Manual / Automatic         Heater           Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Temperature sensor           Automatic setting temperature alarm         When temperature deviates more than ±1.0° C to ±5.0°C, visual and audible alarm         Over temperature protection device           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature range         -0° C to +60° C (Ambient temperature: 5° C, no load]           ±0.2 degrees at Heater PID control [SV 50° C, Ambient temperature: 20° C, no load]         ±0.5 degrees [Setting temperature 37° C, Ambient temperature: 20° C, no load]           Temperature fuctuation         ±0.5 degrees [Setting temperature 37° C, Ambient temperature: 20° C, no load]         15 W x 1, Fluorescent lamp [Setting temperature: 20° C, no load]	,	Galvanised steel with baked-on f triple-pane glass with observatio	-on finish, triple-pane glass	Galvanised steel with baked	Door
Insulation         5         5           Insulation         Foamed-in-place rigid polyurethane         Insulation         Insulatio		Polyethylene coated steel wire, adjustable			Shelves
Circulation system         Forced air circulation           Compressor         Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Fin and tube type, forced circulation         Condenser           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Temperature setting indication           Temperature sensor         Microprocessor PID system (when compressor operates, ON-OFF control)         Temperature sensor           Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm           Over temperation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature range         -10°C to ±60°C (Ambient temperature: ±5°C, no load)           ±0.2 degrees at Heater PID control [SV 50°C, Ambient temperature: 20°C, no load]         ±1.5 degrees at Compressor ON-OFF control [SV 50°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees [Setting temperature 37°C, Ambient temperature: 20°C, no load]           Interior lamp         15 K g (172.0 lbs.)         108 kg [238.1 lbs.)         195 kg [429.9 lbs.]		5	5	3	Siletves
Compressor         Hermetic type           Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Fin and tube type, forced circulation           Condenser         Wire and tube type natural air cooling system           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Temperature control           Temperature setsing temperature alarm         Microprocessor PID system (when compressor operates, ON-OFF control)         Temperature sensor           Automatic setting temperature alarm         When temperature deviates more than ±1.0° C to ±5.0°C, visual and audible alarm         Over temperature protection device           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         Temperature range           -10° C to +60° C (Ambient temperature: +5° C to ±35°C, no load)         ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           15 W x 1, Fluorescent lamp (Setting temperature -10°C C to 40°C)         So (2)           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         1		Foamed-in-place rigid polyurethane			Insulation
Compressor         Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Fin and tube type, forced circulation           Condenser         Wire and tube type natural air cooling system           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Cord heater 322 W           Temperature control         Microprocessor PID system [when compressor operates, ON-OFF control]         Temperature sensor           Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm         Over temperature protection device           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         -10°C to ±60°C (Ambient temperature: ±5°C to ±35°C, no load]           Temperature fluctuation         ±0.2 degrees at Heater PID control [SV 5°C, Ambient temperature: 20°C, no load]         ±1.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees [Setting temperature 37°C, Ambient temperature: 20°C, no load]         105 Ky x 1, Fluorescent lamp [Setting temperature -10°C to 6°C C]           Net weight         78 kg [172.0 lbs.]         108 kg [238.1 lbs.]         195 kg [429.9 lbs.]		Forced air circulation			Circulation system
Single phase, Output 150 W         Single phase, Output 250 W         Single phase, Output 250 W           Evaporator         Fin and tube type, forced circulation           Condenser         Wire and tube type, natural air cooling system           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display         Cord heater 322 W           Temperature control         Microprocessor PID system (when compressor operates, 0N-0FF control)         Temperature sensor           Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm         Over temperature protection device           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         -10°C to ±60°C (Ambient temperature: ±5°C to ±35°C, no load)           Temperature fluctuation         ±0.2 degrees at Heater PID control (SV 5°C, Ambient temperature: 20°C, no load)         ±1.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature 20°C, no load)         195 kg (429.9 lbs.)           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)		Hermetic type			Compressor
