m360 – PRODUCTS AND SERVICES

Proud member of the Memmert Family

m360
SOLUTIONS FOR YOU

Welcome to m360

Fulfilling your individual requirements for your Memmert appliance is our mission! As an integral part of the Memmert Family, we have been making custom-made products for over 40 years – we are the m360 experts!

With the constant aim of inspiring our valued customers and business partners with individual solutions, we develop and produce customized products based on Memmert's industry–leading temperature control and climate technology. We attach significant importance to personal contact with our customers. By listening carefully and consulting comprehensively on the individual needs of the customer, we are able to realize the full scope of the desired tailor-made solutions.

In the past, it was not uncommon for valuable features to emerge from custom-made products, which have now become established as part of our series of products. With a focus on the needs of our customers and our professional competence and openness, we are drivers of innovations from which you can also benefit. Let's inspire the market together with innovative and revolutionary developments!

We welcome you to the brand m360 and invite you to get in touch with us. The entire m360 team and I look forward to hearing from you.

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The m360 mission

m360 is a proud member of the Memmert Family.

THIS IS US

Since the 1980s, m360 has been developing and implementing customer-specific, premium solutions in the field of temperature and climate control technology based on Memmert series products. At Memmert's central production site in Schwabach, Middle Franconia (southern Germany), the m360 team of experts design and produce tailor-made solutions in close cooperation with customers and business partners in order to create the perfect atmosphere for every application.

In doing so, m360 focuses on the creative and innovative development of the established Memmert technology according to the individual wishes of the customers. This can be a simple modification of a series product from Memmert or an extensive project in the construction of special machines and systems.
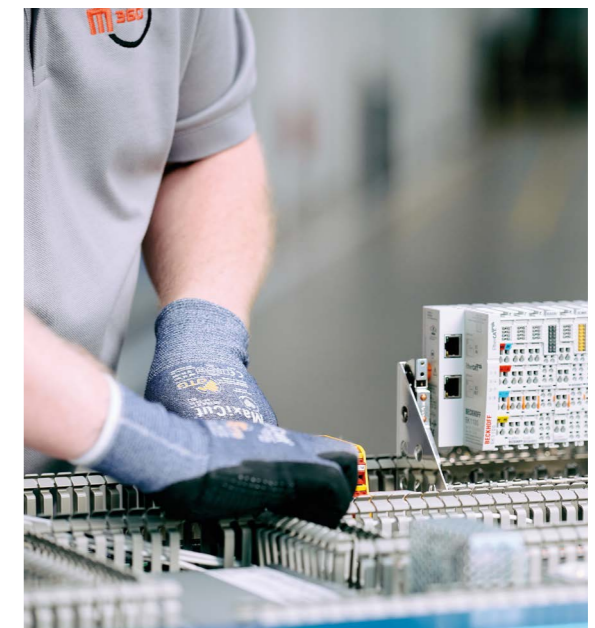
WHAT WE CAN DO FOR YOU

Our brand is aimed at international customers who are looking for solutions to special challenges in the field of temperature and climate control technology. We offer an extremely high customer-first focus to create products that do not exist in the market. We collaborate closely with the customer to understand and meet the specific challenges and requirements down to the very last detail. At the same time, our experts work intensively on innovative ideas which they identify as highly topical, e.g., automatic solutions for the laboratory. With our experienced insight into the market, our team can precisely estimate trends and special solutions that will be in demand in the future.

m360 MISSION

"With a focus on individual customer needs, m360 creates innovative high-tech products in the field of temperature and climate control technology. We work hand in hand with our customers to understand challenges and implement solutions and requirements down to the last detail."

THE HOLISTIC m360 APPROACH
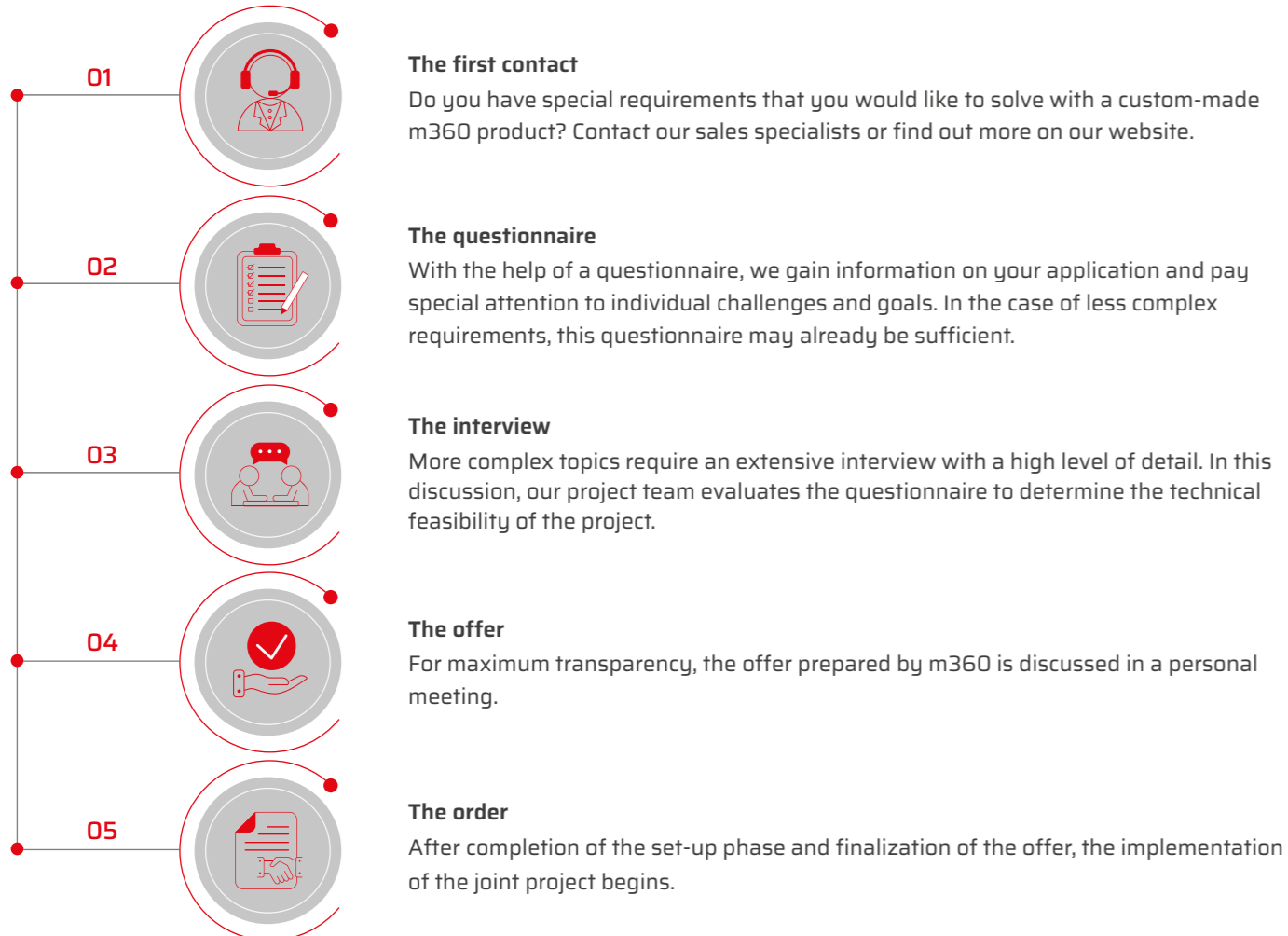
YOUR PRODUCT MADE IN GERMANY

State-of-the-art machinery and materials of the highest quality are a priority for us.

To invest the highest possible quality and attention in your individual product, all parties involved in the project must collaborate closely. Our experienced developers are, therefore, based at the same location as our extensive production team. In close cooperation, we ensure that your order is manufactured perfectly down to the last detail in our state-of-the-art machine park, which specializes in sheet metal processing.
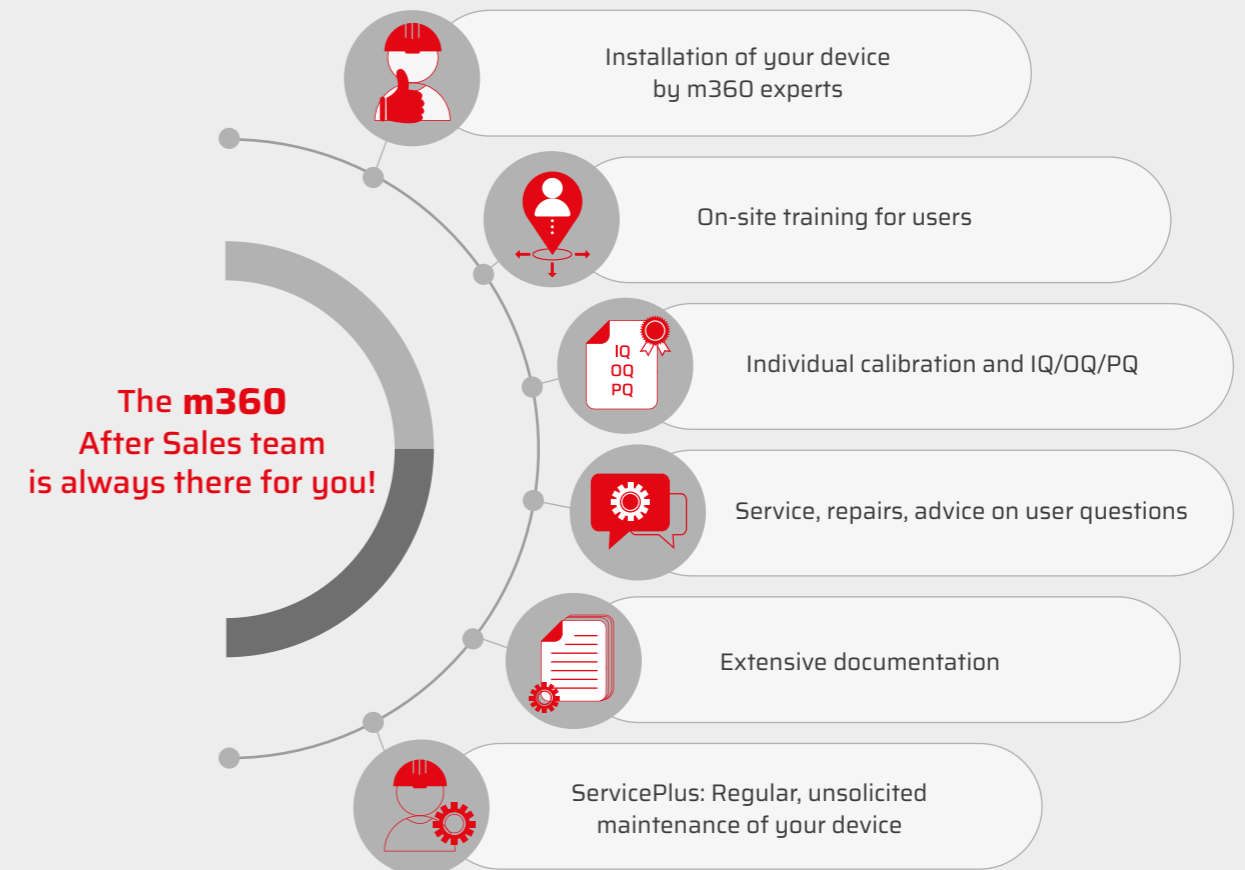
| High Tech | Made in Germany | Teamwork | Stainless steel |

PROFESSIONAL ADVICE

First-class results are only achieved through attentive listening and individual advice.

