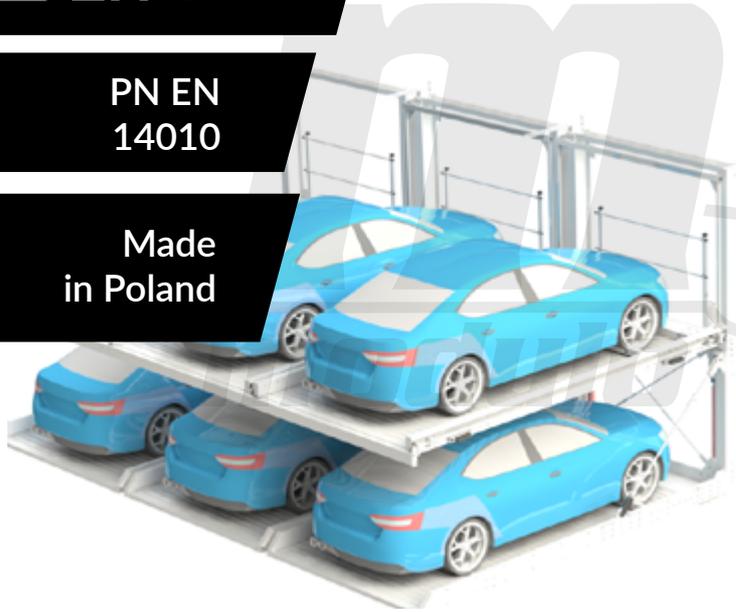


PN EN  
14010

Made  
in Poland



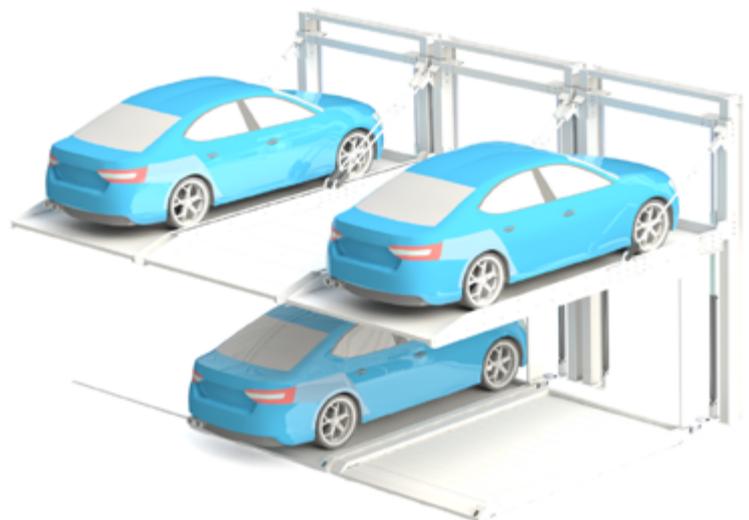
# LS10/LS11

## Independent parking system

Modulo LS10/LS11 is an independent parking system offering two levels of vehicles parking - depending on the configuration: level -1 and 0 or level 0 and +1. Thanks to the optional installation of a sliding gate system and partial automation, there is no need to get out of the vehicle to call out the platform assigned to the user. Thanks to the speed of operation, ease of control and the ability to adjust any number of parking spaces to the customer's needs, it is the most universal of our products. It will be perfect for a residential investment as well as a multi-storey car park in a company or public utility building.

