



From planning to implementation:

One-stop provider for centralized instrument reprocessing.

MMM. Protecting human health.

MMM has been operating worldwide as one of the leading system providers in the service of health since 1954. With a full portfolio of products and services pertaining to cleaning, disinfection and sterilization systems for hospitals, scientific institutes, laboratories and the pharmaceutical industry, MMM has positioned itself as a crucial quality driver and innovator on the German and international markets.

The MMM products manufactured in our own production facilities combine industrial production and high-quality Made in Germany workmanship with state-of-the-art control systems and quality to meet all requirements of our customers.

MMM Group in healthcare – everything from a single source

The requirements for commercial, logistical and organizational processes for managing a hospital are becoming more and more complex. Particularly because there are so many tasks and so many different solutions, our customers need partners who are reliable, competent and directly involved to manage the specific site conditions. We consider ourselves as not just a supplier of high-end medical devices but as a

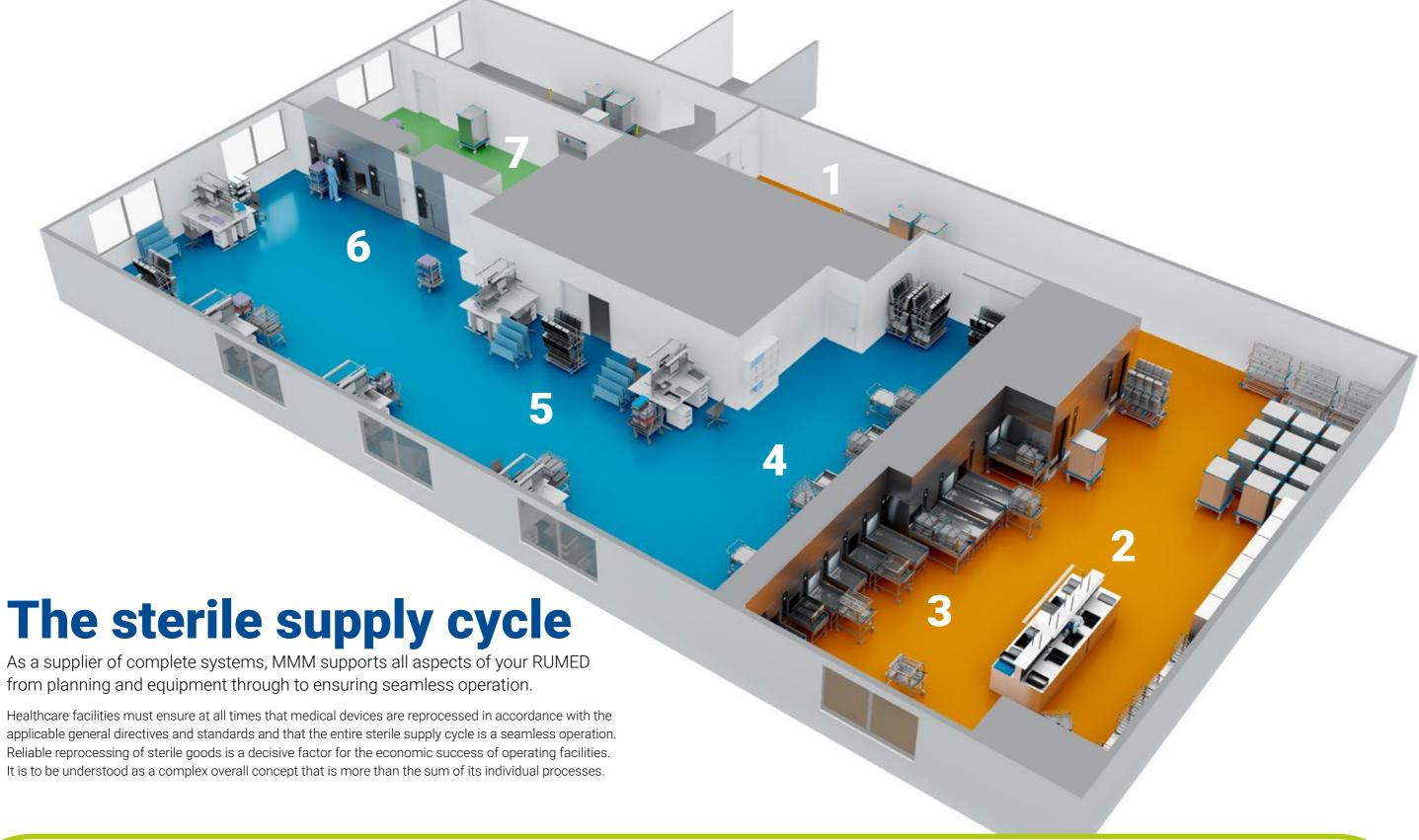
complete supplier of services and solutions that make both a commercial and medical contribution to society, ensuring people become healthy and remain healthy.