01

The first contact
Do you have special requirements that you would like to solve with a custom-made m360 product? Contact our sales specialists or find out more on our website.

02

The questionnaire
With the help of a questionnaire, we gain information on your application and pay special attention to individual challenges and goals. In the case of less complex requirements, this questionnaire may already be sufficient.

03

The interview
More complex topics require an extensive interview with a high level of detail. In this discussion, our project team evaluates the questionnaire to determine the technical feasibility of the project.

04

The offer
For maximum transparency, the offer prepared by m360 is discussed in a personal meeting.

05

The order
After completion of the set-up phase and finalization of the offer, the implementation of the joint project begins.

IN THE BEST OF HANDS WITH OUR GLOBAL AFTER SALES TEAM

m360 designs high-quality custom-made products according to your personal wishes and ensures the best results. Our optional after-sales services include among others:

The **m360** After Sales team is always there for you!

Installation of your device by m360 experts

On-site training for users

Individual calibration and IQ/OQ/PQ

Service, repairs, advice on user questions

Extensive documentation

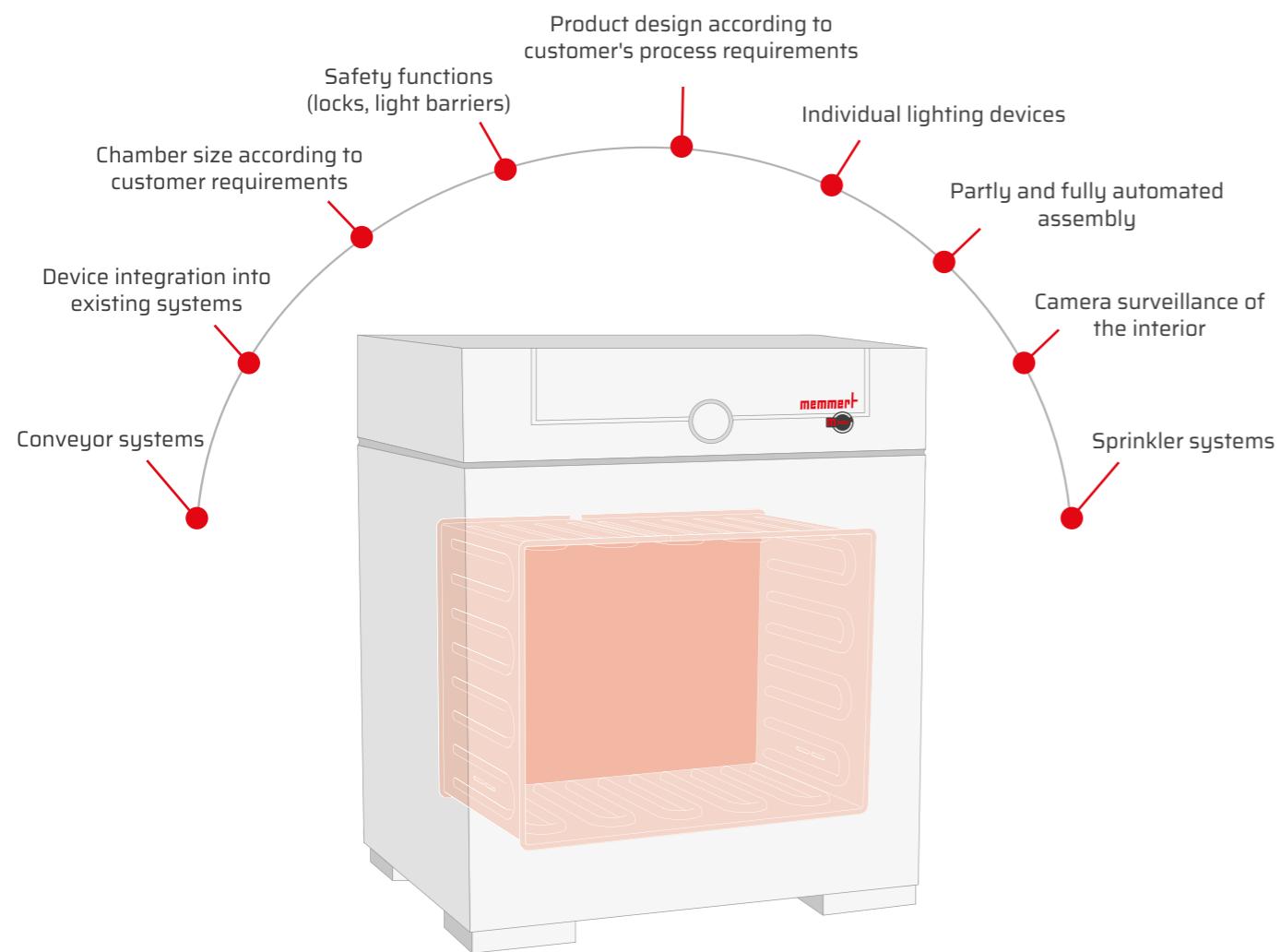ServicePlus: Regular, unsolicited maintenance of your device

INDIVIDUAL DESIGN MEETS STRATEGIC PARTNERSHIP

The range of services of m360 includes both small modifications and complex high-tech innovations.
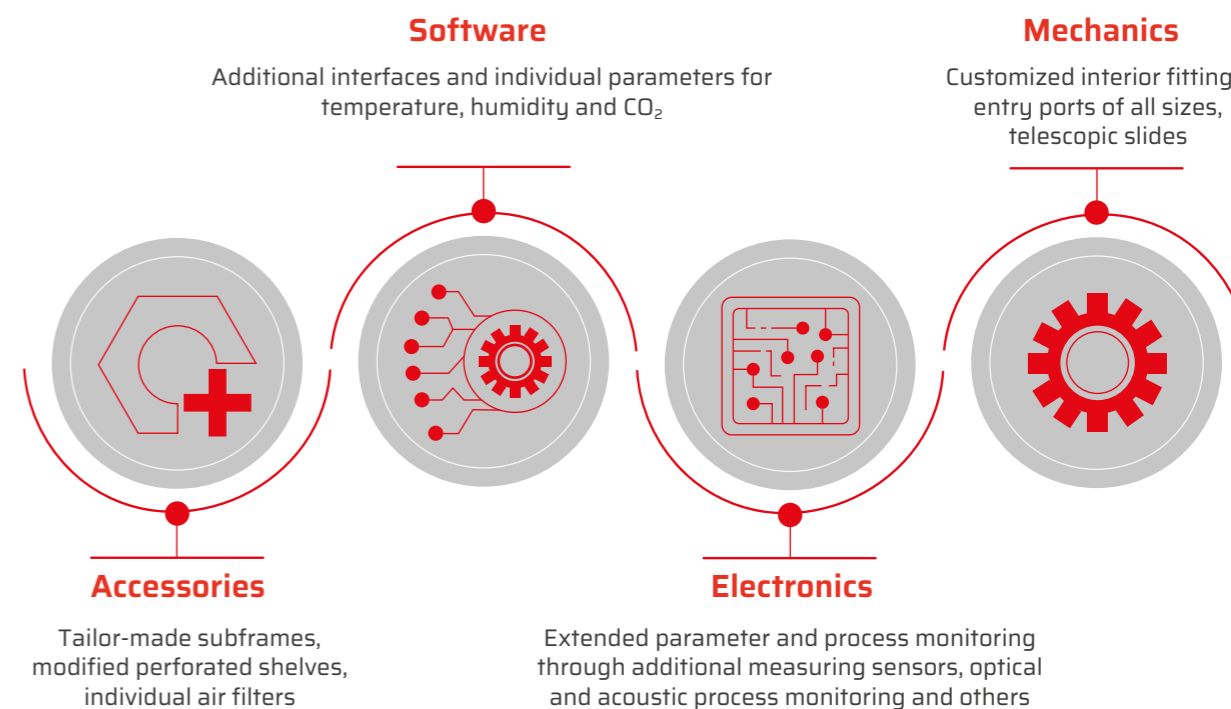
m360 Innovations

m360 is the think tank for revolutionary innovations in temperature and climate control products. Our experts already know tomorrow's trends today and are working intensively on efficient solutions for your processes. Are you facing a technical challenge or would you like to carry out a complex application? Use our know-how and our production capacity for your project!

Product design according to customer's process requirements

Safety functions (locks, light barriers)

Individual lighting devices

Chamber size according to customer requirements

Partly and fully automated assembly

Device integration into existing systems

Camera surveillance of the interior

Conveyor systems

Sprinkler systems

m360 Modifications

With m360 modifications and special accessories, you can unleash the full potential of your Memmert product. In our list of services, you will find a selection of frequently requested extensions of a Memmert basic device. This includes additions such as entry ports and traffic light circuits, as well as individual programming of the AtmoCONTROL software.

