

KUKA



Mobile platforms and mobile robots
Open up new dimensions of mobility.



Get your production moving.



Mobile platforms from KUKA open up new dimensions of mobility in the age of Industrie 4.0. Whether for the aerospace or automotive industry, or for many other sectors: it has never been easier to integrate autonomous robots and mobile platforms quickly and reliably into cells and systems.

All mobile platforms ensure maximum freedom of movement. The Mecanum wheel system enables high-precision transport – even with the heaviest loads.

Autonomously navigating systems are used for fully automatic operation. Our portfolio of omnidirectional mobile robot platforms provides the foundation for the flexible production facilities of the future.

The factory of the future demands mobility and flexibility. Static production lines make way for the next generation of robots: intelligent, mobile robotic units are taking their place. Mobile robots navigate autonomously, act in swarms and offer total flexibility for industrial manufacturing. This is especially important for internal logistics. KUKA offers a vast mobility portfolio, from manually movable to autonomously navigating solutions.

Our robots work hand in hand with humans and align to the workpiece with millimeter precision. In addition, the fully autonomous variants work without any induction loops, floor markings or magnets. Our range of mobile robots is heralding the next era of cyber-physical production.

KUKA.NavigationSolution. The reliable interface for your autonomous logistics.

Mobile robots receive their commands via WLAN. They perform their driving and handling tasks fully autonomously. They use algorithms to position themselves, plan their route and take on loads.

All mobile robotic systems from KUKA can be equipped with KUKA.NavigationSolution. This makes them flexible and mobile. The navigation solution also includes an ideal fleet management system.

It meets the latest demands of mobile robotics with the appropriate interfaces – fully in keeping with Industrie 4.0.

Our smart navigation solution consists of an industrial PC that is installed in the automated guided vehicle system and the actual navigation software – a software package that manages all vehicles and coordinates planning.

Autonomous control. KUKA.NavigationSolution enables autonomous navigation of mobile platforms – with no risk of collision and without the need for artificial markings.

The software acquires all the data from the safety laser scanners and wheel sensors and uses them to create a corresponding map of the surroundings by means of the SLAM method (Simultaneous Localization and Mapping).

The system responds to changes in the environment – which occur frequently in a flexible logistics system. The use of virtual tracks makes it possible to move the platform exclusively along defined routes.

Flexible software integration. KUKA offers an Eclipse-based development environment that can be used to program applications in Java. The modular Java API with suitable interfaces for the requirements of mobile robotics allows the integration of third-party software. The existing platform fleets can be simply updated, and other platforms can be added to or removed from the existing system.

Exact positioning. KUKA.NavigationSolution offers the following options for high-precision positioning of the mobile platform in its environment:

- Fine localization for precise determination of the vehicle position relative to the object or in an environment
- Fine positioning for increased pose repeatability
- Relative positioning through CAD-based object recognition and tracking, e.g. for picking up loads

Hardware-independent software. The hardware-independent navigation software of KUKA.NavigationSolution can be used for different platform kinematic systems.

It can handle any motion principles, including holonomic vehicles with Mecanum wheels, such as the KUKA omniMove.

The machine parameters are configured via a standardized interface.

Freely scalable, modular setup Additional features, such as object recognition and tracking and relative positioning, enable coordinated planning.



 **KMP 1500.** The solution for a flexible production process.

The KUKA KMP 1500 autonomously controlled platform is our answer to the increasing demand of production departments for shorter response times and greater flexibility in their manufacturing concepts. Predefined routes and rigid processes are a thing of the past in the factory of the future.

The KMP 1500 is an autonomously controlled platform that integrates seamlessly into the production process. The vehicle is also excellently suited to the matrix body shop. The KMP 1500 independently and autonomously handles the transport of the products through all process steps.

This is why KUKA develops intelligent, autonomous vehicles that supply materials to robots and machines with perfect timing. The KMP 1500 makes flexible production possible to an extent that has been unimaginable before.

This production concept from KUKA enables you to optimize your logistics management. The KMP 1500 provides cost-effective support for your warehouse organization or between manufacturing processes – and is used only as needed.



Unrestricted and precise maneuvering Thanks to KUKA omniMove drive technology, the KMP 1500 can move in any direction from a standing position. The sophisticated wheel technology allows for precise positioning with an accuracy of ±5 millimeters even in tight spaces. This results in space-saving and highly precise automation solutions for logistics.

Autonomous, flexible warehouse management The KMP 1500 autonomously fetches the required components or returns them to the warehouse after processing. Thanks to the KUKA.NavigationSolution, it can move about freely and without conventional guidance or navigation elements. This makes integration into modified environments much easier and increases efficiency in logistics management.