MMM Group is more than a manufacturer – our holistic approach

MMM offers a comprehensive range of expertise for all aspects of the RUMED*. Our services cover the manufacture of our own products, detailed planning and consultation, software, installation, logistics and service, which includes the validation of all processes in the RUMED right through to the project management of all construction works for the cleaning, disinfection and sterilization departments.

*Reprocessing Unit for Medical Devices



















2 Manual precleaning

3 Automatic cleaning and disinfection

4 Unloading racks and trolleys

5 Checking and packing instruments

6 Sterilization

Unloading, release and storage



As the central interface, we plan, monitor and manage your construction project and provide you with turnkey functional units.



Feasibility analysis and calculation of capacity

At the start of a project, our experts make an inventory to record the basic conditions and variables in your facilities. After comprehensive analysis and calculation of capacity, we prepare practical recommendations for creating the optimum system for you.



Concept, design and planning

MMM develops a customized concept based on your spatial and logistical conditions using 3D layout planning and visualization and manages the entire process starting from obtaining approvals and planning the design for construction, technical building services and medical technology.



Implementation

A team of experienced technicians installs and assembles all systems and also commissions and tests them. In addition to carrying out and monitoring all stages of the installation, we also ensure that your RUMED is safe for operation (establishment of a QM system, workflow optimization etc.).



Continuing operation

With our focus on safety and sustainability, we work with you and your employees throughout the complete life cycle to guarantee the continuing high quality of your RUMED over the long term.



Holistic solutions for reprocessing of

The increasing complexity of specialist buildings in the healthcare system requires technical facilities management with medical expertise. With almost 70 years of experience in sterile goods reprocessing and as an in-house manufacturer of products, MMM has specialized in the construction of new and reconditioned reprocessing units for medical devices and their connection to adjoining departments.



MMM solutions

From high-volume items to complex robotic instruments.

We cater for your individual needs: from the Uniclean® PL II 10 with a width of just 700 mm right through to the Uniclean® PL II 30 with a width of 1000 mm and its 2-in-1 tandem chamber for double capacity. The Uniclean® ML container washer offers versatile loading possibilities, particularly for bulky goods.



Uniclean® PL II 10 − for 12 DIN trays

High performance on a small footprint

Developed and designed to meet the requirements of processing units in small and medium-sized hospitals and ambulant operating centers that require a high performance on a small footprint. Maximum width only 700 mm. Capacity for 12 DIN trays. Smart HMI with 7.0" color screen. 4D Aqua Frame rack design. High serviceability.



Uniclean® PL II 15 – for 18 DIN trays

High cleaning and drying power

Powerful washer-disinfector designed for thorough reprocessing of large quantities of medical devices. The innovative single-chamber machine can accommodate 18 DIN trays and has a compact design with a width of only 1000 mm. 4D cleaning system with water management. H-Flow high-performance drying system. High serviceability. Reprocessing of daVinci instruments.



Uniclean® PL II 30 – for 36 DIN trays

Tandem chamber for large capacities

The 2-in-1 tandem chamber can reprocess up to eight 1 StU sterile containers and up to twelve ½ StU sterile containers or up to 36 DIN instrument trays in one cycle. Slim machine dimensions (1000 mm wide). 2 racks with double the reprocessing capacity. Shuttle operating function without rack removal. Same racks and peripherals as for Uniclean® PL II 15. Reprocessing of daVinci instruments.



Uniclean® ML

Large chamber washer-disinfector

The Uniclean® ML stands for state-of-the-art technology, the best possible cleaning results and most convenient operation for cleaning and disinfecting non-critical and semi-critical medical devices as well as large-volume goods such as transport trolleys, instrument containers, OR shoes, plastic containers, bowls and kidney basins in hospitals. The machine is available in three different chamber sizes.



