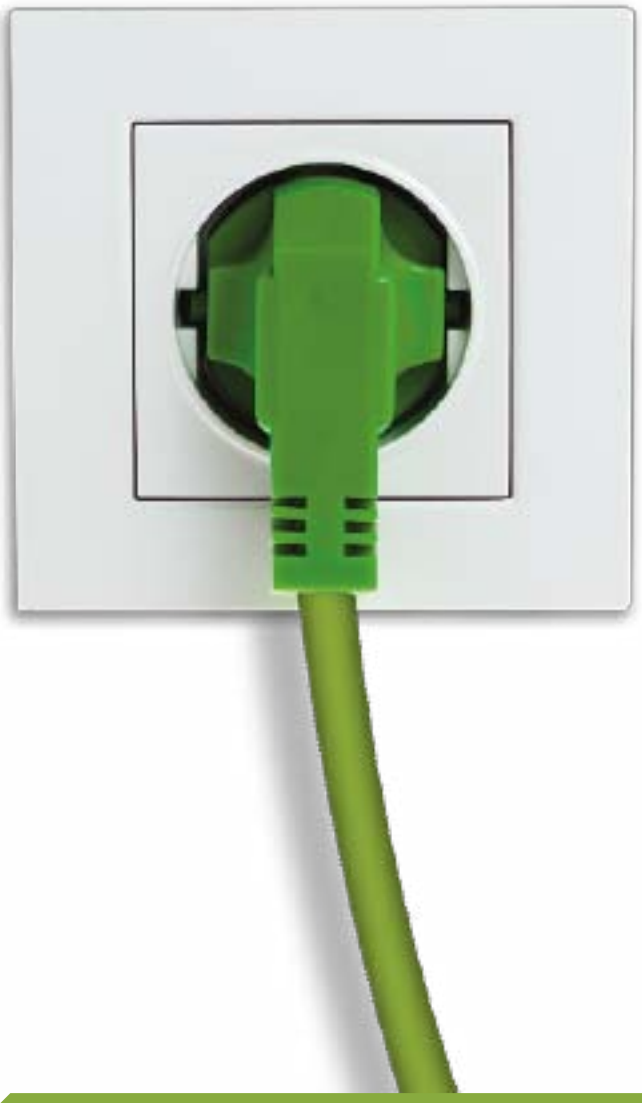
in service

OTIS

GeN2™ Switch

THE ELEVATOR THAT YOU PLUG IN
LIKE A DOMESTIC APPLIANCE



THE WAY TO GREEN™

OTIS Guarantee of quality

In 1853 OTIS created the first safe elevator in history; ever since then we have always been the world leaders in vertical transport. OTIS employs more than 60,000 professionals worldwide, who continually strive not only to meet all your expectations but to exceed them.

