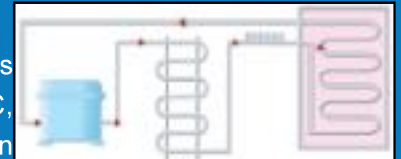# Freezer

SMART-Lab™
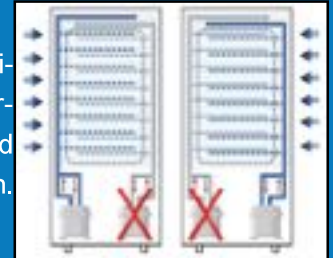### upright-type
personal-type

UniFreeze™ system

Single compressor ensures temperatures down to -86°C, minimized power consumption and minimized noise level.

UniFreeze™

DuoFreeze™ system

The combination of a doubled Uni-Freeze™ system ensures temperatures down to -95°C. The second system also acts as backup system.

DuoFreeze™

Time taken to reach low temperature:

upright-type	UniFreeze™				DuoFreeze™			
	SWUF-80	SWUF-400	SWUF-500	SWUF-700	SWUF-D300	SWUF-D400	SWUF-D500	SWUF-D700
Capacity	82 l	393 l	503 l	714 l	308 l	393 l	503 l	714 l
Down to -80°C	170 min	250 min	310 min	430 min	140 min	150 min	160 min	250 min

tested with room temperature of 30°C - 33°C

SWUF-D500: only 3 hours!
competitor: ~8 hours!

-80°C

Green product

RoHs certified

No hazardous substances (Pb, Cd, Hg, Hex-Cr, PBB, PBDE) are used in all UniFreeze™ and DuoFreeze™ freezers!

Natural refrigerants

Instead of using HFC refrigerants (R-134a, R-404A, R-507) all UniFreeze™ and DuoFreeze™ models have a specially mixed refrigerant mostly consisting of natural materials.

Power consumption

UniFreeze™ SWUF-D500	Savings	Competitor (typical)
4,015 kWh/year	**39%**	6,570 kWh/year
1,963 kgCO$_2$/year		3,212 kgCO$_2$/year

calculated by the electricity-specific emission factors sourced from the IEA (2011a).
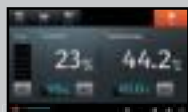
SMART-Lab™

- full touch screen TFT LCD:
- WiRe™ app service, remote control system
- variable program settings
- self-diagnosis and interactive temperature graph
- automatic data recording and password protection
- data transfer to PC by USB memory
- digital calibration (offset function)
- min-/max-temperature memory & program function
- push-alarm service to smartphone or tablet PC

IQ | OQ
available

Freezer

upright-type, UniFreeze™ system, SmartLab™ controller, down to -86°C, 308 / 393 / 503 / 714 l

UniFreeze™

IQ | OQ
available
page 12 for details

SWUF -86°C, UniFreeze

Ideal for:
• ultra low refrigeration

Features:
• CFC free refrigerant (R-404A)
• UniFreez™ system
• automatic vacuum breaker – easy to re- open door
• external temperature sensor hole
• block condenser removes filter & causes of related failure
• filter-free mechanism lowers heat from the compressor
• easy maintenance and improved performance
• high-quality insulation panel and inner doors ensure defrosting around outer surface
• easy monitoring and control – eye level controller
• stainless steel interior, powder-coated steel body and inner door
• 3x stainless steel shelves to separate chamber into 4 sub-chambers included
• castors for easy movement
• UL/CUL, CE & RoHS certified and unique serial number for tracing

Safety mechanism:
• push alarm service to your smartphone
• sensor error detection
• door locking system, door open error
• door ajar and power failure alarm
• standard warning and alarm functions

Controller:
• *Smart-Lab™ controller* with 7″ full touch screen TFT LCD:
  ♦ WiRe™ app service, remote control system
  ♦ variable program settings
  ♦ self-diagnostic function
  ♦ automatic data recording
  ♦ data transfer to PC by USB memory
  ♦ Internet connectivity with WiFi

SWUF & 3x stainless steel shelves (included)