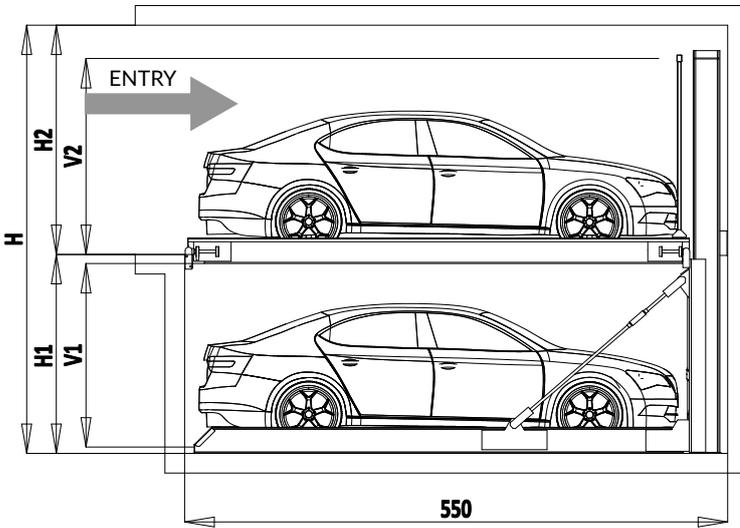


The LS10/11 system multiplies parking spaces independently. Each parking space has its own unique key that protects it against unauthorized use. Optionally, in the case of the version with sliding gates, each parking space has its own individual remote control. The device can operate automatically - without having to get out of the vehicle to call out the place assigned to the user. The system has an emergency switch used to stop the device in hazardous situations.



# Technical data and installation requirements

-1/0 configuration

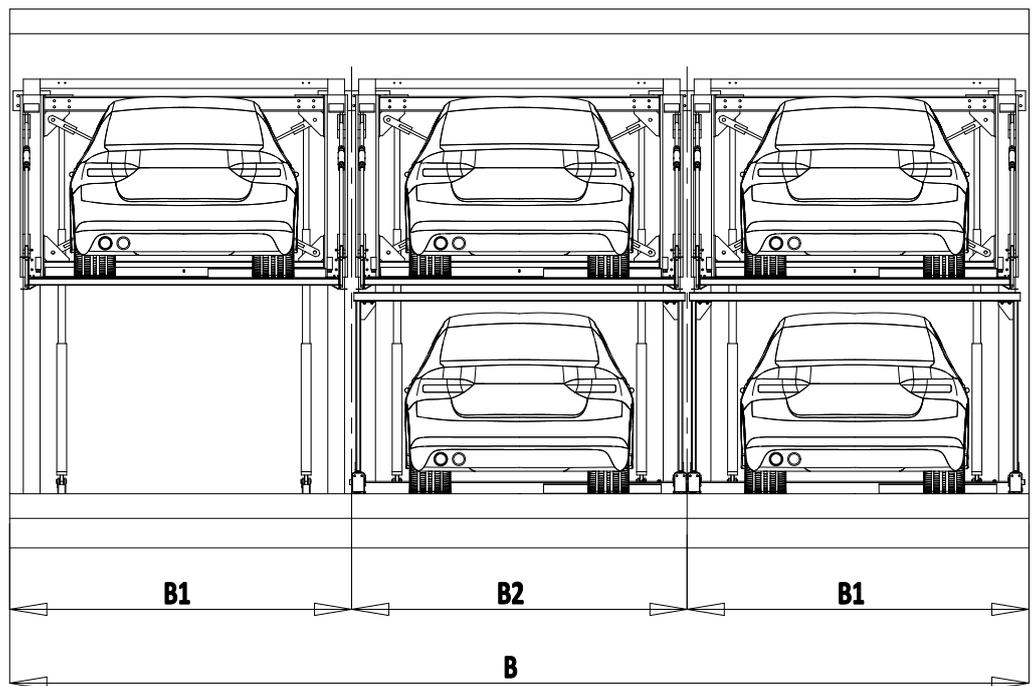


Pit depth (H1)	Garage height (H2)	Total height (H)	Vehicle height LEVEL -1 (V1)*	Vehicle height LEVEL 0 (V2)*
175	170	354	150	150
185	180	365	160	160
195	190	385	170	170
205	200	405	180	180
215	210	425	190	190
225	220	445	200	200
235	230	465	210	210

\* The heights of the vehicles can also be suited individually after consultation with MODULO

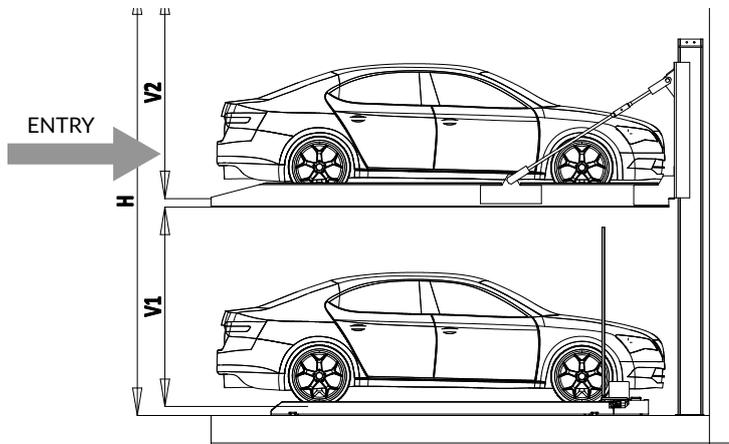
**IMPORTANT:**

The device is intended for parking passenger cars of the following types: limousine, estate, van, SUV - depending on the size and weight of the car.