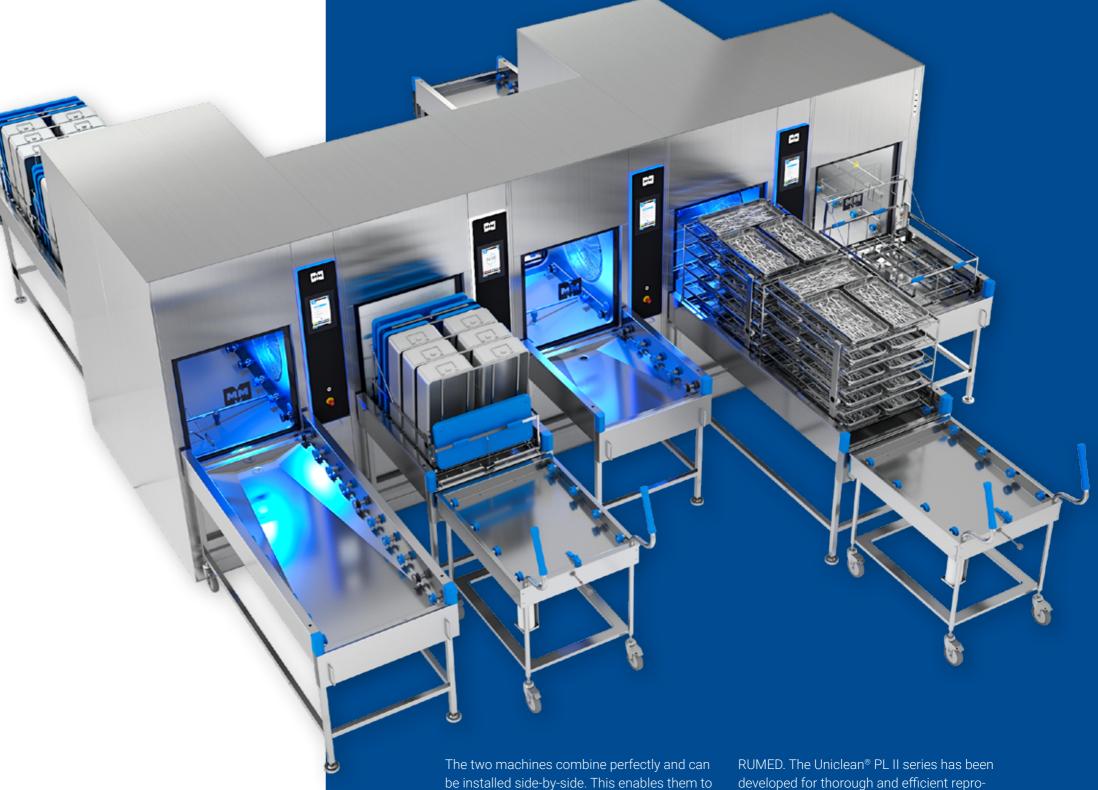
concept 15.30

A scalable system

Under the name "concept 15.30", the MMM Group offers optimized solutions for a high reprocessing capacity in a small space. The combination of a Uniclean® PL II 15 machine for 18 DIN trays and a Uniclean® PL II 30 machine for 36 DIN trays opens up new solutions for designing the room layout and optimizing the workflow.

Highlights

- I One product range one scalable system
- I High capacity and flexibility in a small space with custom layout design
- I Choice of manual or automatic loading and unloading
- I Parallel loading and unloading possible
- I Shuttle function for the Uniclean® PL II 30 provides new options for workflow optimization
- I Identical racks and accessories
- I Ample storage space for racks
- I Flexible prioritization for express batches
- I Emergency concept not required
- I Existing installations can be extended or retrofitted at any time with the Uniclean® PL II 30 to increase capacity



The two machines combine perfectly and can be installed side-by-side. This enables them to cater for the specific situation on site. Synergy effects are achieved with the devices coming from the same range of products (same racks, transport trolleys, roller conveyors and spare parts), which increases efficiency in your

RUMED. The Uniclean® PL II series has been developed for thorough and efficient reprocessing of medical devices, such as general surgical and MIS instruments, anesthetic materials, ophthalmological instruments, containers, receptacles, bowls, basins, OR shoes and other utensils.