Software
Additional interfaces and individual parameters for temperature, humidity and CO_2

Mechanics
Customized interior fittings, entry ports of all sizes, telescopic slides

Accessories
Tailor-made subframes, modified perforated shelves, individual air filters

Electronics
Extended parameter and process monitoring through additional measuring sensors, optical and acoustic process monitoring and others

THE EFFICIENT 2-IN-1 SOLUTION

Two drying processes
with a single universal oven

The challenge

Two fundamentally different loads with limited space in production! MTU Aero Engines develops and produces patented brush seals that first must be processed in a waterbath and then dried completely. Certain distances and angles must be maintained between the large and heavy sealing rings. Small components also must be dried for a second process. Since space is scarce in many workshops, the chamber should ideally cover both applications.

The solution

MTU opted for a custom-made drying oven UF1060 from m360. A tailor-made solution was developed together with the m360 experts, which enables the brush seals to be optimally placed and dried. The stop angle of the lower door hinge was adjusted so that it can only be opened up to 95°. Furthermore, adjustable locking slides and locking bolts were added, perforated shelves with upstands were developed for more stability and a reinforced telescopic slide was designed to shelves the weight of the brush seals. An additional special feature: thanks to specially designed exchangeable supports, perforated shelves and trays can be exchanged in just a few simple steps. This enables two different applications to be shelves out with the same interior design.

"The uncomplicated and well thought out solution from m360 enables us to dry our load according to our individual requirements. Thanks to the Memmert custom-made product, we achieve perfect results - for two different processes!"

- Hermann-Josef Peters, Investment Management
- Tobias Heyer, Head of Brush Seal Production
- Anna Braunwarth, Project Manager

About MTU Aero Engines AG

With three German locations and around 5,000 employees worldwide, MTU Aero Engines AG is Germany's leading engine manufacturer and a national and international driving force in the development, manufacture and maintenance of civil and military engines.

Sector: Aviation
Location: Munich, Germany
Employees: approx. 5,000
Customer since: MTU has been regularly purchasing Memmert products since 2016 as well as orders for custom-made devices from m360.

The UF1060 in detail

The reinforced telescopic rails can be fully loaded up to 100kg.

Lockable slides and bolts for optimal fixing and positioning of the brush seals.

To save space in the workplace, the doorstop can only be opened up to 95°.

An interchangeable carrier for trays and pans enables two different applications in one device.

The sky is the limit

DRYING OVEN WITH SPECIAL HEIGHT

The challenge

A Mason Technology customer was looking for a way to professionally dry a large number of approximately 10 mm catheter connectors. Such small loads require special storage areas. In addition, to use the space in the laboratory efficiently, the height of the interior of the device should be at least 1600 mm.

The solution

To meet the specific needs of Mason Technology customers, m360 designed an UF600plus - a drying oven at a very specific height. m360 developed this device according to customer requirements because the specific dimensions also result in completely new conditions in the drying oven. The heating conductors were laid individually and a 27-point measurement was carried out in the interior to ensure optimal temperature distribution according to the high Memmert standard. The device software AtmoCONTROL was then specially reprogrammed for this device to guarantee Mason Technology customers the desired functions and results. m360 also developed a special shelf with telescopic rails so that the load is inserted ergonomically. Due to the enormous height of the device, the handlebar has been reinforced so that the door can be opened easily.

About Mason Technology

Mason Technology is a leading provider of high quality scientific instruments, technical services and solutions for laboratory, production and maintenance environments across Ireland.

Sector: Laboratory equipment, industry
Location: Dublin, Ireland
Employees: 120
Customer since: Mason Technology has been a Memmert customer since 2011 and places orders for custom-made devices from m360.

"The advice from the m360 experts was impeccable and very professional. In just a few weeks, we had a device specially designed and programmed for our purposes in our laboratory."

- Conor Sweeney, Technical Sales Consultant

The UF600plus in detail

Ergonomic telescopic rails and special trays make it easier to load the device.

The reinforced handle enables the particularly tall door to be opened easily.

Width = 824 mm
Height = 2150 mm
Depth = 684 mm + 56 mm
door handle

⚙ MECHANICS

ENTRY PORTS

Entry ports create a wide range of possible applications, e.g., to route customer-side parts such as devices, cables, sensors or measuring instruments from the outside to the inside of the device. m360 designs entry ports of all sizes and shapes according to customer requirements.

! Insertion options for shelves and grids can be eliminated by introducing additional entry ports.

ø14 - 38 mm:	one shelf is omitted
ø57 - 80 mm:	two shelf levels are omitted
ø100 - 120 mm:	three shelf levels are omitted

ROUND ENTRY PORTS

Round entry ports are mainly used for inserting sensors. The Memmert standard portfolio offers entry ports with a diameter of up to 23mm. m360 manufactures special entry ports that go beyond this diameter and can also be placed individually. Depending on the design, round entry ports can be closed with an ear cover or slider.

Product series	‹ U ‹ IPPeco ‹ I
Product information	‹ Flap ø14 - 57 mm
	‹ Slider ø80 - 120 mm
	‹ Material made of stainless steel 1.4301 (ASTM 304)
	‹ Entry port is not moisture-proof
Ordering information	‹ Stopper optionally available
	‹ From 60mm, further special entry ports are available on request possible
	‹ IPPeco interior glass door not possible if the entry port is routed through the door

Position		ø14	ø23	ø38	ø57	ø80	ø100	ø120
Position	Side	●	●	●	●	●	●	●
	Rear	●	●	●	●	●	●	●
	Door	●	●	●	●	●	●	●

WELDED MOISTURE TIGHT ENTRY PORTS

Moisture tight entry ports are mainly used, for example, to insert sensors into the device. This entry port is specially welded to ensure no moisture from the chamber escapes and the climate remains constant.

Product series	‹ HPPeco ‹ ICP ‹ ICH
Product information	‹ Includes stopper
	‹ Entry port welded and thus moisture-tight
Ordering information	‹ Door entry port on request only for HPPeco

Position		ø14	ø23	ø38	ø57	ø80	ø100	ø120
Position	Side	●	●	●	●	●	●	●
	Rear	●	●	●	●	●	●	●

MOISTURE TIGHT SILICONE ENTRY PORTS

In addition to moisture-proof entry ports, which are welded into the device, m360 offers plugged silicone entry ports in a moisture-proof design

Product series	‹ HCP ‹ ICO ‹ HPPeco ‹ IPPeco
Product information	‹ Silicone entry port in moisture-proof design
	‹ Includes stopper
Ordering information	‹ With HPPeco and IPPeco also possible on the side upon request
	‹ HCP and ICO: 80mm entry port only possible from size 150 liters 120mm entry port not possible
	‹ ICO: Entry ports not possible in combination with option F7

Position		ø14	ø23	ø38	ø40	ø57	ø80	ø100	ø120
Position	Rear	—	—	—	●	—	●	—	●

RECTANGULAR ENTRY PORTS

For some applications, it is necessary for the customer to install larger components in the device. In this case, m360 manufactures rectangular entry ports that are attached to the side or rear of the device. After technical clarification, individual widths and heights can be realized.

Product series	‹ U ‹ IPPeco ‹ I
Product information	‹ Slider closure
	‹ Material made of stainless steel 1.4301 (ASTM 304)
	‹ Type of interior installation: plugged or welded design possible
Ordering information	‹ The size of the entry port depends on the position and the device model
	‹ Rectangular entry ports are always individually designed and require technical verification by m360

Position		Length, width and location of the entry port
Position	Side	Upon request
	Rear	Upon request

SMALL FLANGE KF ENTRY PORTS

These entry ports were specially designed for vacuum ovens. The entry ports are welded vacuum-tight. In this way, measuring sensors can be inserted into the device without pressure loss during vacuum operation.

Product series	‹ VO
Product information	‹ ISO-KF connection
	‹ ISO-CF connection possible upon request
	‹ Position on the rear side
Ordering information	‹ Further vacuum-tight connections possible upon request, e.g., power and voltage supply or interface connections via entry ports
	‹ KF connections for other product models are available upon request

Position		DN16	DN25	DN40	DN50	Other diameters
Position	Rear	●	●	●	●	Upon request

STOPPER

In order to keep the climatic conditions of a device with an entry port constant during operation, the use of a stopper is recommended. The silicone sponge stopper is heat-resistant up to 180°C and made of soft material, which can be optimally pressed into entry ports. The silicone stopper is available in two temperature-resistant versions up to 200°C and 300°C and is made of a harder material than the silicone sponge stopper.

Product series	‹ VO ‹ U ‹ S ‹ I ‹ ICP ‹ ICH ‹ HCP
	‹ TTC ‹ HPPeco ‹ IPPeco ‹ CTC ‹ ICO
Product information	‹ Depending on the version, the silicone stopper is temperature-resistant up to 200°C or 300°C
	‹ Silicone sponge stopper temperature resistant up to 180°C
Ordering information	‹ When reordering individual stoppers, pay attention to the temperature range of the device
	‹ Stopper 300° C only for product series U

	ø14	ø23	ø37-40	ø57	ø80	ø100	ø120
Silicone sponge stopper 180°C	—	E05387	E05388	E05389	—	E05386	—
Silicone sponge 200°C	—	E07698	E07699	E07700	E07701	E07702	
Silicone sponge 300°C	E05790	E05361	E05362	E07865	E05625	E07866	E05920

MAGNETIC DOOR LOCK

Certain processes require the door of the device to be opened quite frequently. A magnetic closure is available to make handling more ergonomic. Thanks to the magnet, the door closes automatically and withstands a constant load of opening and closing. The latch is available for single leaf doors and is only recommended for processes up to 200°C.

Product series	‹ U ‹ I
Product information	‹ Magnetic door lock
	‹ Easy handling and suitable for continuous use
Ordering information	‹ Temperature limitation A8 to 200°C required for models of the product series U
	‹ Only possible for single-leaf devices upon request
	‹ Retrofit possible after technical clarification

	30	55	75	110	260	Other sizes
Magnetic closure	●	●	●	●	●	Upon request

SWAP DOOR HINGES

For ergonomic reasons or to save space on-site, it is advisable to mount the door stop on the left-hand side so that the door handle is on the right-hand side. m360 attaches the door handle to your desired side at the factory.

Product series	‹ HPPeco ‹ ICH ‹ IPPeco ‹ ICP ‹ IPPeco
Product information	‹ Stainless steel and inner glass door are hinged on the left side of the device.
Ordering information	‹ Only for devices with a single-leaf door

	30	55	110	260	410
Swap door hinges	●	●	●	●	●

HEATED FULL-SIGHT GLASS

A full-sight heated glass door reduces condensation on the inside of the glass door when humidity levels inside the chamber are high.