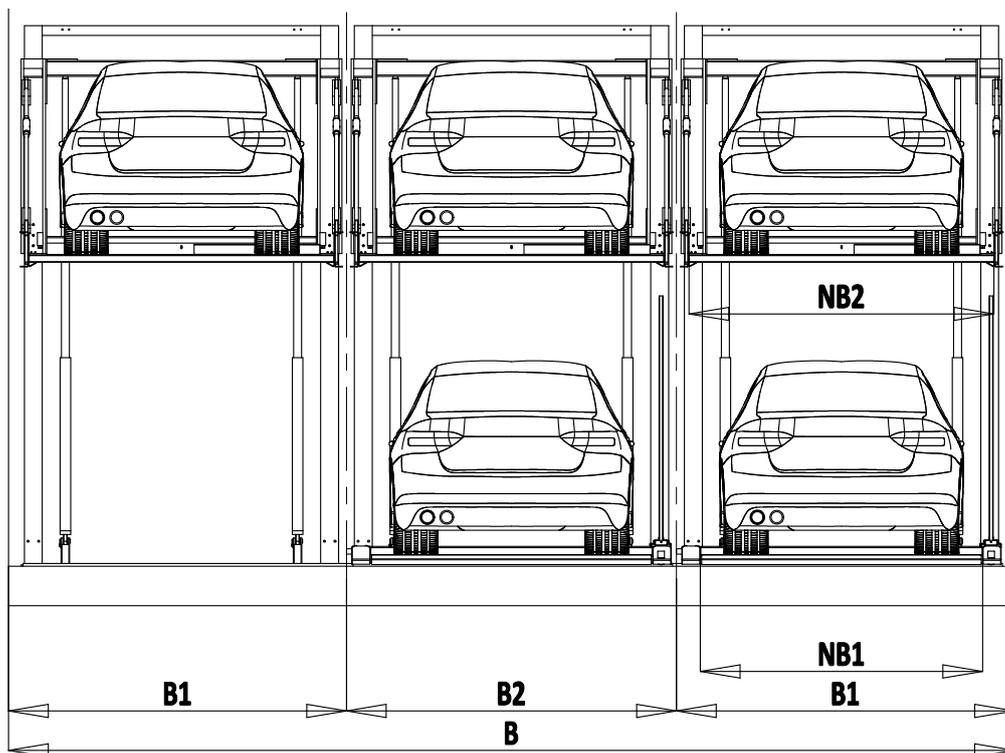
Width of the platforms	Width of the B1 external segments	Width of the B2 internal segments	Total width of system B for 'n' segments								
			2	3	4	5	6	7	8	9	10
230	260	255	520	775	1030	1285	1540	1795	2050	2305	2560
240	270	265	540	805	1070	1335	1600	1865	2130	2395	2660
250	280	275	560	835	1110	1385	1660	1935	2210	2485	2760
260	290	285	580	865	1150	1435	1720	2005	2290	2575	2860
270	300	295	600	895	1190	1485	1780	2075	3270	2665	2960

0/+1 configuration of the platform with ramp



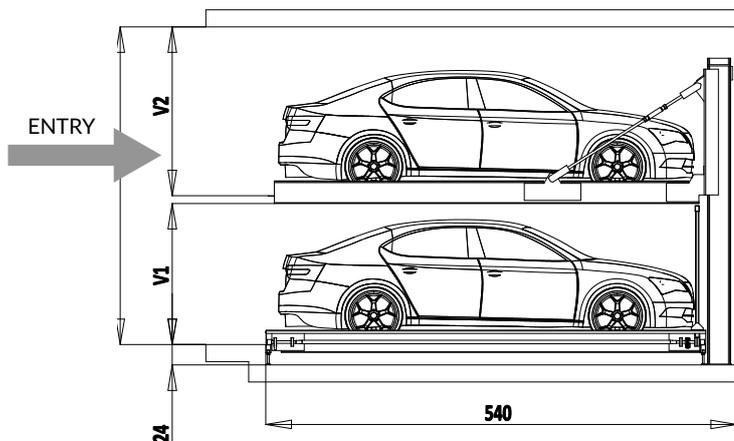
Garage height (H)*	Vehicle height LEVEL 0 V1	Vehicle height LEVEL +1 V2
330	150	150*
340	160	150*
350	170	150*
360	180	150*
370	190	150*
380	200	150*
390	210	150*