Strong, safe and reliable. With a payload capacity of up to 1,500 kilograms, the KMP 1500 safely moves your products through the entire manufacturing process. It meets all necessary safety standards and is also extremely flexible. Integrated safety laser scanners enable autonomous navigation through your production shop.

KMP 1500

Dimensions (L×W×H)	2,000×800×470 mm (with scanners)
Weight	711 kg / 935 kg (with lifting system and battery system extender)
Rated payload	1,500 kg
Velocity straight ahead	max. 1 m/s
Velocity diagonally and sideways	max. 0.56 m/s
Wheel diameter	310 mm
Battery capacity	52 Ah / 96 V (at least 4 hours)
Charging time	1 hour

Lifting system (optional)

Lift table height	max. 200 mm
Lifting speed	max. 50 mm/s
Weight	+144 kg

Battery system extender (optional)

Battery capacity	104 Ah / 96 V (at least 8 hours)
Charging time	2 hours
Weight	+80 kg

Supplied accessories

Radio control unit	
Floor charging contact plate	
Brake release device	



KUKA omniMove.

We move big things – with millimeter precision.

Simply move underneath and lift. The KUKA omniMove mobile heavy-duty platform can move your XXL loads with ease. The heavy-duty AGV can be controlled manually, but can also move autonomously. Despite its enormous size and payload capacity, it navigates safely, moving virtually independently. You can also optionally expand it with a self-contained energy supply.

Specially developed wheels allow the mobile heavy-duty platform to move in any direction – even from a standing start. The sophisticated navigation system KUKA.NavigationSolution ensures autonomous maneuvering without risk of collision and without requiring artificial floor markings.

The KUKA omniMove can be freely scaled in size, width and length within a modular system – just the way you need it.

Mecanum wheel for maximum mobility: the specially developed KUKA omniMove drive technology based on the Mecanum wheel ensures that the KUKA omniMove can maneuver omnidirectionally. The wheels with individual, barrel-shaped rollers can move independently of each other. This allows the KUKA omniMove to perform translational and rotational motions in the tightest of spaces from a standing start. It can thus move swiftly and compactly in all directions.



Powerful. Depending on the vehicle variant, the KUKA omniMove can safely and conveniently move even the heaviest components in XXL format. It has a payload capacity of up to 90 tonnes and – in the maximum version – reaches a length up to 30 meters.

Precise. The KUKA omniMove positions even enormous payloads to within ±3 millimeters without contact.

Modular. We design your ideal solution. You can choose from ten different vehicle variants, and we will then personalize your selection with individual option packages and modules – fully in accordance with your requirements and wishes.

Wheel sizes E375	3,000	6,000
Payload	3,000 kg	6,000 kg
Height	420 mm	420 mm
Length (with laser scanner)	2,750 mm	3,650 mm
Width (with laser scanner)	1,600 mm	1,600 mm
Number of wheels	4	8
Weight	2,000 kg	4,000 kg
Travel speed	3.0 km/h	3.0 km/h

Wheel sizes E575	7,000	15,000	25,000
Payload	7,000 kg	15,000 kg	25,000 kg
Height	650 mm	650 mm	650 mm
Length (with laser scanner)	3,200 mm	4,755 mm	5,560 mm
Width (with laser scanner)	2,120 mm	2,120 mm	2,800 mm
Number of wheels	4	8	12
Weight	4,000 kg	6,000 kg	9,000 kg
Travel speed	3.0 km/h	3.0 km/h	3.0 km/h

Operating condition	
Ambient temperature	+5 to 40 °C

Power supply connection	
Charger, type 1	400 V / 50 Hz / 32 A CEE
Charger, type 2	480 V / 60 Hz / 30 A Hubbell HBL2731; UL



KMR iiwa.

Always on the spot – safely.

Optimizes your production significantly.

The KMR iiwa is a combination of the sensitive LBR iiwa lightweight robot and a mobile, flexible platform. As the name and the individual components already suggest, the KMR iiwa stands out with its high degree of mobility and flexibility.

Manufacturing processes are changing constantly. This is why mobile robot systems must be very adaptable. Maximum mobility and autonomous working methods optimize your production significantly.



Combinable. Design your individual turnkey system solution. The modular KMR iiwa system offers numerous combinations of robot technology, mobile platforms and industrial components.

Sensitive. Seven special joint torque sensors on each axis of the LBR iiwa lightweight robot make it highly sensitive to its environment. It navigates safely and without protective fencing – external contact will cause it to stop immediately.

Autonomous. Thanks to the laser scanners, the mobile platform too can navigate fully autonomously. It monitors its environment. And it reacts immediately if a person or object is in the way.