Product series	‹ HPPeco ‹ IPPeco
Product information	‹ Heated full-sight glass door (size 410 not heated)
	‹ Reduces condensation on the door glass panel
Ordering information	‹ Interior glass door not included

	410	750	1060
Heated full-sight glass door	Upon request	●	●

MAINTENANCE HATCH FOR ELECTRONICS BOX

To save space or for certain applications in clean rooms, devices are often embedded in a wall. As a result, the cover of the electronics box can no longer be opened. With the maintenance hatch modification, the conventional device cover is replaced by a two-part cover.

Product series	‹ U ‹ I ‹ HPPeco ‹ IPPeco
Product information	‹ Maintenance hatch for electronics box
	‹ No need to dismantle installed devices in the clean room
	‹ Easy access to electronic components from grey room side
Ordering information	‹ Retrofitting possible

	30, 55, 75	110	160	260	410	450, 750, 1060	1400	2200
Maintenance hatch	Clarification needed	●	●	●	●	Clarification needed	—	—

SWIVELING SHUTTER BOX

The swiveling shutter box is intended for maintenance on wall-mounted devices or for stacked devices. A telescopic slide allows maintenance and replacement of electronic components from the front.

Product series	‹ U ‹ I
Product information	‹ Swiveling shutter box
	‹ No need to dismantle the devices when stacking with stacking corners or stacking frames
	‹ Easy maintenance options for built-in device
Ordering information	‹ Retrofitting is not possible

	30, 55, 75	110	160	260	410	450, 750, 1060	1400	2200
Swiveling shutter box	Clarification needed	●	●	●	●	Clarification needed	—	—

HEAVY-DUTY INTERIOR FRAME

Heavy components can exceed the maximum load of the device due to their weight. A heavy-duty interior frame is therefore recommended for particularly heavy loads. Since the feet of the shelf stand directly on the foundation of the place of installation, the device is not loaded.

Product series	‹ U ‹ I ‹ HPPeco ‹ IPPeco
Product information	‹ Consisting of a frame, which rests on the floor by means of entry ports in the device floor
	‹ Inserts are screwed to the frame and can be positioned variably
Ordering information	‹ Additional inserts are to be calculated separately
	‹ K1 option not available with heavy-duty frame

Technical information			260	450	750	1060
Further data	Max. number of heavy-duty grids	Quantity	3	3	6	6
	Max. loading per shelf	kg		200		
	Max. loading per frame	kg		800		
Installation	Heavy-duty interior frame (incl. floor entry ports + a grid)			●		
	Heavy-duty floor frame (incl. floor entry ports)			●		
	Additional heavy-duty grid			●		

WRAPPED INSULATION

Memmert devices are often used in the clean room. In order to reduce the particle load in the interior of the device, the rock wool insulation can also be packed in aluminium foil.

Product series	‹ U ‹ I
Product information	‹ Insulation wrapped in aluminium foil
	‹ Reduction of particle pollution
Ordering information	‹ No improvement in the ISO clean room class
	‹ The temperature uniformity of the devices deviates from the standard

	30	55	75	110	160	260	450	750	1060
Wrapped Insulation	●	●	●	●	●	●	●	●	●

ELECTRONICS

PROCESS MONITORING - TRAFFIC LIGHT SWITCHING

With a traffic light switch, the user can see the current status of the ongoing process in the Memmert device (for example, program running: green, standby: yellow, error message: red). This is particularly useful when a large number of devices are in use at the same time. The colours and functions of each light are flexible and up to five lights can be installed. Prerequisite for the addition of the traffic light circuit: It must be a Plus device with TwinDISPLAY with options H6 and H7. Traffic light switching is very often used for industrial applications.

Product series	‹ U ‹ IPPeco ‹ I ‹ HPPeco
Product information	‹ Visual monitoring of ongoing processes using signal lights on the shutter box
	‹ Acoustic monitoring and signaling in the event of a fault report
	‹ Combination of optical and acoustic error message
Ordering information	‹ One potential-free contact (option H6 and/or H72) is required for each signal light
	‹ Retrofitting only possible by Memmert in the factory
	‹ Other lights and product models available upon request
	‹ Only possible for models with a TwinDISPLAY

		H6	H72
Variations	Visual and acoustic process monitoring (red, yellow and green lights + beeper)	●	●
	Optical and acoustic fault message monitoring (red light + signal tone generator)	●	—

POTENTIAL-FREE CONTACT H7, H72, H74

Potential-free contacts are available for all UF/IF devices in the Memmert standard portfolio. The m360 team of experts developed a custom-made product for the other product models. Using the AtmoCONTROL device software, a dependency can be programmed for options H7 / H72 / H74 and an additional signal is sent to the potential-free contact, e.g., the command that ventilation starts when 300 °C is reached. With the H5 option, an interface is mounted on the rear panel of the device by which external devices, e.g., for humidity monitoring, can be connected.

Product series	‹ HPPeco ‹ ICP ‹ ICH ‹ IPPeco ‹ VO ‹ U ‹ I ‹ ICO ‹ HCP
Product information	‹ H7, H72, H74: Potential-free contact (24V / 2A) with built-in socket for controlling external devices (e.g. activation of acoustic and optical signals, suction motors, fans, stirrers, etc.)
	‹ H5: For external monitoring (e.g. display of target value reached)
Ordering information	‹ Only for devices with TwinDisplay
	‹ Maximum 2 pieces at 1-ph. devices possible

	VO	U	I	HPPeco	IPPeco	ICH	ICP	ICO	HCP
H5 (one contact)	—	●	●	●	●	●	●	●	●
H7 (one contact)	●	—	—	—	—	—	—	—	—
H72 (two contacts)	—	—	●	●	●	●	●	—	—
H74 (four contacts)	—	●	●	●	●	●	●	—	—

4-20 MA INTERFACE (V7) FOR HUMIDITY CONTROLLER ACTUAL VALUE

To log the relative humidity in the device via an external system, a 4-20 mA interface can be installed to output the actual value.

Product series	‹ HPPeco
Product information	‹ Output of the actual value of the relative humidity in the chamber (0-100%rH = 4-20 mA)
Ordering information	‹ 4-20 mA current interface on the rear side of the device at the height of the electronics box
	‹ 3-pin connector included

	110	260	410	750	1060	1400	2200
V7	●	●	●	●	●	●	●

INTERIOR LIGHTING R0

To make the load in the interior of the device chamber more visible, m360 offers special lighting for monitoring in devices from the IPPeco and ICP series. The lights can be switched manually or run in continuous operation. This option is only available for devices with TwinDISPLAY.

Product series	‹ ICH ‹ ICP
Product information	‹ Interior lighting for monitoring goods
	‹ Up to and including size 260, an interior light is installed. From size 450, two interior lights are installed
Ordering information	‹ Only in combination with TwinDISPLAY

	110	260	450	750
One light	●	●	—	—
Two lights	—	—	●	●

LED GRID T7/ T8/ T9

For some applications, such as plant or mushroom cultivation, top lighting of the load is very important. The m360 LED grids offers this possibility. The light can be dimmed in 1% increments and is available in warm white, cold white and a combination. Certain processes can be programmed via AtmoCONTROL, e.g. a day-night simulation.

Product series	‹ HPPeco ‹ IPPeco
Product information	‹ Cold white 6500K, warm white 2700K or mixed
	‹ Dimmable from 0-100% in 1% increments
	‹ Moisture proof IP44
	‹ Documentation and programmable via AtmoCONTROL software
Ordering information	‹ Only in combination with TwinDISPLAY
	‹ Not possible in combination with K1 option

			110	260	410	750	1060	1400	2200
Further data	Max. load per grid	Kg		20			30		
	Working temperature with light	°C				+15 to +40			
	Max. number of grids	Quantity	4	4	4	4	4	4	6

ADDITIONAL INTERIOR SOCKET

Many users connect additional devices to their Memmert cabinet, e.g. shaking devices or scales. Anyone who cannot have an entry port installed for this and also wants more than one interior socket for their device can contact m360. All interior sockets can optionally be installed as a switchable version.

Product series	‹ U ‹ I ‹ HPPeco ‹ IPPeco ‹ ICP ‹ ICH
Product information	‹ Interior socket for the power supply of electrical devices brought in by the customer
	‹ Ampacity 230V; 2.2A
	‹ Moisture proof IP68: R3 and R4
	‹ Moisture proof IP66: R3 UK and R4 UK
Ordering information	‹ Not available for IFplus / INplus
	‹ Technical clarification required for more than three interior sockets

		R3	R3-UK	R4	R4-UK
Installation	Can be switched off via the main switch, cannot be switched separately	●	●	—	—
	Can be switched on/off via toggle switch on the control panel	—	—	●	●
Required options	Temperature limitation (option A8) to +60 °C	●	●	—	—
	Temperature limitation (option A8) to + 55 °C	—	—	●	●
	Moisture tight IP66	—	●	—	●
	Moisture tight IP68	●	—	●	—

COMPRESSED AIR DEHUMIDIFICATION FOR XXL DEVICES

Often, users have loads in their devices that give off humidity causing humidity in the interior to rise. Compressed air dehumidification compensates for this humidity by bringing dry air into the chamber. m360 also offers compressed air dehumidification for devices in the HPPeco series with an interior volume of more than 1060 liters. A retrofit of the compressed air dehumidification is only possible in the factory. An air compressor is not included.

Product series	‹ HPPeco
Product information	‹ Support of the dehumidification process by means of compressed air
	‹ Extended working range possible under optimal conditions up to +15°C / 10% RH
Ordering information	‹ Subsequent modification only possible by Memmert
	‹ Compressed air must be provided by the customer

	1400	2200
Compressed air dehumidification including standard factory calibration certificate (+15°C with 10% RH)	●	●

SOFTWARE

ICH Q1A PACKAGE - DOOR LOCK BY USB ID STICK

USB ID key door locking is an advanced tamper-proof locking feature. The USB ID stick works like a digital key that can control multiple devices. If the USB ID stick is removed from the device, the door locks and the temperature and/or humidity settings can no longer be changed. Only after plugging in the stick can the device be operated again.