\* The size of the vehicle at level +1 can be increased while increasing the dimension H by the same amount



Platform working width LEVEL 0 NB1	Platform working width LEVEL +1 NB2	Width of the B1 external segments	Width of the B2 internal segments	Total width of system B for 'n' segments									
				2	3	4	5	6	7	8	9	10	
213	230	255	250	510	760	1010	1260	1510	1760	2010	2260	2510	
223	240	265	260	530	790	1050	1310	1570	1830	2090	2350	2610	
233	250	275	270	550	820	1090	1360	1630	1900	2170	2440	2710	
243	260	285	280	570	850	1130	1410	1690	1970	2250	2530	2810	
253	270	295	290	590	880	1170	1460	1750	2040	2330	2620	2910	

Configuration 0/+1 of the platform without the ramp  
- completely flat

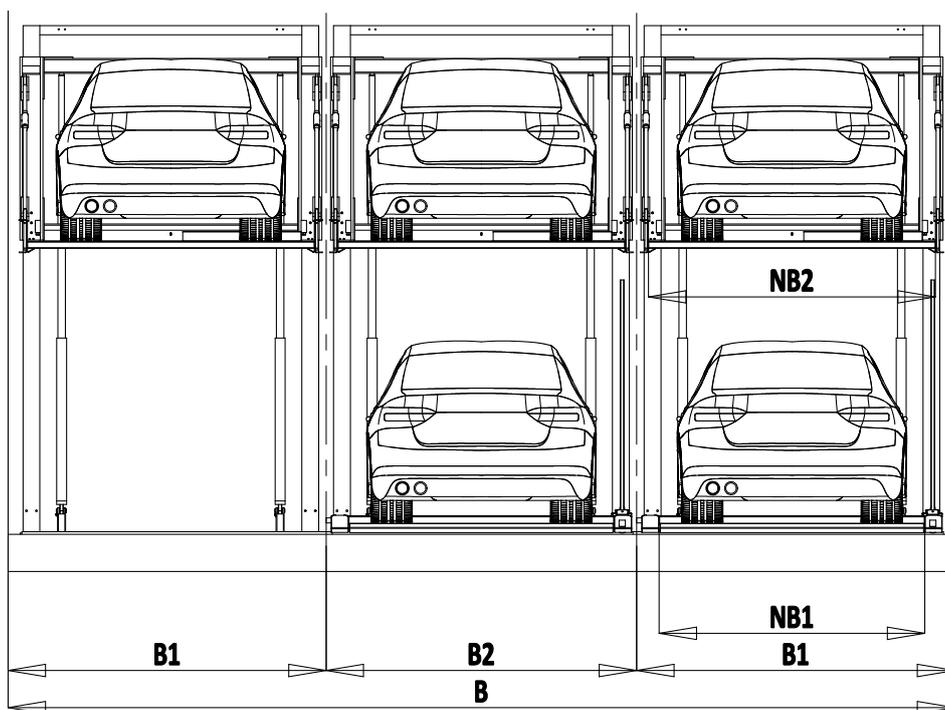


Garage height (H)*	Vehicle height LEVEL 0 V1	Vehicle height LEVEL +1 V2
320	150	150*
330	160	150*
340	170	150*
350	180	150*
360	190	150*
370	200	150*
380	210	150*

\* The size of the vehicle at level +1 can be increased while increasing the dimension H by the same amount