Condenser         Wire and tube type natural air cooling system           Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display           Temperature control         Microprocessor PID system (when compressor operates, ON-OFF control)           Temperature sensor         Thermistor           Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm           Over temperature protection device         Visual and audible alarm           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature fluctuation         ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±1.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Interior lamp         15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)	50 W	Single phase, Output 250 W	Single phase, Output 250 W	Single phase, Output 150 W	compressor
Defrosting system         Manual / Automatic           Heater         Cord heater 141 W         Cord heater 218 W         Cord heater 322 W           Temperature setting indication         Digital setting with keylock, digital display           Temperature control         Microprocessor PID system (when compressor operates, 0N-OFF control)           Temperature sensor         Thermistor           Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm           Over temperature protection device         Visual and audible alarm           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature fluctuation         ±0.2 degrees at Heater PID control [SV 50°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±1.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load]           Temperature lamp         10.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load]           Interior lamp         15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]           Net weight         78 kg [172.0 tbs.]         108 kg [238.1 tbs.]         195 kg [429.9 tbs.]		Fin and tube type, forced circulation			Evaporator
HeaterCord heater 141 WCord heater 218 WCord heater 322 WTemperature setting indicationDigital setting with keylock, digital displayTemperature controlMicroprocessor PID system (when compressor operates, ON-OFF control)Temperature sensorThermistorAutomatic setting temperature alarmWhen temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarmOver temperature protection deviceVisual and audible alarmProgrammed operation12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized. -10°C to ±60°C (Ambient temperature: ±5°C to ±35°C, no load)Temperature fluctuation±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)Temperature uniformity±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)Interior lamp15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)Net weight78 kg (172.0 tbs.)108 kg (238.1 tbs.)195 kg (429.9 tbs.)		Wire and tube type natural air cooling system		Condenser	
Temperature setting indicationDigital setting with keylock, digital displayTemperature controlMicroprocessor PID system (when compressor operates, ON-OFF control)Temperature sensorThermistorAutomatic setting temperature alarmWhen temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarmOver temperature protection deviceVisual and audible alarmProgrammed operation12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.Temperature fluctuation±0.2 degrees at Heater PID control [SV 50°C, Ambient temperature: 20°C, no load]Temperature uniformity±1.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load]Interior lamp15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]Net weight78 kg [172.0 lbs.]108 kg [238.1 lbs.]195 kg [429.9 lbs.]		Manual / Automatic			Defrosting system
Temperature control       Microprocessor PID system (when compressor operates, ON-OFF control)         Temperature sensor       Thermistor         Automatic setting temperature alarm       When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm         Over temperature protection device       Visual and audible alarm         Programmed operation       12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         Temperature range       -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)         Temperature fluctuation       ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)         Temperature uniformity       ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)         Interior lamp       15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)         Net weight       78 kg (172.0 lbs.)       108 kg (238.1 lbs.)       195 kg (429.9 lbs.)		Cord heater 322 W	Cord heater 218 W	Cord heater 141 W	Heater
Temperature sensor       Thermistor         Automatic setting temperature alarm       When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm         Over temperature protection device       Visual and audible alarm         Programmed operation       12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         Temperature range       -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)         Temperature fluctuation       ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)         Temperature uniformity       ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)         Interior lamp       15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)         Net weight       78 kg (172.0 lbs.)       108 kg (238.1 lbs.)       195 kg (429.9 lbs.)		Digital setting with keylock, digital display		Temperature setting indication	