Product series	‹ HPPeco
Product information	‹ Extended locking function of the USB User ID Stick
	‹ Several devices can be operated with one USB user ID stick
Ordering information	‹ Subsequent installation of the door lock (option D4 and V5) only possible by Memmert
	‹ Subsequent approval of devices for existing USB user ID stick possible
	‹ Process dependent programmable door lock included with new orders

		1060	1400	2200
Option Door lock	D4 (one door)	●	—	—
	D42 (two doors)	—	●	—
	D43 (three doors)	—	—	●
Option Door lock	V5 (one door)	●	—	—
	V52 (two doors)	—	●	—
	V53 (three doors)	—	—	●

PARAMETER MONITORING

In special applications, it is necessary to monitor a parameter such as relative humidity, although the device cannot actively control the parameter. In this case, m360 can, for example, install a humidity sensor in a UF device, which displays and logs the relative humidity. However, it is still not possible to control the humidity parameter. The m360 team of experts will be happy to advise you.

Product series	‹ HPPeco ‹ IPPeco ‹ ICP ‹ U ‹ I
Product information	‹ Installation of O_2 sensors for monitoring and display on the ControlCOCKPIT
	‹ Installation of humidity sensors for monitoring and display on the ControlCOCKPIT
	‹ Parameter control not possible
Ordering information	‹ With O_2 sensor: Temperature limitation A8 to 200°C required for universal ovens
	‹ With humidity sensor: Temperature limitation A8 to 180°C required for universal ovens
	‹ Retrofit only by Memmert

		U	I	HPPeco	IPPeco	ICP
Required option	Temperature limitation (option A8)	●	—	—	—	—
Additional sensor	Sensor O_2 sensor	●	●	●	●	—
	Humidity sensor	●	●	—	●	●

FREELY POSITIONABLE PT100 SENSOR

With additional, freely positionable temperature sensors, users not only have the option of measuring the air temperature, but also the temperature of the load or e.g. water in a bowl. Up to three additional sensors can be connected.

Product series	‹ U ‹ IPPeco ‹ I ‹ HPPeco ‹ ICP ‹ ICH ‹ CTC
Product information	‹ PT100 that can be flexibly positioned in the interior
	‹ H4: 4-pole built-in socket for external temperature registration (load temperature recording)
	‹ H8: Up to three temperature values can be shown on the display, temperatures can be documented via AtmoCONTROL for "on-site" temperature measurement
Ordering information	‹ A maximum of three sensors can be installed

	HPPeco	IPPeco	U	I	ICH	ICP	CTC
Additional sensors	Possible for all sizes						

ACCESSORIES

SEALING

For special applications it may be necessary to replace the standard seal of a Memmert appliance with low-silicone seals. In this case, a low-silicone Viton seal is recommended, which is heat-resistant up to 250°C in long-term processes.

ESD seals are conductive and thus lead to increased protection against electrostatic discharge. For applications with electronic parts as load, it is recommended to use an ESD seal. The ESD seal is heat-resistant up to 180°C in long-term processes. The m360 team will be happy to advise you on your individual requirements.

Product series	‹ U ‹ I ‹ HPPeco ‹ IPPeco ‹ ICH ‹ ICP
Product information	‹ Replacement of the standard seal with a Viton seal
	‹ Replacement of the standard seal with an ESD seal
Ordering information	‹ Pay attention to the temperature range of the device when ordering
	‹ Temperature limit A8 for ESD seal to 180°C additionally required
	‹ Temperature limit A8 for Viton seal up to 250°C additionally required

		HPPeco	IPPeco	U	I	ICH	ICP
Required option	Temperature limitation (option A8)	●	●	●	●	●	●
	Special seal	Possible for all sizes					

MODIFIED DOOR HANDLE BAR

Particularly for XXL devices, but also for smaller Memmert devices that are opened and closed very frequently, it makes sense to replace the aluminium door handle bar with a reinforced handle bar made of stainless steel. In the case of special devices with a volume of more than 750 liters, the reinforced rod is installed automatically. For all other devices, the modified handle bar is optionally available and can be retrofitted.

Product series	‹ HPPeco ‹ IPPeco ‹ ICH ‹ ICP ‹ U ‹ I
Product information	‹ Reinforced door handle bar with increased rigidity for frequent opening and closing of the door
	‹ Designed for devices from size 410
Ordering information	‹ Possible for smaller devices on request
	‹ Retrofit possible after technical clarification

	410	750	1060	1400	2200	Other sizes
reinforced door handle bar	●	●	●	●	●	Upon request

AIR FILTER

A G3 filter (option R8) with 80% separation efficiency can be configured for Memmert devices from series production. This filter prevents coarse particles from penetrating the interior of the device. For users who want to work with as few particles as possible but do not have a clean room, m360 offers the HEPA filter H13 (degree of separation of 99.95%). Other filter types, such as an F7 ultra-fine filter, are also available upon request and after technical consultation.

Product series	‹ U ‹ I
Product information	‹ Installation of filters of different filter classes at the inlet air opening on the bottom of the device
	‹ Filters particles directly out of the supply air before it flows into the interior (a new clean room class is not achieved due to the upstream air filter)
Ordering information	‹ For size 30 - 260 castor frame (option R9) or subframe additionally required
	‹ Further filter classes on request

	30	55	75	110	260	450	750	1060
Subframe required	●	●	●	●	●	—	—	—

EXHAUST CONDENSATE TRAP

During the drying process in a Memmert device, moist air can arise that has to be removed. It can happen that the humid air in the exhaust air condenses and drips down. A special valve with a hose nozzle allows the water to drain off in a targeted manner. The exhaust air condensate trap is made of stainless steel and can be easily installed - even retroactively and without a technician.

Product series	‹ U ‹ I
Product information	‹ Condensate that occurs during processes with high humidity is collected in the exhaust air pipe and removed
	‹ Exhaust pipe ø60.3 mm
	‹ Condensate drain ø14 mm
Ordering information	‹ Retrofit possible
	‹ Not in combination with K2/ K3 option

FAST COOLING FAN

A fast cooling fan has two functions: Firstly, it cools down the device many times faster after a temperature control process, without having to open the door. On the other hand, the fan increases the air exchange rate of the device. Depending on the exhaust air flap, the fast cooling fan can be regulated in 10% increments and controlled via a regulator on the exhaust air flap, but also via the AtmoCONTROL software.

Product series	‹ U ‹ I
Product information	‹ Exhaust fan for rapid cooling
	‹ Adjustable in 10% increments via exhaust air flap
	‹ Pipe connection for hose connection of the exhaust air ø60.3 mm
	‹ When using the fast cooling fan, performance data such as the temperature distribution differ from standard devices
Ordering information	‹ Retrofitting possible after technical clarification

HEAVY-DUTY GRID

In some applications, the load exceeds the permissible maximum weight of 25 kg - 30 kg per shelf. The usual shelves and grids must then no longer be loaded. In this case, a heavy-duty floor grid is recommended that can be loaded with up to 300kg. The heavy-duty floor grid is made of stainless steel and can be combined with all options. Upon request, the floor grid can also be adapted so that special interior fittings can be attached.

Product series	‹ HPPeco ‹ IPPeco ‹ CTC ‹ TTC
	‹ ICP ‹ ICH ‹ U ‹ I ‹ S
Product information	‹ Bottom grid for storing products on the bottom of the unit
	‹ Floor grid can be loaded up to at least 60kg
	‹ Optional fixation
Ordering information	‹ Max. permissible device load must not be exceeded

		30	55	75	110	160	256	260	450	750	1060
Max load (ICP, ICH, IPPeco, HPPeco)	kg	60	80	120	150	160	—	200	200	200	200
Max load (U, I, S, TTC, CTC)	kg	60	80	120	175	160	100	300	300	300	300

TELESCOPIC RAILS EXTRACT

Telescopic rails enable a Memmert appliance to be loaded more ergonomically. The pull-outs can be combined with grids and shelves and can be loaded with 60kg per pull-out. As a rule, three to four telescopic rail extensions can be installed per device, but more extensions are also possible after technical clarification. Devices with an interior volume of 260 liters or more must be equipped with a reinforced interior before the telescopic rails can be attached.

Product series	‹ HPPeco ‹ IPPeco ‹ U ‹ I
Product information	‹ Installation of telescopic slides
	‹ Drawers with grid or shelves
Ordering information	‹ For device sizes 55 -160, the levels are fixed when ordering and cannot be changed later
	‹ With device size 260 -1060, the levels can be flexibly mounted on the interior
	‹ Extension length depends on device size
	‹ Maximum number of extracts can be expanded after technical clarification

			55	75	110	160	260	410	450	750	1060
Option	Interior modification (option K1)			——			●	●	●	●	●
Further data	Max extract	Quantity	Number and position only after technical clarification				3	4	3	4	4
	Max load per level	kg					60				
	Max load per device	kg					300				

STACKING FRAME

To save space in the laboratory or workshop, Memmert devices can be stacked. The m360 stacking frame enables devices of different sizes to be safely stacked, e.g. a UF55 on an IF160. For safety reasons, only two devices can be stacked on top of each other, with the larger of the two devices at the bottom. To allow servicing of the unit below without removing the unit above, an optional slide out electronics box is recommended. The stacking frame is available in stainless steel or black powder-coated. Retrofitting is possible.

Product series	‹ HPPeco ‹ IPPeco ‹ U ‹ I
Product information	‹ Universal stacking frame made of 1.4301 stainless steel
	‹ Devices of different sizes can be stacked. The larger device must be at the bottom.
Ordering information	‹ When retrofitting a stacking frame, a cover for the lower device is included
	‹ Further stacking combinations on request
	‹ A stacking frame is not possible for devices HPP260eco and IPP260eco
	‹ Retrofit possible

ADJUSTABLE FEET

If desired, the castors on Memmert devices can be replaced with adjustable feet. This ensures that users cannot move the device. On uneven surfaces, the adjustable feet can be adjusted and thus level the floor. Adjustable feet are available for all sizes and models and can be retrofitted at any time. m360 can also manufacture custom sized adjustable feet upon request.

Product series	‹ HPPeco ‹ IPPeco ‹ ICP ‹ ICH ‹ U ‹ I
Product information	‹ Installation of devices from size 410 on adjustable feet
	‹ With ICH and ICP for all sizes
	‹ Compensation for unevenness at the installation site
	‹ Leveling foot height approx. 135mm
Ordering information	‹ Retrofit possible
	‹ Clean room suitability possible after technical clarification

SUBFRAME IN A SPECIAL HEIGHT

For the optimal ergonomics of the user, a subframe is recommended, which is manufactured in the desired height of m360 and can be equipped with castors. Special-height subframe are available in stainless steel or black powder-coated. Retrofitting is possible.