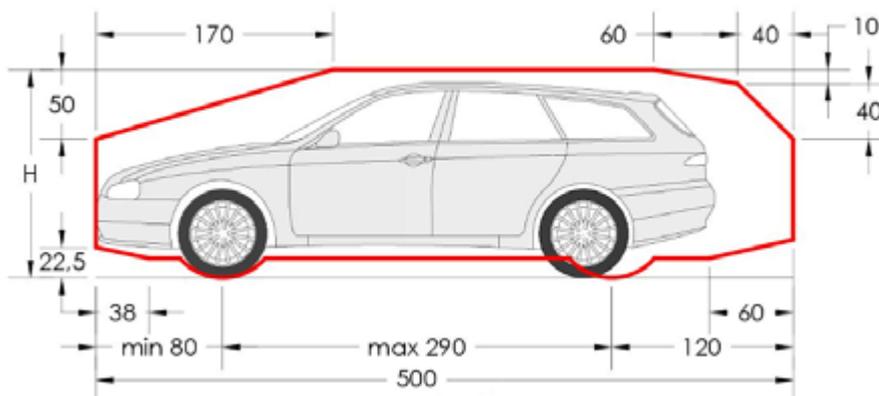
**IMPORTANT:**

The device is intended for parking passenger cars of the following types: limousine, estate, van, SUV - depending on the size and weight of the car.



Platform working width	Width of the B1 external segments	Width of the B2 internal segments	Total width of system B for 'n' segments								
			2	3	4	5	6	7	8	9	10
230	260	250	520	770	1020	1270	1520	1770	2020	2270	2520
240	270	260	540	800	1060	1320	1580	1840	2100	2360	2620
250	280	270	560	830	1100	1370	1640	1910	2180	2450	2720
260	290	280	580	860	1140	1420	1700	1980	2260	2540	2820
270	300	290	600	890	1180	1470	1760	2050	2340	2630	2920

VEHICLE DATA	
Width	190 cm
Weight	2200 kg/2600 kg*
Load per wheel	550 kg/650 kg*



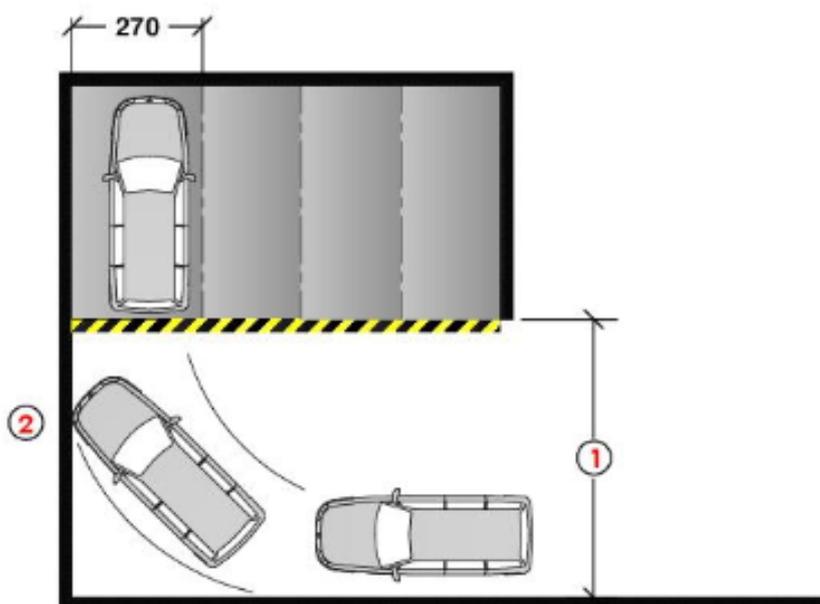
\* Optional

The maximum height of the vehicle parked on the lower platform results directly from the depth of the pit. The maximum height of the vehicle parked on the upper platform depends on the maximum height of the vehicle parked on the lower platform and the height of the roof of the building.