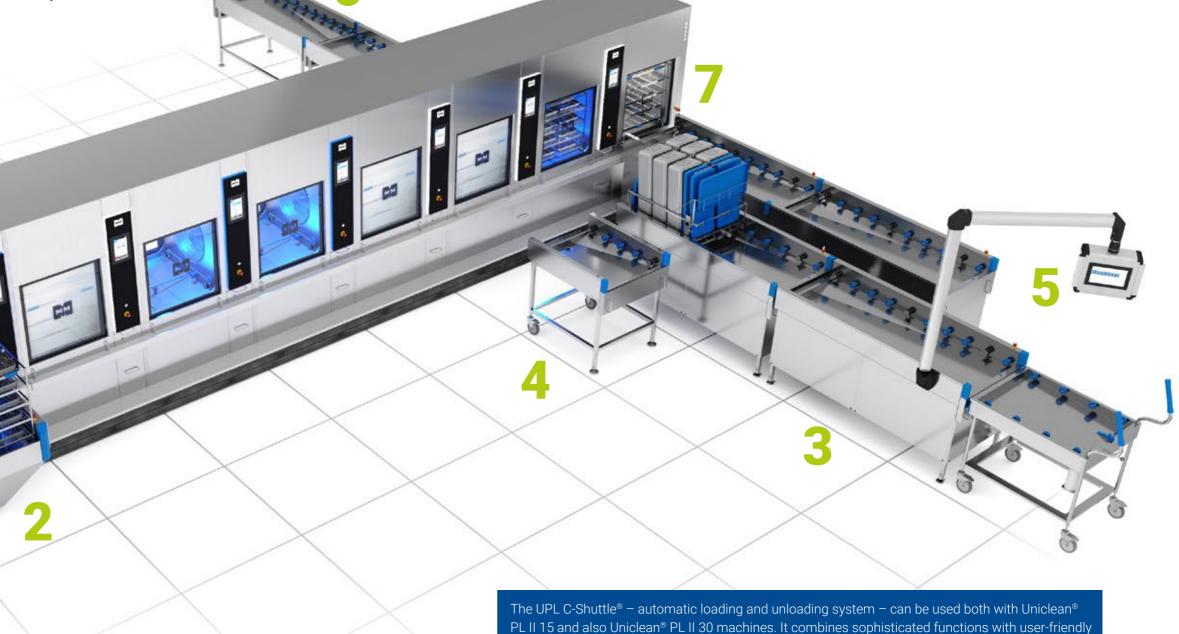
UPL C-Shuttle®

Flexible, fully automatic and safe loading and unloading for concept 15.30 washer-disinfectors.

- I Automatic loading and unloading of three to eight cleaning machines (in the Uniclean® PL II 15 or Uniclean® PL II 30 series)
- I Vacant spaces for a later expansion to the full eight machine configuration can be provided
- I Automatic unloading with roller conveyors
- I Uniform utilization of the cleaning machines
- I Priority roller conveyor for express cycles
- I Flexibly expandable buffer roller conveyor for 2, 4 or 6 racks on the loading and unloading side
- I Simple to operate
- I Semi-automatic unloading of the racks onto the transport trolley
- I High safety standard

- I Manual loading possible at anytime in case of failure
- I Flexible layout options to suit the on-site situation
- I Control panel with flexible swivel arm
- I Designed for central dosing
- I Ergonomic transport trolleys
- I Autonomous rack return roller conveyor with rack hatch

- 1 Max. 8 Uniclean® PL II 15 or 30
- 2 UPL C-Shuttle®
- Buffer roller conveyor for 2, 4 or 6 racks on the loading side
- 4 Priority roller conveyor for one rack
- 5 PLC controller and swiveling control panel
- 6 Buffer roller conveyor for 2, 4 or 6 racks on the unloading side
- 7 Automatic rack return with rack hatch (autonomous)



ergonomics for an optimized workflow.



Intelligent solutions

for the sterilization of medical devices

Device options for economical and environmentally-compatible operation such as the MMM steam manager and recovery system, water-saving vacuum pump or the MMM energy manager can significantly reduce operating and media expenses.