Model	SWUF-400	SWUF-500	SWUF-700
Capacity	393 l	503 l	714 l
Temperature range & sensor	-86°C to -65°C		-80°C to -65°C
	at 30°C room temperature & 70% humidity, PT 100 sensor		
Compressor	Hermetic type		
Condenser type	block condenser, no pin, filter-free		
Max. rack quantity	16 pcs. of 15 (3x5) placed racks (RFU3040)	16 pcs. of 20 (4x5) placed racks (RFU50)	24 pcs. of 20 (4x5) placed racks (RFU50)
Internal chamber dimensions (W x D x H)	600 x 500 x 1310 mm	600 x 640 x 1310 mm	880 x 620 x 1310 mm
External chamber dimensions (W x D x H), net weight	840 x 750 x 1900 mm, 210 kg	840 x 890 x 1900 mm, 240 kg	1120 x 870 x 1900 mm, 320 kg
Packing size (W x D x H), gross weight	116 x 116 x 222 cm, 296 kg	116 x 124 x 222 cm, 327 kg	140 x 140 x 221 cm, 442 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz		
Power consumption	373 w/h	458 w/h	503 w/h
Order number 230V	DH.SWUF00400	DH.SWUF00500	DH.SWUF00700
Order number 120V	DH.SWUF03400	DH.SWUF03500	DH.SWUF03700

SMART-Lab™ controller

WiRe™ app service

DuoFreeze™

IQ | OQ available
page 12 for details

SWUF-D -95°C, DuoFreeze

Ideal for:
• ultra low refrigeration

Features:
• CFC free refrigerant (R-404A)
• DuoFreeze™ with 2 compressors: when one system fails, the other still cools down to -80°C
• automatic vacuum breaker – easy to re- open door
• external temperature sensor hole
• block condenser removes filter and causes of related failure
• filter-free mechanism lowers compressor heat
• easy maintenance and improved performance
• high-quality insulation panel and inner doors ensure defrosting around outer surface
• easy monitoring and control – eye level controller
• stainless steel interior, powder-coated steel body and inner door
• 3x stainless steel shelves to separate chamber into 4 sub-chambers included
• castors for easy movement
• UL/CUL, CE and RoHS certified and unique serial number for tracing
• SWUF-D500 model is GMP certified

Safety mechanism:
• push alarm service to your smartphone
• sensor error detection
• door locking system, door open error
• door ajar and power failure alarm
• standard warning and alarm functions

Controller:
• **Smart-Lab™ controller** with 7″ full touch screen TFT LCD:
 ♦ WiRe™ app service, remote control system
 ♦ variable program settings
 ♦ self-diagnostic function
 ♦ automatic data recording
 ♦ data transfer to PC by USB memory
 ♦ Internet connectivity with WiFi

SWUF-D300 & 3x stainless steel shelves (included)

Model	SWUF-D300	SWUF-D400	SWUF-D500	SWUF-D700
Capacity	308 l	393 l	503 l	714 l
Temperature range & sensor	-95°C to -65°C			-90°C to -65°C
	at 30°C room temperature & 70% humidity, PT 100 sensor			
Compressor	Hermetic type			
Condenser type	block condenser, no pin, filter-free			
Max. rack quantity	12 pcs. of 15 (3x5) placed racks (RFU3040)	16 pcs. of 15 (3x5) placed racks (RFU3040)	16 pcs. of 20 (4x5) placed racks (RFU50)	24 pcs. of 20 (4x5) placed racks (RFU50)
Internal chamber dimensions (W x D x H)	470 x 500 x 1310 mm	600 x 500 x 1310 mm	600 x 640 x 1310 mm	880 x 620 x 1310 mm
External chamber dimensions(W x D x H), net weight	710 x 750 x 1900 mm, 220 kg	840 x 750 x 1900 mm, 260 kg	840 x 890 x 1900 mm, 300 kg	1120 x 870 x 1900 mm, 320 kg
Packing size (W x D x H), gross weight	110 x 110 x 222 cm, 300 kg	116 x 116 x 222 cm, 352 kg	116 x 124 x 222 cm, 352 kg	140 x 140 x 221 cm, 442 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz			
Power consumption dual mode	398 w/h	474 w/h	507 w/h	596 w/h
Power consumption eco mode	352 w/h	373 w/h	458 w/h	503 w/h
Order number 230V	DH.SWUF01300	DH.SWUF01400	DH.SWUF01500	DH.SWUF01700
Order number 120V	DH.SWUF02300	DH.SWUF02400	DH.SWUF02500	DH.SWUF02700