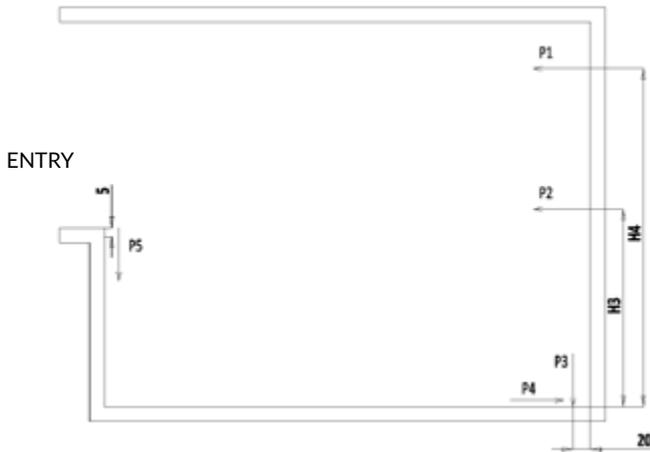


The parking platform with a working width of 230 cm allows you to park a vehicle up to 190 cm wide (with folded mirrors) with a precisely performed maneuver. For regular parking, we recommend a platform with a minimum working width of 250 cm. Platform with a working width of 270 cm will guarantee high comfort of parking and getting in and out of the vehicle. For wider vehicles, proportionately wider platforms should be used.

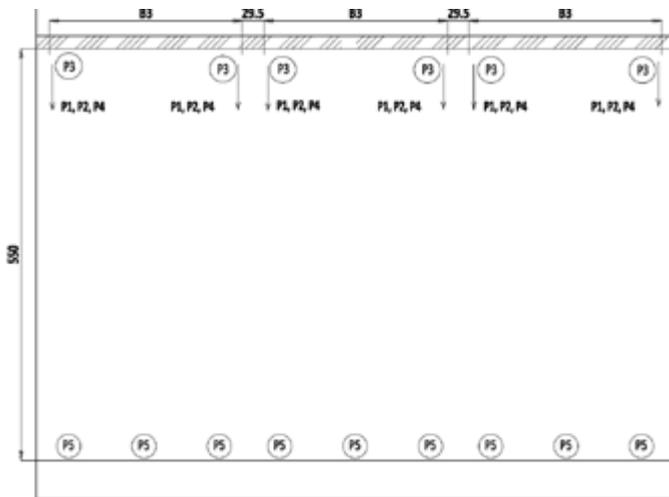
(1) The width of the access road should not be less than required by local regulations. Increasing the width of the access road has a great impact on the comfort of parking.



## Container load



Height of force (H3)	Height of force (H4)	Total height (H)
175	295	345
185	315	365
195	335	385
205	355	405
215	375	425
225	395	445
235	415	465



Platforms width	Width of force B3
230	225
240	235
250	245
260	255
270	265

The device is attached to the concrete floor through the base of the columns (column base area 520 cm<sup>2</sup>) and to the walls with the use of adhesive anchors (opening depth up to 18 cm). The floor and walls should bear the loads according to the above diagram and be made of concrete of at least C20/25 class due to the embedment of the anchors. The minimum recommended floor and wall thickness is 18 cm. The Ordering Party is obliged to make the device container with a drainage system so that it does not collide with the construction elements included in the device specification. The surface of the walls should be flat. The Ordering Party must also design and prepare the installation position for the control panel and the quick operating instructions (MODULO scope of delivery).

Vehicles weight	Load, kN				
	P1	P2	P3	P4	P5
2200 kg	49.5	49.5	35.2	2	13.2
2600 kg	55	55	40	2	15

## Technical Data

The system was developed in accordance with the PN-EN 14010 standard and the Machinery Directive 2006/42/EC and is CE certified.

### Minimum dimensions and tolerances:

All dimensions given in the sheet must have a tolerance of +3cm/-0cm, except where it is clearly stated otherwise (e.g. the depth of the base of the front columns in relation to the access road). Do not use curves/slants in at the point where the walls and the floor are joined. If necessary, a larger should be used.

### Sound

MODULO PARKING devices are included in the scope of domestic devices (PN-B-02151-2:2018-01 standard, section 4, note 4). Acceptable sound intensity level of device operation audible in residential premises (30dB(A) according to DIN 4109) after meeting the following conditions: the use of a low-noise aggregate, resistance of the building structure to noise transmission  $R'w = 57\text{dB}$ , bund walls min. 300 kg/m<sup>2</sup>, roof above the garage min. 400 kg/m<sup>2</sup>. If the conditions are not met, it will be necessary for the customer to provide additional means of sound absorption and consultation with a MODULO PARKING representative. The conditions do not take into account the sounds generated by users, e.g. entering the platform, engine sound, braking, closing the vehicle door.