Product series	‹ IPPeco ‹ HPPeco ‹ U ‹ I
	‹ 30 ‹ 55 ‹ 75 ‹ 110 ‹ 160 ‹ 260
Product information	‹ Adjustment of the height to customer-specific applications possible
	‹ Stands on castors or leveling feet possible
Ordering information	‹ Height is given from floor to top edge of frame
	‹ Retrofit possible

	30	55	75	110	160	260
Base	●	●	●	●	●	●

AIR EXCHANGE RATE ACCORDING TO ASTM D5374

The air exchange rate defines how many liters of air flows through the device per hour. This information is important for some applications, which is why m360 offers the possibility to measure the air exchange rate according to desired parameters before the device leaves the factory. In the course of the measurement, certificates according to ASTM D5374 are created and made available to the customer.

| Product series	‹ U ‹ I
Product information	‹ Measurement of the air exchange rate at a temperature value according to customer requirements
Ordering information	‹ When ordering, the desired temperature, the number of measurements and the position of the air damper must be specified in %

SPECIAL DEVICES

UF250PLUS

The UF250plus corresponds to the design of the current device generation (GG12) and the dimensions of the previous generation (GG03) UFE600. m360 is frequently contacted for this special device size to replace old UFE600 devices without costly restructuring of the laboratory.

Interior	‹ Stainless steel W.-St. 1.4301 (ASTM 304) with all-round deep-drawn ribbing for the integration of the ceramic-metal coated large area covering
Housing	‹ Structural stainless steel, rear wall made of galvanized sheet steel, intuitively operated TwinDISPLAY (color graphic display) with touchscreen; Fully insulated stainless steel door (double leaf)
Fresh air	‹ Admixture of preheated fresh air through electronically adjustable exhaust air flap
Connection	‹ Connection cable with Schuko plug
Lineup	‹ 4 device feet
Interfaces	Ethernet / LAN USB
Ordering information	‹ Only available with TwinDISPLAY
	‹ Grids on request

Item description			UF250plus
Stainless steel interior	Volume	L	256
	Width	mm	800
	Height	mm	640
	Depth (less 39mm for fan)	mm	500
	Max. number of grids	Quantity	7
	Max. loading per shelf	kg	20
	Max. loading of chamber	kg	300
Textured stainless steel exterior	Width	mm	984
	Height	mm	1023
	Depth (without door handle, depth of handle +56 mm)	mm	684
Standard accessories	Stainless steel grid	Quantity	1
	Standard works calibration certificate	°C	+160
Temperature	Working temperature range	°C	Min. 10 above room temperature to +300
	Setting temperature range	°C	+20 to +300
	Setting accuracy	°C	Up to 99.9: 0.1 from 100: 0.5
Further data	Power consumption at 230 V, 50/ 60 Hz	W	3400

Options		Order no.
Fresh-air filter (filtration efficiency 80 %) mounted at the device bottom		R8
Interior lighting for observing the load		R0
Interior socket (can only be ordered with limited temperature range - max. +60 °C), ampacity 230 V, 2.2 A, can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68 (requires option A8)		R3
Interior nearly gastight - technical clarification required for combination with other options		K2
Gas inlet/outlet through 2 tubes with ball valves - technical clarification required for combination with other options		K3
Entry port with 23 mm clear diameter, for inserting supply lines from the side, can be closed with a flap, standard positions	left middle/ middle	F0
	center/top left	F1
	right middle/ middle	F2
	middle/top right	F3

| Options		Order no.
Entry port with 23 mm clear diameter, can be closed, individual position (please state position)	left	F4
	right	F5
	rear	F6
Entry port with 14 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)		D6
Entry port with 38 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)		F7
Entry port with 57 mm clear diameter, can be closed by flap, individual positions in the back wall (please state position)		F8
Entry port with 100 mm clear diameter, can be closed by flap, individual positions in the back wall (please state position)		F9
4 - 20 mA current loop interface (0 to +310 °C = 4 - 20 mA)	Temperature controller actual value	V3
	Temperature of a Pt100 that can be flexibly positioned in the interior for external temperature monitoring (max. 1 SingleDISPLAY, max. 3 TwinDISPLAY) - price per sensor	V6
Fan speed monitoring: with heating switch-off and alarm in the event of an error		V4
Factory calibration certificate for 3 temperatures: +100, +160, +220 °C		D00128
Factory calibration certificate for a freely selectable temperature specified by the customer		D00109
Lockable door (safety lock with key)		B6
Potential-free contact (24 V/ 2 A) with built-in socket for error messages (ALARM, in case of any error or alarm of the device)		H6
Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY, max. 2 pieces with 1-ph. devices	2 contacts	H72
Process-dependent programmable door lock (only for devices with TwinDISPLAY)		D4
Door-open-recognition (only for devices with TwinDISPLAY)		V5
Flexible Pt100 temperature sensor, positioned fl exibly in chamber or load, for local temperature measurement (a maximum of 3 additional sensors are possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software		H8
MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)		C3
Temperature restriction; Temperatures: +60, +70, +80, +95, +100, +120, +160, +180, +200 or +250 °C (Please indicate upon ordering)		A8
Castor frame (2-part), height 140 mm		R9

Accesories		Best.-Nr.
Stainless steel grid, electropolished		E20167
Ethernet connection cable 5 m for computer interface		E06189
USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number (only for units with TwinDISPLAY)		B33170
Set of height adjustable feet (4 pcs)		B29768
Plug-in tube extension (outer diam. 60.3 mm, inner 57mm), straight, for exhaust air ducting (if necessary forconnection by hose)		B29718
Plug-in tube extension (outer diam. 60.3 mm, inner 57mm), angled, for exhaust air ducting (if necessary forconnection by hose)		B29719
Software conforming to FDA AtmoCONTROL. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA). Base licence for the control of one unit (only for units with TwinDISPLAY). Respective IQ/OQ documents available in German and English language (without surcharge)		FDAQ1
Integration of one additional unit (up to max. 31 units) into an already existent FDA-software licence (only for units with TwinDISPLAY)		FDAQ2
DAkkS calibration at Memmert factory for a freely selectable temperature value according to method C (DKD-R 5-7)		E39696
DAkkS-Kalibrierung für jeden weiteren Temperaturwert		E39697
IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer		D00124
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points at Memmert factory for a freely selectable temperature value according to DIN12880:2007-05 (PQ check list as support for validation by customer)		D00127

UF/ UN400PLUS

Space is often limited in most laboratories or workshops, which is why many users rely on extra tall devices. The UF/UN400plus corresponds to the UF/UN260, only higher. This saves space and there is no need to purchase two devices for stacking.

Interior	‹ Stainless steel W.-St. 1.4301 (ASTM 304) with all-round deep-drawn ribbing for the integration of the ceramic-metal coated large area covering
Housing	‹ Structural stainless steel, rear wall made of galvanized sheet steel, intuitively operated TwinDISPLAY (color graphic display) with touchscreen; fully insulated stainless steel door
Fresh air	‹ Admixture of preheated fresh air through electronically adjustable exhaust air flap
Connection	‹ Connection cable with Schuko plug
Lineup	‹ Mobile and lockable on castors
Interfaces	Ethernet ☐ LAN ☐ USB
Ordering information	‹ Only available with TwinDISPLAY

Item description			UF400plus	UN400plus
Stainless steel interior	Volume	L	384	
	Width	mm	640	
	Height	mm	1200	
	Depth (less 39mm for fan)	mm	500	
	Max. number of grids	Quantity	14	
	Max. loading per shelf	kg	20	
	Max. loading of chamber	kg	300	
Textured stainless steel exterior	Width	mm	824	
	Height (including castors)	mm	1720	
	Depth (without door handle, depth of handle +56 mm)	mm	684	
Standard accessories	Stainless steel grid	Quantity	2	
	Standard works calibration certificate	°C	+160	
Temperature	Working temperature range	°C	Min. 10 above room temperature to +300	
	Setting temperature range	°C	+20 to +300	
	Setting accuracy	°C	Up to 99.9: 0.1 from 100: 0.5	
Further data	Power consumption at 230V, 50/ 60 Hz	W	3400	

Options		UF400plus	UN400plus
Fresh-air filter (filtration efficiency 80 %) mounted at the device bottom		R8	
Interior lighting for observing the load		R0	
Interior socket (can only be ordered with limited temperature range - max. +70 °C), ampacity 230 V, 2.2 A, can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68 (requires option A8)		R3	
Interior nearly gastight - technical clarification required for combination with other options		K2	
Interior nearly gastight with possibility for gas inlet/outlet through 2 tubes with ball valves - technical clarification required for combination with other options		K3	
Entry port with 23 mm clear diameter, for inserting supply lines from the side, can be closed with a flap, standard positions	left middle/ middle	F0	
	center/top left	F1	
	right middle/ middle	F2	
	middle/top right	F3	
Entry port with 23 mm clear diameter, can be closed, individual position (please state position)	left	F4	
	right	F5	
	rear	F6	
Entry port with 14 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)		D6	

| Options		UF400plus	UN400plus
Entry port with an inner diameter of 38 mm, closable with a flap, can be placed individually in the rear wall (please specify position)		F7	
Entry port with 57 mm clear diameter, can be closed by flap, individual positions in the back wall (please state position)		F8	
Entry port with 100 mm clear diameter, can be closed by flap, individual positions in the back wall (please state position)		F9	
4 - 20 mA current loop interface (0 to +310 °C = 4 - 20 mA)	Temperature controller actual value	V3	
	Temperature of a Pt100 sensor positioned fl exibly in chamber for external temperature monitoring (max. 1 SingleDISPLAY, max. 3 TwinDISPLAY) - price per sensor	V6	
Fan speed monitoring with switching off the heating and with alarm in case of failure (for UFplus)		V4	—
Factory calibration certificate for 3 temperatures: +100, +160, +220 °C		D00128	
Factory calibration certificate for a freely selectable temperature specified by the customer		D00109	
Door with lock and key (safety lock)		B6	
Potential-free contact (24 V/2 A) with built-in socket for combination error message (e.g. supply failure, sensor fault, fuse)		H6	
Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY, max. 2 pieces for 1-ph devices	2 contacts	H72	
Process-dependent programmable door lock (only for devices with TwinDISPLAY)		D4	
Door-open-recognition (only for devices with TwinDISPLAY)		V5	
Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (a maximum of 3 additional sensors are possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software		H8	
MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)		C3	
Temperature restriction; Temperatures: +60, +70, +80, +95, +100, +120, +160, +180, +200 or +250 °C (Please indicate upon ordering)		A8	