Selectomat® PL Compact Line

High performance on a small footprint

Compact, space-saving steam sterilizer for up to 12 StU. For quick and reliable sterilization of instruments, utensils, textiles, plastic and complex MIS instruments as well as other medical devices in healthcare facilities such as hospitals, clinics and industrial suppliers of sterile goods. Customer-specific equipment options available. SteamSpy® - integrated Bowie-Dick test and batch control.



Selectomat® PL Premium Line

The intelligent solution for the RUMED

Large capacity sterilizer for 2 StU to 18 StU. For quick and reliable sterilization of instruments, utensils, textiles, plastic and complex MIS instruments as well as other medical devices in healthcare facilities such as hospitals, clinics and sterile goods suppliers. Customer-specific equipment options available. SteamSpy® - integrated Bowie-Dick test and batch control. APPcycles® for energy- and time-optimized sterilization cycles, CIP-Adero® automatic chamber cleaning. The sterilizer is available as a V, H or G variant.



Unisteri® SL

Great technology – compact design

The compact Unisteri® SL steam sterilizer with a chamber capacity of one or two StU is particularly user-friendly thanks to its large touch-screen. This revolutionary new steam sterilizer has been designed especially for sterilization tasks such as the gentle and economical sterilization of instruments, textiles, thermostable plastics, and similar medical items in outpatient departments, medical practices, polyclinics, as well as central sterilization and substerilization departments.



Vacudes® PL

Large disinfection system for bedding stations

For disinfecting solid and porous goods such as mattresses, bed linen, clothing and similar utensils. In bedding stations, the Vacudes® PL steam disinfection system is particularly suitable for the efficient reprocessing of large quantities of mattresses and bed linen. The machine works according to a fractional vacuum process (VDV process) with repeated evacuation of the disinfection chamber for areas AB and ABC. Capacity in mattresses according to DIN 13014: 6, 9 and 12.



The innovative electronic solution for tracking down gaps in steam penetration.

SteamSpy®: Integrated automatic Bowie-Dick test

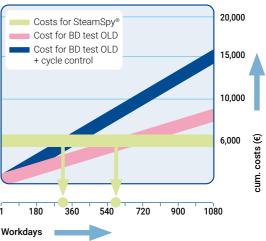
The optional SteamSpy® is an electronic Bowie-Dick test that is permanently integrated into the sterilizer and is program-controlled. The test results are shown in the cycle report.

SteamSpy® also acts as a continuous cycle

The operating costs per sterile unit can be significantly reduced, as chemical indicators are no longer required. Manual intervention for routine controls can be dispensed with com-

Saves time and money

pletely. This time saving for the staff results in a higher productivity.



control. This ensures that you will never again forget to insert and document it. The special aspect of SteamSpy® is its ease of use.

MMM SteamSpy® meets the requirements of ISO 11140-4 and is a recognized alternative to the Bowie-Dick test.

Daily time saving with SteamSpy® compared to the conventional BD test per machine:



*These figures may vary depending on the specific process in the RUMED and the chamber size of the machine. The values shown are average values.

How SteamSpy® works

SteamSpy® comprises a test body permanently installed in the chamber that simulates a lumened surgical instrument and a measuring device attached to the outer chamber wall. Its design enables the effectiveness of steam penetration, both in cavities and in porous material, to be verified. The steam penetration determined by the measurement system is continuously evaluated during the running sterilization program. A warning appears in the event of a failure. The result is prominently displayed in the cycle report.





Low temperature sterilization

Particularly heat sensitive items and instruments with complex, narrow lumen geometries require careful and safe reprocessing. A high material compatibility and efficiency play an essential role in this regard.



Hyper LTS® 150

H₂O₂-based low temperature plasma sterilizer

The high quality Hyper LTS® 150 has been specially designed to sterilize sensitive or heat-sensitive medical devices. It features unmatched technologies of the highest safety standard and meets the most stringent requirements. With an intuitive controller and user-friendly interface, the Hyper LTS® 150 is easy to use and operate.

Standard programs

Depending on the application and manufacturer's specifications, one of the following programs can be selected:





COMPLEX Duration: 60 min ММ

Formomat® PL

Low temperature steam and formaldehyde sterilizer

The Formomat® PL with the LTSF (low temperature steam and formaldehyde) process according to DIN EN 14180 was developed specifically for the gentle processing of heat-sensitive items and medical devices. The formaldehyde-based sterilization process meets all the relevant safety requirements.