Automatic setting temperature alarm         When temperature deviates more than ±1.0°C to ±5.0°C, visual and audible alarm           Over temperature protection device         Visual and audible alarm           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature range         -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)           Temperature fluctuation         ±0.2 degrees at Heater PID control [SV 50°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Interior lamp         15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)           Net weight         78 kg [172.0 lbs.]         108 kg [238.1 lbs.]         195 kg [429.9 lbs.]		Microprocessor PID system (when compressor operates, ON-OFF control)		Temperature control	
Over temperature protection device         Visual and audible alarm           Programmed operation         12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.           Temperature range         -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)           Temperature fluctuation         ±0.2 degrees at Heater PID control [SV 50°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±1.5 degrees at Compressor ON-OFF control [SV 5°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees [Setting temperature: 37°C, Ambient temperature: 20°C, no load]           Interior lamp         15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]           Net weight         78 kg [172.0 lbs.]         108 kg [238.1 lbs.]         195 kg [429.9 lbs.]		Thermistor			Temperature sensor
Programmed operation       12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.         Temperature range       -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)         Temperature fluctuation       ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)         Temperature uniformity       ±1.5 degrees at Compressor ON-OFF control (SV 5°C, Ambient temperature: 20°C, no load)         Interior lamp       15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)         Net weight       78 kg (172.0 lbs.)       108 kg (238.1 lbs.)       195 kg (429.9 lbs.)		When temperature deviates more than $\pm 1.0^\circ$ C to $\pm 5.0^\circ$ C, visual and audible alarm			Automatic setting temperature alarm
Temperature range         -10°C to +60°C (Ambient temperature: +5°C to +35°C, no load)           Temperature fluctuation         ±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±1.5 degrees at Compressor ON-OFF control (SV 5°C, Ambient temperature: 20°C, no load)           Interior lamp         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)		Visual and audible alarm			Over temperature protection device
±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)           Temperature fluctuation         ±1.5 degrees at Compressor ON-OFF control (SV 50°C, Ambient temperature: 20°C, no load)           Temperature uniformity         ±0.5 degrees (Setting temperature 37°C, Ambient temperature: 20°C, no load)           Interior lamp         15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)		12-step repeat from 1 - 98 times or unlimited. Max. 10 programs memorized.			Programmed operation
Temperature fluctuation         ±1.5 degrees at Compressor ON-OFF control [SV 5°C, Ambient temperature: 20°C, no load]           Temperature uniformity         ±0.5 degrees [Setting temperature 37°C, Ambient temperature 20°C, no load]           Interior lamp         15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]           Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)					Temperature range
±1.5 degrees at Compressor 0N-0FF control [SV 5°C, Ambient temperature: 20°C, no load]         Temperature uniformity       ±0.5 degrees [Setting temperature 37°C, Ambient temperature: 20°C, no load]         Interior lamp       15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]         Net weight       78 kg [172.0 lbs.]       108 kg [238.1 lbs.]       195 kg [429.9 lbs.]		±0.2 degrees at Heater PID control (SV 50°C, Ambient temperature: 20°C, no load)			<b>T</b>
Interior lamp         15 W x 1, Fluorescent lamp [Setting temperature -10°C to 60°C]           Net weight         78 kg (172.0 lbs.)         108 kg [238.1 lbs.)         195 kg [429.9 lbs.)		±1.5 degrees at Compressor ON-OFF control (SV 5°C, Ambient temperature: 20°C, no load)			Temperature fluctuation
Net weight         78 kg (172.0 lbs.)         108 kg (238.1 lbs.)         195 kg (429.9 lbs.)		±0.5 degrees (Setting temperature 37°C, Ambient temperature 20°C, no load)			Temperature uniformity
		15 W x 1, Fluorescent lamp (Setting temperature -10°C to 60°C)			Interior lamp
		195 kg (429.9 lbs.)	108 kg (238.1 lbs.)	78 kg (172.0 lbs.)	Net weight
Accessories – Key i set		Key 1 set	-	-	Accessories