Accessories	UF400plus	UN400plus
Stainless steel grid, electropolished		E28891
Reinforced stainless steel grid, electropolished, max. loading 60 kg. Please consider max. loading of chamber		E29766
Perforated stainless steel shelf		B29725
Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution)		E29726
Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution)		B29722
Guarantee extension by 1 year		GA2Q5
Ethernet connection cable 5 m for computer interface		E06189
USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number		B33170
Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), straight, for exhaust air ducting (if necessary for connection by hose)		B29718
Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), angled, for exhaust air ducting (if necessary for connection by hose)		B29719
Software conforming to FDA AtmoCONTROL. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA). Base licence for the control of one unit (only for units with TwinDISPLAY). Respective IQ/OQ documents available in German and English language (without surcharge		FDAQ1
Integration of additional units (up to max. 31 units) into an already existent FDA-software licence (only for devices with TwinDISPLAY)		FDAQ2
DAkkS calibration at Memmert factory for a freely selectable temperature value according to method C (DKD-R 5-7)		E39696
DAkkS calibration for each additional temperature value		E39697
IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer		D00124
Q/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points at Memmert factory for a freely selectable temperature value according to DIN12880:2007-05 (PQ check list as support for validation by customer)		D00127

UF2500PLUS

The UF2500plus is a custom sized heating oven that is mainly used for a large scale but lightweight parts, such as fenders. This device can be combined with all standard options. m360 modifications are possible upon request.

Interior	‹ Stainless steel W.-St. 1.4301 (ASTM 304) with all-round deep-drawn ribbing for the integration of the ceramic-metal coated large area covering
Housing	‹ Structural stainless steel, rear zinc-plated steel, intuitively operated Twin-DISPLAY (color graphic display) with touchscreen; fully insulated stainless steel door (two-leaf)
Fresh air	‹ Admixture of preheated fresh air through electronically adjustable exhaust air flap
Connection	‹ Mains cable with plug (German type) CEE plug for 400 V
Lineup	‹ Mobile and lockable on castors Interfaces
Interfaces	Ethernet □ LAN □ USB
Ordering information	‹ Only available with TwinDISPLAY

Item description			UF2500plus
Stainless steel interior	Volume	L	2554
	Width	mm	1680
	Height	mm	1520
	Depth (less 39 mm for fan)	mm	1000
	Max. number of grids	Quantity	18
	Max. loading per shelf	kg	30
	Max. loading of chamber	kg	300
Textured stainless steel exterior	Width	mm	1861
	Height (including castors)	mm	1983
	Depth (without door handle, depth of handle +56 mm)	mm	1186
Standard accessories	Stainless steel grid	Quantity	2
	Standard works calibration certificate	°C	+160
Temperature	Working temperature range	°C	Min. 10 above room temperature to +250
	Setting temperature range	°C	+20 to +250
	Setting accuracy	°C	Up to 99.9: 0.1 from 100: 0.5
Further data	Electrical load at 400V, 50/ 60 Hz	W	9600

Options	Best.-Nr.
Fresh-air filter (filtration efficiency 80 %) mounted at the device bottom	R8
Interior lighting for observing the load	R9
Interior socket (can only be ordered with limited temperature range - max. +70 °C), current carrying capacity 230 V, 2.2 A, , can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68 (requires option A8)	R3
Entry port with 23 mm clear diameter, can be closed, individual position (please state position) left	F4
right	F5
Entry port with 14 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)	D6
Entry port with 38 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)	F7
Entry port with 57 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)	F8
Entry port with 100 mm clear diameter, can be closed by flap, in special positions in the back wall (please state location)	F9

| Options	Best.-Nr.
4 - 20 mA current loop interface (0 to +310 °C = 4 - 20 mA) Temperature controller actual value	V3
Temperature of a Pt100 sensor positioned flexibly in chamber for external temperature monitoring (max. 1 SingleDISPLAY, max. 3 TwinDISPLAY) - price per sensor	V6
Fan speed monitoring with switching off the heating and with alarm in case of failure (for UFplus)	V4
Factory calibration certificate for 3 temperatures: +100, +160, +220 °C	D00128
Factory calibration certificate for a freely selectable temperature specified by the customer	D00109
Door with lock and key (safety lock)	B6
Potential-free contact (24 V/ 2 A) with built-in socket for error messages(ALARM e.g. in case of power failure, sensor error, fuse)	H6
Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY, max. 2 pieces for 1-ph. devices 2 contacts	H72
Process-dependent programmable door lock (only for devices with TwinDISPLAY)	D4
Door-open-recognition (only for devices with TwinDISPLAY)	V5
Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 3 additional sensors possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software	H8
MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6)	C3
temperature restriction; Temperatures: +60, +70, +80, +95, +100, +120, +160, +180, +200 °C or +250 °C (Please indicate upon order)	A8

Accessories	Best.-Nr.
Guarantee extension by 1 year	GA2Q5
Ethernet connection cable 5 m for computer interface	E06189
USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number (only for devices with TwinDISPLAY)	B33170
Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), straight, for exhaust air ducting (if necessary for connection by hose)	B29718
Plug-in tube extension (outer diam. 60.3 mm, inner 57 mm), angled, for exhaust air ducting (if necessary for connection by hose)	B29719
Software conforming to FDA AtmoCONTROL. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA). Base licence for the control of one unit (only for units with TwinDISPLAY). Respective IQ/OQ documents available in German and English language (without surcharge)	FDAQ1
Integration of one additional unit (up to max. 31 units) into an already existent FDA-software licence (only for units with TwinDISPLAY)	FDAQ2
DAkkS calibration at Memmert factory for a freely selectable temperature value according to method C (DKD-R 5-7)	E39696
DAkkS-Kalibrierung für jeden weiteren Temperaturwert	E39697
IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer	D00124
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points at Memmert factory for a freely selectable temperature value according to DIN12880:2007-05 (PQ check list as support for validation by customer)	D00127

ICH450 - ICH450L

Some users require an intermediate size of the ICH series. For this case, the ICH450 and ICH450L were designed by m360. Due to the smaller size, only one light cassette is available in the special device compared to the ICH750L. A CO_2 control can also be installed after technical clarification.

Interior	‹ Stainless steel W.-St. 1.4301 (ASTM 304), deep drawn
Housing	‹ Structural stainless steel, rear zinc-plated steel, intuitively operated TwinDISPLAY (color graphic display) with touchscreen
Doors	‹ Stainless steel fully insulated on the outside, glass on the inside, double leaf
Connection	‹ Connection cable with Schuko plug
Lineup	‹ Mobile and lockable on castors
Interfaces	Ethernet / LAN USB
Orderinginformation	‹ Not available as an ICHeco variant
	‹ No second light cassette possible
	‹ ICHc variant on request

Item description

			450	450L
Stainless steel interior	Volume	L	449	
	Width	mm	140	
	Height	mm	720	
	Depth (less 39mm for fan)	mm	600	
	Max. number of grids	Quantity	8	
	Max. loading per shelf	kg	30	
	Max. loading of chamber	kg	200	
Textured stainless steel exterior	Width	mm	1224	
	Height (including castors)	mm	1467	
	Depth (without door handle, depth of handle +56 mm)	mm	784	
Standard accessories	Stainless steel grid	Quantity	2	
	Entry port at the back, 40 mm clear diameter, moisture tight, with silicone stopper		●	
	Water tank including connection hose		●	
	Standard works calibration certificate		+10, +30 and +37 °C with 60% RH	
Temperature	Working temperature range without humidity ICH (not suitable for long-term storage at sub-zero temperatures. The glass door may ice up during continuous operation)	°C	-10 to +60	—
	Working temperature range ICH/ICHL with humidity and/or light	°C	+10 to +60	
	Working temperature range ICHL without humidity	°C	-	0 to +60
	Setting temperature range ICH/ ICHL	°C	-10 to +60	0 to +60
	Setting accuracy	°C	0,1	
Humidity	Setting range humidity	% rh	10 to 80	
	Setting accuracy	% rh	0,5	
Light	Illumination unit (only ICHL) acc. ICH Q1B, option 2; separately switchable via controller, one box; number of fluorescent lights with cold white light: 4), light color 865 6500K; number of fluorescent lights with UV lamps: 2); spectral range 320-400 mm (daylight and UV light correspond to standard light D65)		—	—
Further data	Electrical load at 230 V, 50/60 Hz	W	1350	1550

Options		450	450L
Chamber modification for the application of reinforced perforated stainless steel shelves or stainless steel grids (bearing rails mounted in the working chamber) - includes replacement of standard grids by reinforced grids (ICHeco/ ICH and ICH C only)		K1	—
Alternative light boxes (replace the standard lighting; have to be ordered together with the chamber); number of fluorescent lamps: 6, with cold white light (Daylight: light color 865, 6,500 K; corresponds to daylight Standard light D65) (only ICH L)	one box	—	T81 (without surcharge)
Alternative light boxes (replace the standard lighting; have to be ordered together with the chamber); number of UV lamps: 6, in the spectral range from 320 to 400 nm (UV light corresponds to standard light D65) (only ICHeco L/ ICH L)	one box	—	T01 (without surcharge)
Interior socket, ampacity 230V, 2,2 A, can be switched off with the On/Off switch, cannot be switched individually, moisture tight IP68		R3	
Entry port with 23 mm clear diameter, zum seitlichen Einführen von Zuleitungen, moisture tight, can be closed by silicone stopper, standardposition (F1 and F3 not for models ICHeco L/ICH L)	left centre/centre	F0	F0
	left centre/top	F1	
	right centre/top	F3	—
Entry port (silicone), 40 mm clear diameter, moisture tight, can be closed by silicone stopper, at the back (please state location) . Not for models ICHeco L/ICH L.		F7	—
4 - 20 mA current loop interface	Temperaturregler Istwert (-20 bis +70 °C = 4 - 20 mA)	V3	
	Temperatur eines flexibel im Innenraum positionierbaren Pt100 für externe Temperaturüberwachung (max. 3) (-20 bis +70 °C = 4 - 20 mA)	V6	
	Feuchteregler Istwert (0 bis 100 % rh = 4 - 20 mA)	V7	
Fan speed monitoring with switching off the heating and with alarm in case of failure		V4	
Factory calibration certificate for one (freely selectable) temperature and humidity value		D00105	
Factory calibration certificate for one (freely selectable) temperature, humidity and CO2 value (ICH C)		D00131	
Compressed air dehumidification (efficient dehumidification of the interior by means of compressed air). Standard works calibration certificate (measuring point chamber centre) at +10 °C with 10 % RH		C9	
Door with lock and key (safety lock)		B6	
Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse		H6	
Door-open-recognition, shuts down humidity, light and CO_2 (standard with ICHeco L/ICH L)		V5	
MobileALERT, notifi cation by SMS in case of any error or alarm of the device (requires option H6)		C3	