Standard programs

Depending on the application and manufacturer's specifications, one of the following programs can be selected:





CLASSIC: 60 °C



GENTLE: 55 °C Duration: 120 min



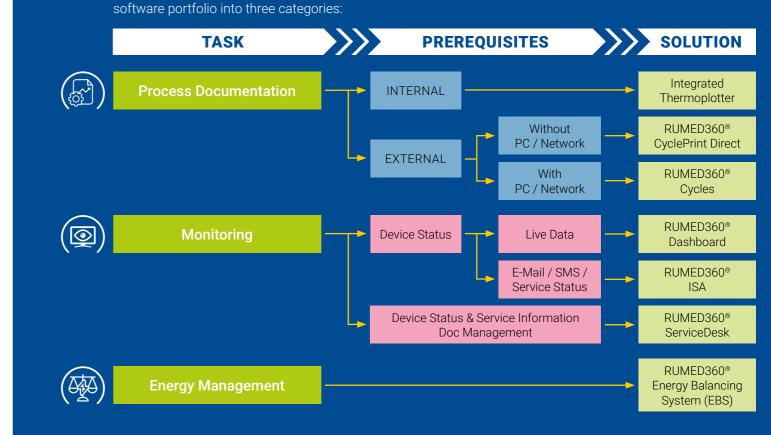
RUMED360®

Software applications

Digitalization has established itself as an integral and indispensable part of healthcare for some time now.

In the modern working environment of a RUMED, process monitoring and digital documentation are important and essential components of an almost paperless working life. The resultant process and workflow optimization brings with it greater profitability, efficiency and safety.

The RUMED360® software applications developed by MMM combine all these attributes and make a significant contribution towards ensuring a user-optimized and efficient implementation of the work processes in a RUMED. The Energy Management application, for example, helps keep the investment costs for the central energy supply at a minimum while still optimally covering the peak loads and ensuring high productivity.



To help you find the right applications for your specific requirements, we have divided the RUMED360®







Modular solutions

for healthcare

We reduce complex procedures to a simple, economic and complete system. The fundamental plan is subdivided into intelligent functional units – the later room modules. All necessary steps in production meet logistically refined industrial conditions. This practically eliminates the delays, such as weather conditions, scaffolding times, trade scheduling etc., associated with commonly used building technologies.

Turnkey modular buildings for rental or purchase

Up to 90% of the modules including medical technology and technical infrastructure are prefabricated. The "visible" construction is simply reduced to a single transportation to the construction site, where the modules are quickly linked to form the entire building. In doing so, we focus on one essential thing – professionally implementing the specific needs of our customers.

Renovation during continuing operation

In many cases, the renovation of a RUMED involves not only the replacement of machines but also adaptation of the processes and media to new standards or a change in circumstances. Maintaining the supply of sterile goods for continued operation of the hospital during renovation works is one of the greatest challenges. The main question at the start of the project is: renovation during continuing operation or move operations to another RUMED? Our experience as a total solution provider has shown: renovation during continuing operation often involves major restrictions for personnel and processes and increased costs due to construction requirements to maintain hygienic requirements.





MMM Group has the solution: A modular RUMED

Modular solutions

Advantages and USPs at a glance

- I High quality thanks to industrial manufacturing process.
- I Short communication paths and on-site visits at short notice.
- Know-how far beyond systems technology, "single source solutions"
 assessment, planning, design and manufacturing as well as in-house assembly.
- I "Made in Germany" quality.
- I Preliminary offer and associated documents, technical drawings within just 1 week!
- I Support with engaging operator services.
- I Solutions for "highly sensitive" areas with stringent requirements on hygiene in a hospital or outside the RUMED environment.
- I Business case and optimal configuration proposal for processes and staff within the RUMED.
- I Training of the staff on hygiene and sterilization standards.
- I Establishing a production base for on-site modular buildings.
- ... and all the well-known advantages of modular construction technology.

Extended scope of services beyond a typical turnkey project



Initial evaluation

Analysis of the initial situation, evaluation of possible scenarios.



Logistics and resources

Planning and optimization.



Conceptual planning

Centralized vs decentralized solution, plausibility.



Solution concept

Layout, description, quote.