Caution: PHC Corporation guarantees the product under certain warranty conditions. PHC Corporation is in no way shall be responsible for any loss of content or damage to content Appearance and specifications are subject to change without notice.

\*1 External dimensions of main cabinet only - see dimension drawings showing handles and other external proj

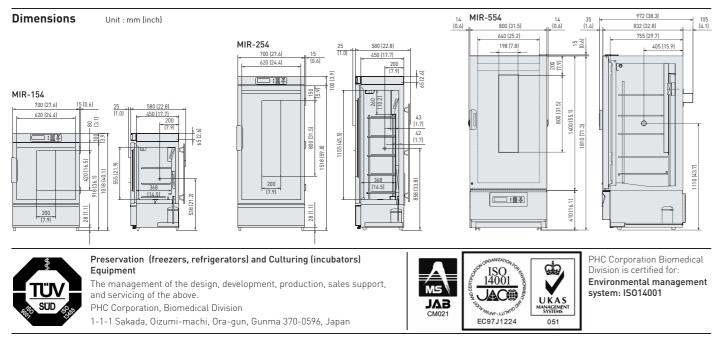
Options • Stacking plate: MIR-S154SB-PW (for MIR-154)

Padlock bracket: MIR-LP-PW (for MIR-154 & 254)

• Light add on kit: MIR-L15-PE, MIR-L15-PK, MIR-L15-PA

Note: When the MIR-L15 is installed, the illumination lamps will

automatically turn off at temperatures outside the +2°C to +50°C range



• Inner doors: MIR-55ID-PW (for MIR-554) \*The chamber temperature is limited below +50°C.

• Interface board (For data acquisition system MTR-5000 users only) MTR-L03-PW or MTR-480-PW

• Glass protect plate: MIR-154BP-PW (for MIR-154)/MIR-254BP-PW (for MIR-254)

**DISTRIBUTED BY:** 



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Versatile incubators meet a wide range of experimental needs with expanded temperature control range and enhanced functions



**PHC Corporation, Biomedical Division** 

# **Cooled Incubators**

MIR-154/MIR-254/MIR-554



Life Science Innovator **Since 1966** 

# **Cooled Incubators**

PHCbi's MIR series incubators have been recognised as exceptional units suitable for a wide range of applications. The wide variety of temperatures and lighting patterns that are essential in biological research and environmental studies can now be accurately reproduced and controlled.



# mproved Experimentation of **Repetitive Operation and Operability**

### Programmable Operation Function with Microprocessor Control

Combining flexible Temperature (H), Light ON/OFF (L) and Time control (T), a maximum 12-step plus constant operation or max. 12-step repeating operation can be programmed according to the experimentation requirements. A program can be set to repeat for a minimum of one time to a maximum of 98 times or continuous repeat.

Program input is simple and the incubator accommodates a range of diversified experimentation requirements, proving ideal for experimentation during night time and holidays, experimentation that requires settings to be changed, microorganism culture and preservation

The new MIRs also offer the choice of timer mode, 24-hour Clock mode and Timer mode to suit user experiments. Up to 10 programs can be stored for convenient retrieval and set-up of frequently run experiments. Individual programs can be combined using the Join function. Constant operation mode without step operation is also available.

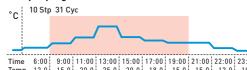
#### Sample program 1 24-hour Clock mode 10 steps, cycle: 31 times

This is one cycle consisting of 10 steps, which is repeated 31 times in this program. (Max. is 98 cycles or continuous repeat) At program start, select "Clock mode" on the running mode screen.

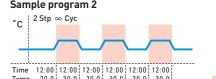
#### Sample program 2 Timer mode

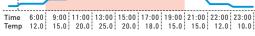
2 steps, cycle: Continuous repeat This is one cycle consisting of 2 steps, which is repeated continuously in this program. (Max. is 98 cycles or continuous repeat) At program start, select "Timer mode" on the running mode screen.

# Sample program 1

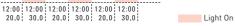














# igh-precision Temperature Environment

#### Wide Temperature Control Range from -10°C to +60°C

With a wide temperature range from -10°C to +60°C, PHCbi Cooled Incubators allow a full range of precise experiments including environmental tests to microorganism cultures and plant germination tests.

#### Precise Microprocessor Temperature Control

PHCbi Cooled Incubators incorporate a high precision microprocessor temperature control combined with a heater PID and compressor ON-OFF system.

#### Intuitive Operation with New LCD Display

- Easy operability with LCD display and pop up menu
- 24-hour Clock mode and Timer mode are selectable
- Combination of multiple programs in Join function
- Programmable operation start date and hour
- Operation data can be auto-recorded and graphically displayed.
- Data can be sent to PC using optional communication interface board (MTR-480)
- Chamber Light ON-OFF control

#### **Condensation Prevention**

A humidity reduction mode helps reduce inner chamber condensation that may occur during high temperature operation.