Freezer

personal-type, UniFreeze™ system, SmartLab™ controller, down to -86°C, 82 l

SMART-Lab™ controller   WiRe™ app service

UniFreeze™

IQ | OQ
available
page 12 for details

SWUF-80 -86°C, UniFreeze™

Ideal for:
• ultra low refrigeration

Features:
• personal-type compact ultra-low temperature freezer
• freeze down to -86°C
• CFC-free refrigerant
• external temperature sensor hole
• block condenser removes filter
• filter-free mechanism lowers compressor heat
• easy maintenance and improved performance
• high-quality insulation panel and inner doors (powder-coated stainless steel) ensure defrosting around outer surface
• stainless steel interior & powder-coated steel body
• CE, UL/CUL & RoHS certified and unique serial number for tracing

Safety mechanism:
• push alarm service to your smartphone
• sensor error detection
• door locking system, door open error
• door ajar and power failure alarm
• standard warning and alarm functions

Controller:
• **Smart-Lab™ controller** with 7" touch screen TFT LCD:
  ♦ WiRe™ app service, remote control system
  ♦ variable program settings
  ♦ self-diagnostic function
  ♦ automatic data recording
  ♦ data transfer to PC by USB memory
  ♦ Internet connectivity with WiFi

SWUF-80

different racks available

Model	SWUF-80
Capacity	82 l
Temperature range & sensor	-86°C to -65°C, at 30°C room temperature & 70% humidity, PT 100 sensor
Compressor	Hermetic type
Condenser type	block condenser, no pin, filter-free
Shelves	1 stainless steel shelf included
Max. rack quantity	4 pcs. of 12 (3x4) placed rack (RFU8)
Internal dimensions (W x D x H)	340 x 485 x 520 mm
External dimensions (W x D x H), net weight	530 x 687 x 1060 mm, 60 kg
Packing size (W x D x H), gross weight	960 x 760 x 1350 mm, 102 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz
Power consumption	321 w/h
Order number 230V	DH.SWUF0075
Order number 120V	DH.SWUF0175

Accessories: Suitable racks and temperature recorder can be found on page 101

WUF-25 -86°C, UniFreeze™

digital Feedback controller

UniFreeze™

IQ | OQ available
page 12 for details

Ideal for:
• ultra low refrigeration

Features:
• personal-type compact ultra-low temperature freezer
• freeze down to -86°C
• CFC-free refrigerant
• external temperature sensor hole
• use of block condenser removes filter
• filter-free mechanism lowers compressor heat
• easy maintenance and improved performance
• high-quality insulation panel and inner doors (powder-coated stainless steel) ensure defrosting around outer surface
• stainless steel interior & powder-coated steel body
• CE & RoHS certified and unique serial number for tracing

Safety mechanism:
• built-in standard warning and alarm functions

Controller:
• *digital* feedback controller

WUF-25

Model	WUF-25
Capacity	25 l
Temperature range & sensor	-86°C to -65°C, at 30°C room temperature & 70% humidity, PT 100 sensor
Compressor	Hermetic type
Condenser type	block condenser, no pin, filter free
Shelves	-
Max. rack quantity	none, only 10-15 boxes are applicable
Internal dimensions (W x D x H)	200 x 420 x 300 mm
External dimensions (W x D x H), net weight	390 x 627 x 785 mm, 52 kg
Packing size (W x D x H), gross weight	880 x 860 x 1300 mm, 69 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz
Power consumption	321 w/h
Order number 230V	DH.WUF0032
Order number 120V	DH.WUF0132

