

# KUKA



Mobile robotics\_KMP 1500



## KMP 1500

Autonomy, intelligence, precision

Shorter response times and greater flexibility going beyond full automation: these are the new requirements of automotive producers that are changing at an ever faster pace. The industrial manufacturing of the future will require new, modular, versatile and, above all, mobile manufacturing concepts. KUKA has risen to this challenge: with the KUKA mobile platform (KMP) 1500, the new omnidirectional mobile platform from KUKA controlled with the latest KUKA Sunrise controller. This opens up entirely new, scalable and reconfigurable production concepts, with the KMP 1500 you can ensure a cost-effective use of the automation resources, by using it only where it is needed for warehouse management or between the manufacturing processes.



**Autonomous navigation.** The KUKA Navigation Solution opens up a wide range of potential applications for KMP 1500 platform. The system enables the fully autonomous motion of the mobile platforms – with absolutely no risk of collision and without the need for artificial markings in their environment. The KUKA Navigation Solution software acquires the data of the safety laser scanners and wheel sensors and uses them to create a corresponding map of the surroundings by means of the SLAM method (SLAM = Simultaneous Localization and Mapping). The platform can then localize itself using this map. The system responds to changes in the environment – which occur frequently in a flexible logistics system. Furthermore, the autonomous path planning has been expanded. Use of virtual paths makes it possible to move the platform exclusively along defined routes. It nonetheless retains its maximum flexibility at all times.



**Move the car body through entire production process.** The mobile platform offers a payload capacity of 1500 kg, makes it possible to transport the car body through the entire manufacturing process. The KMP 1500 meets all required safety standards for autonomous guided vehicles, offering high load capacity with maximum safety.



**Warehouse management**  
Thanks to its innovative navigation system, the KUKA Mobile Platform 1500 operates autonomously and is able, for example, to set down machined Workpieces or fetch required components.

Enabled by  **KUKA Sunrise.OS**

## Factory automation – the next level.

Taking production flexibility to a new dimension. The factory of the future will not have any predefined routes or rigid processes. Intelligent autonomous vehicles will equip robots and machines “on the fly” with other tools, enabling production to be carried out with a previously inconceivable degree of flexibility. Welcome to the world of the KMP 1500.

\_Unrestricted maneuverability

\_Industrie 4.0 ready



\_Autonomous navigation



KUKA mobile platform

+



Sunrise OS

+



KUKA.NavigationSolution

= **your solution**

## KMP 1500

Autonomy, intelligence, precision

Shorter response times and greater flexibility going beyond full automation: these are the new requirements of automotive producers that are changing at an ever faster pace. The industrial manufacturing of the future will require new, modular, versatile and, above all, mobile manufacturing concepts. KUKA has risen to this challenge: with the KUKA mobile platform (KMP) 1500, the new omnidirectional mobile platform from KUKA controlled with the latest KUKA Sunrise controller. This opens up entirely new, scalable and reconfigurable production concepts, with the KMP 1500 you can ensure a cost-effective use of the automation resources, by using it only where it is needed for warehouse management or between the manufacturing processes.