### Use

The system is intended for regular, trained users as a standard. The delivery of special systems partly intended for temporary users (e.g. hotels, offices) is possible after consultation with Modulo.

### Hydraulic power system

The system is intended for regular, trained users as a standard. The delivery of special systems partly intended for temporary users (e.g. hotels, offices) is possible after consultation with Modulo.

### Drainage of the pit

During the winter time, several dozen liters of contaminated water must be drained from the surface of the vehicle. Water is drained from the platform sideways through transverse channels in the panels and then through channels along the platform from where it flows to the bottom of the pit. From the bottom of the pit, the water must be drained through longitudinal slopes to the drainage channel. The drainage channel must have a suitable slope (only the bottom inside of the channel) towards the retention tank where the water will be pumped out or to the sewage connection. The edge of the platform access road should be leveled. We recommend the use of covers protecting the bottom of the pit and separators for petroleum-derived substances. No water can accumulate in the pit – efficient drainage must be performed by the customer before starting the installation of the devices.

### Environmental conditions

Working temperature range:  $-15^{\circ}$  to  $+40^{\circ}\text{C}$

Nominal temperature (at which the device efficiency should be measured):  $10^{\circ}\text{C}$

Optionally, it is possible to supply the system with a special oil:

- Modulo ArcticFLUID improving the parameters of devices operating permanently at low temperatures or lower than standard (up to  $-30^{\circ}\text{C}$  after consultation with Modulo),
- Modulo DuraFLUID improving the parameters of devices operating permanently at high temperatures or higher than standard (up to  $50^{\circ}\text{C}$  after consultation with Modulo),
- Modulo GreenFLUID for environments requiring the use of biodegradable oil.

Relative humidity: 50% in  $40^{\circ}\text{C}$

### Lighting system

Adequate lighting system for the parking space and access road must be provided by the customer in accordance with local regulations. In accordance with PN-EN 12464-1 standard, we recommend a minimum of 200 lx in parking spaces and in the area of the control panel.

### Fire safety

All fire protection components (fire extinguishing systems, alarms, etc.) must be provided by the customer in accordance with local regulations.

### Barriers

The system must be equipped with railings where the space between the device and the wall or floor exceeds 20 cm. If the device is directly adjacent to a road located on the side or behind the device, the customer must install barriers in accordance with EN ISO 13857 in these places.

### Servicing

The devices must be regularly serviced in accordance with the provided Service Manual according to the dates specified therein. You should also check and follow local regulations for parking systems in this regard. Modulo and its authorized distributors offer the possibility to conclude a service contract.

### Anti-corrosion protection

In addition to the basic version, higher standards of anti-corrosion protection are offered in accordance with the Corrosion Protection Card or according to individual arrangements.

### Corrosion prevention

The guidelines of the Operation Manual and the Corrosion Protection Card should be observed in the scope of maintenance and repair activities.

### Electromobility

If it is necessary to install electric vehicle charging systems, we recommend consultation.

## Construction of the device

- **Parking system** consists of a minimum of: 3 platforms, 4 columns anchored to the floor and walls, 4 sliders, front rail, rear rail, 4 hydraulic cylinders, bolts, anchors, connectors, hydraulic system, electrical system.
- **Parking system platform** consists of: running profiles, adjustable wheel stop, ramp, side profiles, rear beam, bolts, washers, nuts, etc.
- **Hydraulic system** consists of: hydraulic cylinders, solenoid valves, hydraulic lines, screw connections, high-pressure hoses, assembly elements.
- **Hydraulic power unit** consists of: gear pump, oil tank, three-phase electric motor, coupling, overflow valve, pressure gauge connection, oil filter, solenoid valve, vibration isolation and fasteners.
- **Electric system** consists of: gear motors of horizontally moving platforms, steering systems, hydraulic power unit control system, electric and transmission circuits.