Accessories	450	450L
Stainless steel grid, electropolished		E20182
Reinforced stainless steel grid, electropolished, max. loading 60 kg; size 750 with guide bars and fi xing screws (requires option K1). Please consider max. loading of chamber		B32190
Reinforced stainless steel shelf, max. loading 60 kg; with guide bars and fi xing screws (requires option K1). Please consider max. loading of chamber		B32191
Stainless steel slide-in drip tray, 15 mm rim (may affect the temperature distribution, not in connection with option K1)		E02075
Stainless steel slide-in drip tray, 15 mm rim, with guide bars and fi xing screws (may affect the temperature distribution, only in connection with option K1)		B32763
Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution, not in connection with option K1)		B04362
Stainless steel bottom drip tray, 15 mm rim (may affect the temperature distribution, only in connection with option K1)		B34055
Central water supply with fi lter cartridges for connection to the domestic water supply. Product information on demand		ZWVR6
Central water supply without filter cartridges for connection to the domestic water supply (only for demineralised water with a conductivity of 5 to 10 µS/cm and a pH value between 5 and 7). Product information on demand		ZWVR7

Accessories	450	450L
USB-Ethernet adapter		E06192
Ethernet connection cable 5 m for computer interface		E06189
USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number		B33170
Software conforming to FDA AtmoCONTROL. Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA). Respective IQ/OQ documents available in German and English language (without surcharge)		FDAQ1
Integration of additional units (up to max. 31 units) into an already existent FDA-software licence		FDAQ2
External measuring instrument with sensors for daylight and UV-light. Product information on demand (only ICHeco L/ICH L)	—	B04713
External measuring instrument with additional measuring head for temperature and humidity measurement. Product information upon request		B04714
DAkkS calibration for one (freely selectable) temperature and humidity value according to method C (DKD-R 5-7)		E48847
DAkkS calibration for each additional temperature and humidity value		E48848
IQ document with device-specifi c works test data, OQ/PQ check list as support for validation by customer		D00124
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points at Memmert factory for a freely selectable temperature value according to DIN12880:2007-05 (PQ check list as support for validation by customer)		D00127
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points and 1 humidity measuring point in centre of usable space at Memmert factory for a freely selectable temperature and humidity value according to DIN12880:2007-05 (PQ check list as support for validation by customer)		D00136
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points, 1 humidity measuring point and 1 light intensity measuring point in centre of usable space at Memmert factory for a freely selectable temperature, humidity and light intensity value according to DIN12880:2007-05 (PQ check list as support for validation by customer) (model ICHeco L/ICH L)		D00137

UNIVERSAL OVEN DISHWASHER - UF750DW

The dishwasher is a UF heated oven that conforms to the EN 50342 standard and is required by dishwasher manufacturers. In order to properly test the dishwashers, leftovers on plates, glasses, etc. are first dried according to very specific specifications in the Memmert Dishwasher UF750DW. The UF750DW dishwasher was recently redesigned by m360 and now corresponds to the current Memmert design.

Interior	‹ Stainless steel W.-St. 1.4301 (ASTM 304) with all-round deep-drawn ribbing for the integration of the ceramic-metal coated large area covering
Housing	‹ Structural stainless steel, rear zinc-plated steel, intuitively operated Twin-DISPLAY (color graphic display) with touchscreen; fully insulated stainless steel door (two-leaf)
Fresh air	‹ Admixture of preheated fresh air through electronically adjustable
Connection	‹ Mains cable with plug (German type) CEE plug for 400 V
Lineup	‹ Mobile and lockable on castors
Interfaces	Ethernet / LAN, USB
Ordering information	‹ Only available with TwinDISPLAY

Item description				UF750dw
Stainless steel interior	Volume		Liter	749
	Interior width		mm	1040
	Interior height		mm	1200
	Interior depth		mm	600
	Max. number of grids		Quantity	14
Textured stainless steel exterior	Chamber width		mm	1224
	Unit height (on castors)		mm	1720
	Device depth (without door handle, door handle depth +56mm)		mm	784
Standard accessories	Loading set consisting of 8 grids and 16 spacer strips - incl. 3 grid baskets for cups/glasses, made of stainless steel, material 1.4301 (ASTM 304)			●
	Factory calibration certificate 80 °C			●
Temperature	Working temperature range (at room temperature +22 °C)		°C	+20 to 100
	Setting temperature range		°C	+20 to 100
Further data	Electrical load at 400 V and 3 x 230V w/o neutral, 50/60 Hz		W	4800
	Electrical load at 230 V, 50/60 Hz		W	4800

Options	Order no.
Potential-free contact (24 V/2 A) for combination error message (e.g. supply failure, sensor fault, fuse)	H6
Potential-free contact (24 V/2 A) with socket, for signal generation, controlled by programme segment, for free-selectable functions to be activated (e.g. activation of audible and visual signals, exhaust motors, fans, stirrers, etc.). Only for units with TwinDISPLAY	H72
Flexible Pt100 temperature sensor, positioned flexibly in chamber or load, for local temperature measurement (up to 1 additional sensor is possible). The measured temperature will be indicated on the display, recorded in the integral data store, and can be documented via the AtmoCONTROL software	H8

Accessories	Order no.
Plug-in tube extension - straight	B29718
Plug-in tube extension - angled	B29719
Additional load consisting of 8 grids and 6 place settings and 3 mesh baskets for cups/glasses, made of stainless steel, material 1.4301 (ASTM 304)	B51799
Ethernet connection cable	E06189
IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer	D00124
IQ/OQ document with device-specific works test data, including temperature distribution survey with 27 temperature measuring points at Memmert factory for a freely selectable temperature value according to DIN12880:2007-05 (PQ check list as support for validation by customer)	D00127

ESD CHAMBER MODIFICATION

m360 offers an ESD device modification as an accessory. In addition to replacing the standard seal with an ESD seal, the ESD modification package offers additional safety precautions against electrostatic charging of the device, such as ESD-capable castors and grounding bolts. This modification is basically available for all devices, but is mainly requested for UF devices for industrial applications.

Product series	‹ HPPeco ‹ IPPeco ‹ U ‹ I
Product information	‹ Connection of individual device components for equipotential bonding on the device
	‹ Grounding options for connection to subframe and customer grounding systems
	‹ Modification of the door hinges
Ordering information	‹ Pay attention to the temperature range of the device when ordering
	‹ For size 30 - 260 castor frame (option R9) or subframe additionally required
	‹ Temperature limit A8 for ESD seal to 180 °C included with Universal oven

PLASTILINE OVEN UF

Plasticine is a malleable material that can be used to model parts and is primarily used in the automotive industry. Thanks to the specially programmed heating, the m360 Plasticine oven UF tempers the material gently in order to obtain an ideal consistency for modelling. All electronic components in the switch box of the device are also provided with a protective coating so that gases escaping from the plasticine do not damage the circuit boards.

Product series	‹ UFplus
Product information	‹ Specially designed for the process of heating plasticine mass
	‹ Material-friendly heating times
	‹ Blocked ventilation openings
	‹ Protective coatings for electronic components
Ordering information	‹ Temperature limit A8 to 80 °C included

Item description			160	260	450	750	1060
Stainless steel interior	Max. number of grids	Quantity	8	9	8	14	
	Max. loading per grid	kg	60				
	Max. loading of chamber	kg	210	300			
Equipment	Stainless steel grids designed for plasticine application		2				1
	Heavy-duty expansion (Option K1)		—	—	●	●	●
	Door-open-recognition (Option V5)		●	●	●	●	●
	Temperature restriction (Option A8)		●	●	●	●	●
Temperature	Working temperature (at +22 °C room temperature)	°C	+10 to +80				
	Setting temperature	°C	+20 to +80				

EVERYTHING YOU NEED TO KNOW ABOUT YOUR ORDER

CONTACT US

The List of Services serves to provide information for product adjustments that are implemented by m360 on a recurring basis. Due to the continuous development of m360's special solutions, we would like to point out that due to changes, completeness and latest information cannot always be guaranteed. An initial check of the technical feasibility is required for some of the solutions presented here. Depending on the individual customer case and advice from m360, the solutions presented here can be implemented in a modified form and product information can therefore differ.

In addition, we would like to point out that the sketches, drawings, constructions and ideas created by us during the manufacture and after the purchase of the product remain the property of the Memmert company and that duplication or distribution is prohibited.

Mass and weight
- The weights and packing dimensions contained in the list are approximate values that may vary depending on the product variant and additional equipment.

Delivery terms
- Within Germany, we deliver devices with the appropriate accessories free of charge on the basis of our general terms and conditions. Please note that in the case of custom-made products, different delivery conditions may have to be agreed upon individually.

Warranty
- In addition to the statutory provisions on the 12-month warranty, new devices from the m360 Modifications category also have a 2-year warranty from the invoice date for damage attributable to material and/or production errors. The 2-year warranty also applies to vacuum pumps and cooling units.

The legally defined warranty of 12 months according to the valid terms and conditions of Memmert GmbH + Co. KG applies to new devices from the category m360 Innovations and spare parts.

Calibration certificates, transport damage, glass and wear parts (e.g. membranes, valves, sealing rings, etc.) as well as damage caused by accident, negligence, improper operation and neglected maintenance work (see operating instructions) are excluded from the guarantee. Maintenance costs and any additional costs incurred for on-site repairs or on-site removal or installation are not covered by the guarantee.

D-A-CH CONTACT

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SOLUTIONS
FOR YOU