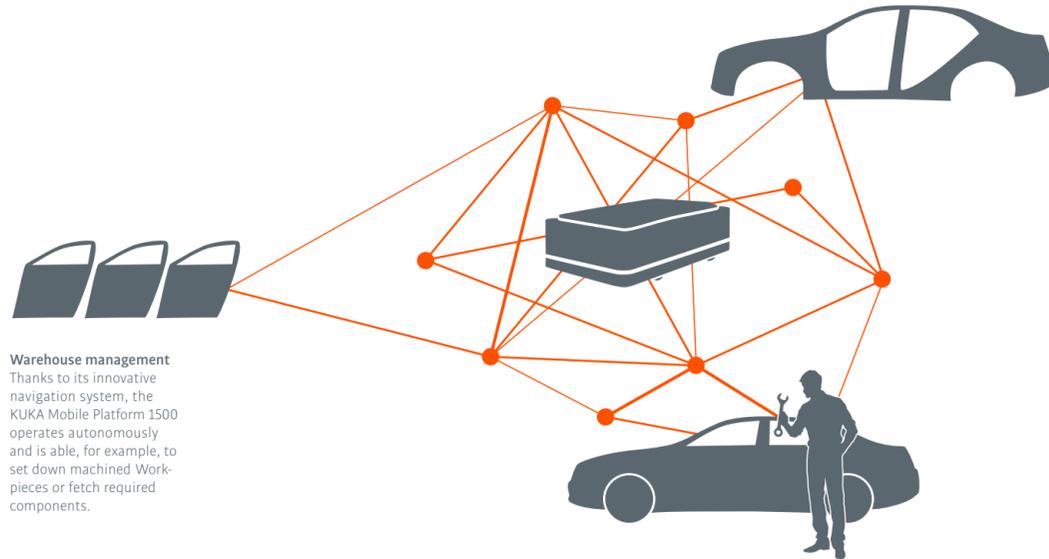


**Autonomous navigation.** The KUKA Navigation Solution opens up a wide range of potential applications for KMP 1500 platform. The system enables the fully autonomous motion of the mobile platforms – with absolutely no risk of collision and without the need for artificial markings in their environment. The KUKA Navigation Solution software acquires the data of the safety laser scanners and wheel sensors and uses them to create a corresponding map of the surroundings by means of the SLAM method (SLAM = Simultaneous Localization and Mapping). The platform can then localize itself using this map. The system responds to changes in the environment – which occur frequently in a flexible logistics system. Furthermore, the autonomous path planning has been expanded. Use of virtual paths makes it possible to move the platform exclusively along defined routes. It nonetheless retains its maximum flexibility at all times.



**Move the car body through entire production process.** The mobile platform offers a payload capacity of 1500 kg, makes it possible to transport the car body through the entire manufacturing process. The KMP 1500 meets all required safety standards for autonomous guided vehicles, offering high load capacity with maximum safety.

**Warehouse management**  
Thanks to its innovative navigation system, the KUKA Mobile Platform 1500 operates autonomously and is able, for example, to set down machined Workpieces or fetch required components.



**Human-robot collaboration (HRC) / Safety**  
The KMP 1500 supports the operator during assembly tasks by providing him with an ergonomic work situation at the desired height. Thanks to a safety laser scanner integrated into the platform, different degrees of automation can be implemented.



Enabled by  KUKA Sunrise.OS



### Freely scalable, modular system.

The unbeatable combination of service-proven KUKA mobile platform technology, and industrial state of the art controller KUKA Sunrise offers a mobile solution for all conceivable scenarios. The KUKA Sunrise controller offers all needed interfaces for standard robots, and thus the platform can be extended easily with any special equipment or sensors, for example conveyor.



### Maximum flexibility and unrestricted maneuverability.

Where manufacturing processes are subjected to continual changes, one thing counts more than anything else: flexibility. The KMP 1500 stands for unlimited adaptability. The omnidirectional wheel concept enables unrestricted motion in any direction from a standing start. Furthermore, the immense working range opens up a wide range of options for entirely new production concepts and increased cost-effectiveness in logistics management.