# Alarm and Security System to **Protect Sample Safety**

#### Automatic Setting Temperature Alarm When the chamber temperature deviates more than $\pm 1^{\circ}$ C to $\pm 5^{\circ}$ C, all digits of the

Protection Device

detected.

Mechanism

**Tamper Proof** 

unintentionally.

A DC fan is designed to be aimed obliquely upward to prevent direct air flow contacting samples. This reduces medium drying by approx. 50 % in MIR-154, and by approx. 15 % in MIR-254.

#### Meticulous Design for Comfortable Operation

**Prevents Medium from Dessication** 

(MIR-154, MIR-254 only

New MIRs are crafted with a comfortable rounded corner design and offer a reversible door for a choice of left- or right-hand door opening. Low vibration setting is also available depending on the sample to be cultured. (Reversible door is unavailable for MIR-554.)

#### **Energy Savings**

In addition to a microprocessor-controlled high efficient heater output and compressor ON/OFF, a renewal control program and low heat-emission inner chamber fan are newly adopted incorporated to allow high energy saving operation over a wider range of ambient environments.

#### Automatic Defrosting

To combat annoying frost during low temperature operation, new MIRs provide an automatic defrost function that operates automatically at a specified time every day. Manual defrosting is also selectable.

#### Light Timer Control

On-Off programmed timer control for standard equipped fluorescent light (15W x 1pc) is available. Optional light addition kit (MIR-L15) can add three more fluorescent lights into the chamber ceiling, giving approx. 3000 lux at 30 cm below from the light sources.

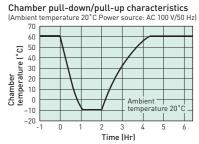
#### Environmentally Conscious

Microprocessor controlled optimum control results in high energy savings and a HCFCfree foamed-in-place rigid polyurethane insulator also helps save energy.

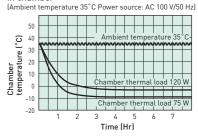
Data acquisition system Data acquisition software enables remote monitoring of cooled incubators.

# Performance Data

# MIR-154

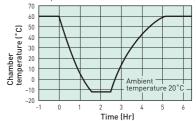


Pull-down characteristics for thermal load in chamber

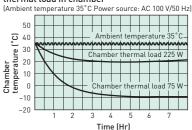


#### **MIR-254**

Chamber pull-down/pull-up characteristics ature 20°C Power source: AC 100 V/50 Hz

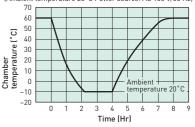


#### Temperature pull-down characteristics for thermal load in chamber

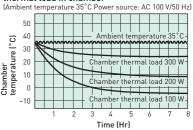


#### **MIR-554**

Chamber pull-down/pull-up characteristics (Ambient temperature 20°C Power source: AC 100 V/50 Hz)



Temperature pull-down characteristics for thermal load in chamber



digital indicator flash. 15 minutes (default) later a buzzer will sound. This system also automatically allows programmed operation or setting value changes.

### Independent Over-Temperature

This incubator incorporates an excessive temperature prevention circuit that protects experimentation materials in the rare event that a temperature abnormality does occur. This system turns off the heater and chamber fan motor when too high a temperature is detected, and turns off the compressor when too low a temperature is

### Programmed Memory Backup

Should the power source be interrupted due to power failure or other event, programmed data remains stored in memory. When the power source is restored, operation can be continued according to the predetermined program.

#### Automatic Return Buzzer Switch

After an abnormality occurs, the alarm automatically switches to the ON mode, even if the operator forgets to return the alarm buzzer to the ON mode, thus ensuring safe and secure operation.

A key lock function is provided so that settings may not be changed

### Self Diagnostic Function

Should a malfunction occur, the location of the malfunction can be digitally indicated, allowing quick operator response.

\*The data shown above are taken with the fluorescent lamp off naracteristics may vary depending on the product or operating conditions