Capacity planning

Medical devices and furnishings.



Business case

Calculation and optimization. (CAPEX, OPEX, RoI, etc.)



for 2-door models

1,820 x 670 x 990

1,612 x 700 x 925

RUMED product portfolio

Washer-disinfectors						
Product	Capacity DIN tray	Doors		Usable chamber dimensions in mm	Usable chamber	External dimensions
		1 door	2 doors	(H x W x D)	volume in L	in mm (H x W x D)
Uniclean® PL II	I					
10	12	•	•	688 x 523 x 600	216	2,300 x 700 x 830 (777)
15	18	•	•	648 x 640 x 820	340	2,090 x 1,000 x 950
30	36		•	648 x 640 x 1,640	680	2,090 x 1,000 x 1,778
Uniclean® ML						
1620	30		•	2000 x 1,060 x 1,650	3,500	2,500 x 2,410 x 2,050
2220	60		•	2000 x 1,060 x 2,230	4,730	2,500 x 2,300 x 2,630
3120	60		•	2000 x 1,060 x 3,100	6,570	2,500 x 2,300 x 3,500

				Steam sterilizers		
Product	Capacity StU	Doors		Chamber (rack) dimensions in mm	Usable chamber	External dimensions
		1 door	2 doors	(H x W x D)	volume in L	in mm (H x W x D)
Unisteri® SL						
336	1	•	•	320 x 320 x 625	73	1,500 x 600 x 800
636	2	•		670 x 350 x 700	160	1,720 x 690 x 967
636	2		•	670 x 350 x 700	160	1,720 x 690 x 1,022
559	***	•		509 x 509 x 990	254	1,720 x 850 x 1,247
559	***		•	509 x 509 x 990	254	1,720 x 850 x 1,302
Selectomat® P	L Compact Line					
559	1	•	•	508 x 508 x 990	254	2,200 x 895 x 1,290**
636	2	•	•	670 x 360 x 700	160	2,400 x 795 x 990**
666	4	•	•	702 x 652 x 690	314	2,400 x 995 x 990**
669	6	•	•	702 x 652 x 990	453	2,400 x 995 x 1,290**
6612	8	•	•	702 x 652 x 1,340	610	2,400 x 995 x 1,640**
6618	12	•	•	702 x 652 x 1,940	883	2,400 x 995 x 2,240**
Selectomat® P	L Type V					
636	2	•	•	670 x 350 x 700	160	1,918* x 1,000 x 990**
666	4	•		702 x 652 x 690	314	1,918* x 1,300 x 990**
669	6	•	•	702 x 652 x 990	453	1,918* x 1,300 x 1,290**
6612	8	•	•	702 x 652 x 1,340	610	1,918* x 1,300 x 1,640**
Selectomat® P	L Type H					
666	4	•	•	710 x 650 x 690	320	1,918* x 1,600 x 990**
669	6	•		710 x 650 x 990	460	1,918* x 1,600 x 1,290**
6612	8			710 x 650 x 1,340	622	1,918* x 1,600 x 1,640
966	6			1,000 x 650 x 690	451	1,918* x 1,600 x 990
969	9	•		1,000 x 650 x 990	647	1,918* x 1,600 x 1,290**
9612	12	•		1,000 x 650 x 1,340	875	1,918* x 1,600 x 1,640**
9618	18			1,000 x 650 x 1,940	1,267	1,918* x 1,600 x 2,240
Selectomat® P	L Type G					
969	9		•	1,360 x 720 x 1,090	1,067	1,918 x 1,900 x 1,390
9612	12			1,360 x 720 x 1,390	1,361	1,918 x 1,900 x 1,690
9618	18			1,360 x 720 x 2,140	2,095	1,918 x 1,900 x 2,440

Steam sterilizer for bedding stations						
Product	Pit	Nominal size acc. to DIN 58949	Capacity in bed equipment acc. to DIN 58949	Capacity in mattresses acc. to DIN 13014-M 2000	External dimensions in mm (H x W x D)	
Vacudes® PL						
1500		2 (10 x 8 x 21)	4 BE	6	2,488 x 2,490 x 2,860	
2000		3 (12 x 10 x 21)	7 BE	9	2,488 x 2,690 x 2,860	
3000		4 (16 x 10 x 21)	10 BE	12	2,488 x 2,690 x 2,860	
1501	•	2 (10 x 8 x 21)	4 BE	6	2,318 x 2,530 x 2,860	
2001		3 (12 x 10 x 21)	7 BE	9	2,318 x 2,730 x 2,860	
3001		4 (16 x 10 x 21)	10 BE	12	2,318 x 2,730 x 2,860	