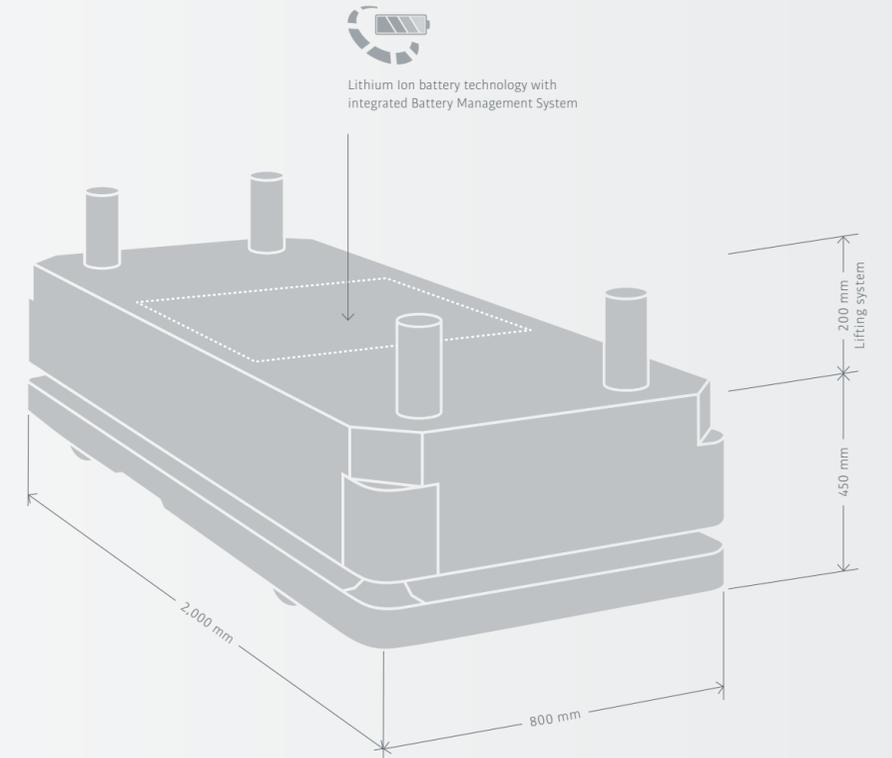


### Utmost precision and simple operator control.

With the omnidirectional wheel technology, the KMP 1500 moves safely to the desired position, even in confined spaces, with a positioning accuracy of up to ±1 mm – irrespective of driven distance to the workplace. For the first time, the KMP 1500 makes it possible to utilize the efficiency and reliability of KUKA robotic technology for large-area automation solutions in the logistics sector.

## Mobile robotics from KUKA

Technical data



Lithium Ion battery technology with integrated Battery Management System

### KUKA Mobile Platform 1500

Vehicle height	450 mm
Length with scanners	2,000 mm
Width with scanners	800 mm
Weight, Approx.	750 kg
Max. Payload	1,500 kg
Max. Velocity diagonally and sideways	2 km/h
Max. Velocity straight ahead	3.6 km/h
Wheel diameter	375 mm
Max. Spindle height	200 mm
Max. Spindle Velocity	50 mm/s
Battery capacity	160 Ah / 48 V (Minimum 8 hours)
Charging time	2 hours

### KMP norms

2006/42/EC	Machinery Directive
2004/108/EC	EMC Directive
EN 61000-6-2	Electromagnetic compatibility (EMC)
EN 61000-6-4 + A1	Electromagnetic compatibility (EMC)
EN 60204-1 + A1	Safety of machinery
DIN EN 1175-1	Safety of industrial trucks
DIN EN 1525	Safety of industrial trucks
DIN EN 1526	Safety of industrial trucks
EN ISO 10218-1	Industrial robots
EN ISO 12100	Safety of machinery
EN ISO 13849-1	Safety of machinery
EN ISO 13849-2	Safety of machinery
EN ISO 13850	Safety of machinery
EN ISO 13855	Safety of machinery

### KUKA Mobile Platform additional options

Electrical lifting elements
Floor charging contact plate
CupCone centering
RFID load detection

## Industrie 4.0

### Prepared for transformation of the worlds of production

Smart Production, Internet of Things or Industrie 4.0. Even if the names and terms used vary from one country to another, they all share the same goal: the creation of elementary competitive advantages – at both company level and in global competition.

Work on the factory of the future is thus in full swing worldwide. This involves intelligent, networked industrial production and logistics processes on the basis of cyber-physical production systems (CPPS). Or, to put it simply: factories that, by means of advanced networking, respond intelligently to changing tasks and continuously reconfigure themselves. The factory of tomorrow should be able to organize and continuously optimize its production processes, thereby counteracting the consequences of another development: demographic change. New solutions are called for because of falling birth rates and increasingly aged populations in modern industrial societies. Without the “smart factory”, it will be simply impossible to achieve a productivity increase on this scale at the same time as effectively husbanding our existing natural resources.

In order to make new working environments both highly productive and ergonomically beneficial for the labor force, KUKA is developing central key technologies: collaborative robots, mobile assistance systems, autonomously controlled vehicles and intelligently networked automation solutions that support humans in the work setting, easing the workload in a variety of ways.

In collaboration with experts from diverse sectors, KUKA is now already implementing highly flexible, digitized manufacturing processes that will open up new opportunities in a competitive environment and lastingly change the way we work and produce.



[www.contact.kuka-robotics.com](http://www.contact.kuka-robotics.com)



[www.facebook.com/KUKA.Robotics](https://www.facebook.com/KUKA.Robotics)



[www.youtube.com/kukarobotgroup](https://www.youtube.com/kukarobotgroup)



Twitter: @kuka\_roboticsEN

Details provided about the properties and usability of the products are purely for information purposes and do not constitute a guarantee of these characteristics. The extent of goods delivered is determined by the subject matter of the specific contract. No liability accepted for errors or omissions. Subject to technical alterations.

© 2016 KUKA Roboter GmbH