Agile. Specially developed Mecanum wheels allow the mobile platform to move omnidirectionally and execute 360° rotations. A wheel consists of several rollers that are each aligned at an angle of 45° relative to the axle. This top-notch maneuverability shortens throughput times and reduces idle times in the manufacturing process.

Precise. The KMR iiwa achieves a positioning accuracy of up to ±0.1 millimeters, even in the tightest spaces.

Intelligent. With KUKA.Navigation-Solution, the KMR iiwa can reliably move around obstacles and look for a new route.

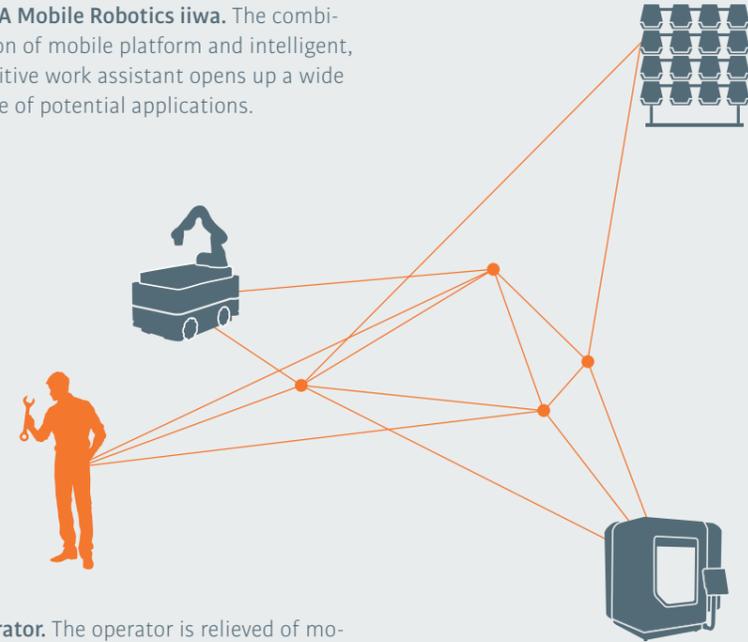
Independent. The vehicle and robot are supplied directly with power from Li-ion batteries.

User-friendly. KUKA Sunrise Cabinet and KUKA Sunrise.OS for vehicles and robots simplify the operation and use of the KMR iiwa.



Intelligent system.

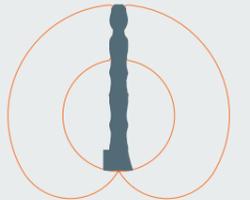
KUKA Mobile Robotics iiwa. The combination of mobile platform and intelligent, sensitive work assistant opens up a wide range of potential applications.



Operator. The operator is relieved of monotonous, non-ergonomic tasks and can concentrate on important processing steps.

High-bay racking. Thanks to its innovative navigation system, the KMR iiwa operates autonomously and is able, for example, to set down machined workpieces or independently fetch required components.

Machine tool. The KMR iiwa takes over the tending of machine tools and relieves the human operator of strenuous and tiring tasks.



LBR iiwa	LBR iiwa 14 R820	LBR iiwa 7 R800
Rated payload	14 kg	7 kg
Number of axes	7	7
Reach	820 mm	800 mm
Wrist variant	In-line wrist	In-line wrist
Mounting flange on axis 7	DIN ISO 9409-1-A50	DIN ISO 9409-1-A50
Pose repeatability	±0.15 mm	±0.1 mm
Axis-specific torque accuracy	±2 %	±2 %
Weight	29.9 kg	23.9 kg
Protection rating	IP 54	IP 54
Variants	CR	CR
Installation position	Floor, ceiling, wall	Floor, ceiling, wall

Mobile platforms	
Dimensions (H x W x B)	700 x 1,080 x 630 mm (with scanners and protected areas)
Weight	390 mm
Maximum payload	170 kg / 200 kg without LBR iiwa
Velocity in longitudinal direction	max. 3.6 km/h
Velocity in lateral direction	max. 2.0 km/h
Wheel diameter	250 mm
Cleanroom class	ISO 5



 kuka.com/contacts

 facebook.com/kukaglobal

 youtube.com/kukarobotgroup

 twitter.com/kukaglobal

 linkedin.com/company/kukaglobal

Angaben zur Beschaffenheit und Verwendbarkeit der Produkte stellen keine Zusicherung von Eigenschaften dar, sondern dienen lediglich Informationszwecken. Maßgeblich für den Umfang unserer Lieferungen ist der jeweilige Vertragsgegenstand. Technische Daten und Abbildungen sind unverbindlich in Hinblick auf Lieferungen. Änderungen vorbehalten. © 2022 KUKA