* Including 100 mm base ** Depth reduced by 20 mm on single-door devices



Heat-sealing devices						
Product	Connection to label printer	Monit	toring	LCD display	TFT color touch display	External dimensions in mm (H x W x D)
		Temperature & contact pressure	Sealing speed			
SteriPack®						
Model 85		•		•		240 x 710 x 260
Model 95	•	•	•		•	255 x 560 x 154

(H x W x D)

320 x 380 x 900

450 x 450 x 760

Formomat® PL - formaldehyde sterilizer (NTDF)

Hyper LTS 8 - $\mathrm{H_{2}O_{2}}$ plasma sterilizer

Software applications for RUMEDs					
Product					
RUMED360®					
CyclePrint Direct	Process documentation system with an external log printer.				
Cycles	Process documentation system with easy reviewing of the cycle data and secure archiving of the digital reports.				
CycleView	Process information in graph form and plain text.				
Dashboard	Real-time visualization of the status of the connected machines in a simple and clear manner.				
ServiceDesk	Overview of the status of your machines at the click of a button.				
Documents	Sort, catalog and archive all machine and/or RUMED related documents so they can be quickly and easily displayed when needed.				
ISA	Extends the ServiceDesk with the ability to automatically send out machine status information in an e-mail.				

^{***} The chamber dimensions are not standardized according to StU / chamber dimensions are per ASME

Resources management

Certified environmental management system

The MMM sustainability concept protects the environment even in everyday business operations. All MMM devices have been optimized for low energy and water consumption and can be equipped with energy recovery systems.

MMM has a certified environmental management system as per DIN EN ISO 14001 that not only covers our products but also encompasses the operative processes.



Intelligent water management

Low water consumption, regulated by the controller – adapted to the goods being treated and the process phase. The water consumption is adjusted for each individual process phase thereby reducing the overall water and detergent consumption.



Reduced deionized (DI) water consumption

With the optional DI water recovery tank, the DI water from the disinfection phase is stored and used for the intermediate rinsing in the next program sequence. This saves up to 20% deionized water, time and energy. Thanks to the APPcycles® technology in our steam sterilizers, the media consumption can be reduced up to 50%. By connecting the machine to an on-site cooling system, a 95% reduction in the cooling water can be achieved.



Short cycle times

Thanks to the low water volume, the rinse bath heats up rapidly and the chamber can be filled and drained more quickly. At the same time, the consumption of cleaning chemicals is reduced. The DI water pre-heating tank reduces the cycles times considerably. The reprocessing time in steam sterilizers can be significantly reduced using APPcycles®.



Heat is energy

The combination of fresh air and recirculating air drying ensures maximum heat usage in the chamber. This highly efficient arrangement promotes heat storage and heat recovery, which results in shorter cycle times.



Environment and energy

MMM as a manufacturer is certified according to DIN EN ISO 14001 and DIN EN ISO 50001, thus meeting international standards for environmenta and energy management systems.



The reliable partner at your side

MMM Customer Service

With us, you receive more than just repairs. From commissioning and validation right through to maintenance and ongoing support – you can rely on us!

We offer a comprehensive portfolio of services in the proven MMM quality, and solutions perfectly tailored to your needs.



Inspection



Validation, requalification and testing



Spare parts



Servicing



Extensions and updates/upgrades



Training



Repair



Energy optimization



Software

MMM. Our global branches.



MMM has been operating worldwide as one of the leading system providers in service of health since 1954. With a complete range of products and services relating to all aspects of cleaning, disinfection and sterilization systems for the fields of Healthcare and Life Sciences, MMM has positioned itself as a major driver of quality and innovation in both the German and international markets. Our products are

our customers all over the world. The high vertical integration of the manufacturing in our plants ensures that we fulfill the most stringent demands for quality in the medical technology industry. More than 1200 employees apply their expertise and dedication to the mission of the MMM Group:

MMM. Protecting human health.





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