LABTEX

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Freezer

upright-type laboratory freezer, -35°C, 420 l

Wise remote

Jog-Shuttle controller

IQ | OQ
available
page 12 for details

WLF-420 -35°C, 420 l

Ideal for:
• storage of bio reagent, seed, enzyme and various samples

Features:
• fast freezing function
• CFC free refrigerant (R-404A), 1 HP compressor
• intelligent control of refrigerator for preventing overload of compressor
• 3x stainless steel shelves included, 16 kg load per shelf
• stainless steel interior and powder-coated steel body
• storage function for the set values of temperature and timer
• RS232C interface for monitoring and controlling (WireRemote)
• backlight LCD display
• CE certified and unique serial number for tracing

Safety mechanism:
• locking mode
• over-current protection
• sensor error detection and leakage breaker

Controller:
• digital fuzzy controller with *Jog-Shuttle-switch* (turn + push)

WLF-420
with 2 inner doors and 3x stainless steel
shelves (included)

Model	WLF-420
Capacity	420 l
Type	upright-type
Temperature range & sensor	room temperature down to -35°C - +10°C, PT 100 sensor
Temperature resolution	control: ±1.0°C, display: ±1.0°C
Shelves	3 stainless steel shelves included, max.load per shelf 16 kg
Compressor	750 W
Internal dimensions (W x D x H)	600 x 700 x 1000 mm
External dimensions (W x D x H), net weight	800 x 800 x 1700 mm, 48 kg
Packing size & gross weight	1160 x 1060 x 2160 mm, 314 kg
Power supply	1 Phase AC 120V, 60 Hz or AC 230V, 50/60 Hz
Power consumption	1,8 kW
Order number 230V	DH.WLF00420
Order number 120V	DH.WLF01420

Spare flat shelf, stainless steel

For device...	Measurements	Article	Order number
WLF-420	590 x 660	LFS420	DH.WLF10420

Freezer SWUF (-D)

Racks, stainless steel
▪ suitable for freezer SWUF, SWUF-D (**not** SWUF-80)

Type	Places	Measurements	Article	Order number
sliding drawer-type	15	140 x 430 x 290 mm	RFU3040SD	**DH.RFU3040SD**
	20	140 x 570 x 290 mm	RFU50SD	**DH.RFU50SD**
side access-type	15	140 x 430 x 290 mm	RFU3040SA	**DH.RFU3040SA**
	20	140 x 570 x 290 mm	RFU50SA	**DH.RFU50SA**

delivered without cryo-boxes; maximal height of cryo-box: 55mm

side access-type

drawer-type

Freezer SWUF-80

Racks, stainless steel
▪ suitable for freezer SWUF-80

Type	Places	Measurements	Article	Order number
sliding drawer-type	12	140 x 430 x 220 mm	RFU8SD	**DH.RFU8SD**
side access-type	12	140 x 430 x 220 mm	RFU8SA	**DH.RFU8SA**

delivered without cryo-boxes; maximal height of cryo-box: 55mm

side access-type

drawer-type

Freezer all models

Cryo-boxes 136x136 mm, white, water repellent cardboard
▪ suitable for all freezer racks

Height: 32 mm	Height: 50 mm
5 486 000	5 486 005

Grids for cryo-boxes 136x136 mm, white, water repellent cardboard
▪ suitable for all cryo-boxes (please consider height of cryo-box)

Height	4x4	5x5	6x6	7x7	8x8	9x9	10x10	12x12
25 mm	5 486 100	5 486 105	5 486 110	5 486 115	5 486 140	5 486 145	5 486 150	5 486 155
30 mm	5 486 101	5 486 106	5 486 111	5 486 116	5 486 141	5 486 146	5 486 151	5 486 156
40 mm	5 486 102	5 486 107	5 486 112	5 486 117	5 486 142	5 486 147	5 486 152	5 486 157

Cryovials can be found on page 239

Remote alarm system
▪ suitable for freezer SWUF, SWUF-D, SWUF-80, WUF-25

Article	Order number
RWAS	**DH.RWAS**

Temperature recorder
▪ suitable for freezer SWUF, SWUF-D, SWUF-80, WUF-25

Description	Order number
recorder with chart paper and replacement pen (red)	**DH.KT622**
spare chart paper, 60 pcs. (420 days of recording)	**DH.C657**
replacement pens (red), 6 pcs.	**DH.P222**

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