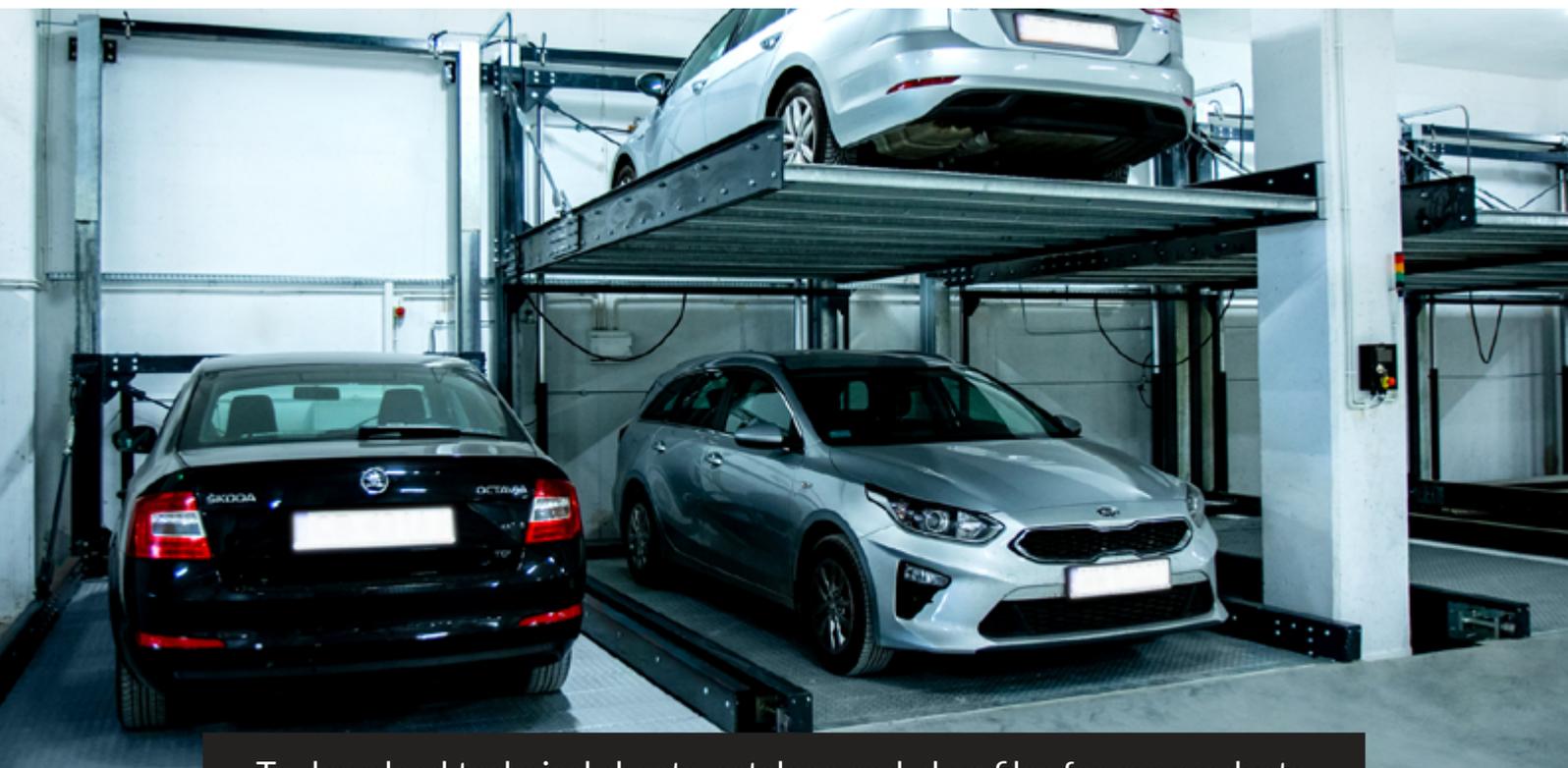
### Additional range of elements to be performed by the Ordering Party

400v, 50 Hz, 3L+N+P three-phase power supply with wire marking, electricity meter, overcurrent protection according to the manufacturer's guidelines (characteristic C), three-phase switch (yellow and red) with the possibility of locking the position with a padlock for each hydraulic power unit, grounding within parking platforms (potential equalization in accordance with PN-EN 20204 standard from the grounding of the foundation to the platform).

### Available documents

Operating and maintenance instructions, quick operating instructions, declaration of conformity, construction foundation plan, service offer / agreement.

In accordance with applicable regulations, parking systems are subject to acceptance by the Office of Technical Inspection. The manufacturer provides the required documentation related to the device. The Ordering Party is obliged to provide the floor construction acceptance protocol.



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