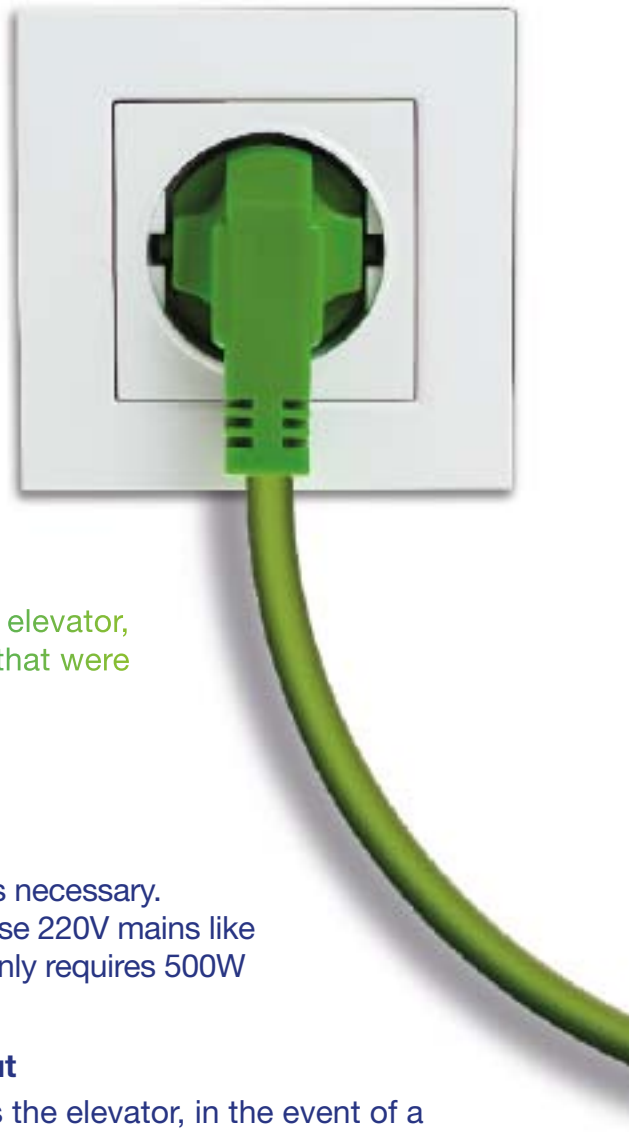
In OTIS we are constantly innovating and developing new technologies, in order to offer you the best products imaginable: elevators that are more comfortable, safer, quieter and more environment friendly.

Respect for the environment

Environment-responsibility is one of the fundamental pillars of OTIS' philosophy. We are determined to make a "green" future a reality and to set a benchmark for the elevator industry by developing clean, low energy consumption technologies.

The OTIS GeN2™ Switch, which generates energy to recharge its own accumulators, is another clear example of our commitment and determination to develop innovative elevators that respect the environment by minimizing energy consumption.

THE WAY TO GREEN™



Plug&Go

The OTIS GeN2™ Switch is a highly efficient, functional elevator, ideally suited for residential buildings, especially those that were built without an elevator.

Easy to install

No specific electrical installation is necessary.
You just plug it into the single phase 220V mains like any other electrical appliance. It only requires 500W of power for operation.

Safety in the event of power cut

A system of accumulators allows the elevator, in the event of a power failure, to continue working as normal for an extended period of time without power supply from the mains.

Generates energy

The elevator generates energy when it travels up empty or travels down loaded, thus achieving significant savings in the electricity bill.

OTIS
THE WAY TO GREEN

A simple, intelligent system

500 W OF CONSUMPTION

The OTIS GeN2™ Switch only needs 500W of power and an intensity of 1.5 amperes for operation.

For its installation, it only requires a 220V single phase power supply as no special installation work is necessary.

OPERATES IN THE EVENT OF A POWER FAILURE

In the event of a power failure, thanks to the energy stored in its accumulators, the OTIS GeN2™ Switch can continue operating as normal, guaranteeing the mobility of all users, which is especially important in the case of disabled or reduced mobility passengers. It can make more than 100 trips without power from the mains.

GENERATES ENERGY

Depending on the load inside the car, the motor acts like a dynamo and generates energy (see drawing at the foot of the page).

This energy is used to recharge the accumulators, reducing the electrical power consumption from the mains.

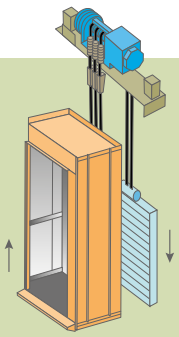
How does it generate energy?

If the loaded car travels in down direction, the force of gravity makes the motor generate energy instead of consuming it, as if it were a dynamo.

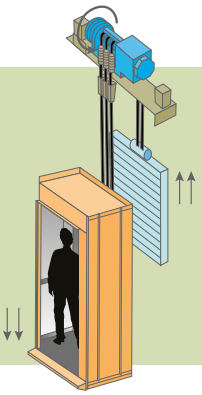
The same occurs when an empty or lightly loaded car travels in up direction. The counterweight descends by the effect of gravity and the motor generates energy.

The regenerative system of the Otis GeN2™ Switch can harness the energy generated by the elevator itself and stores it in the accumulators that operate the elevator.

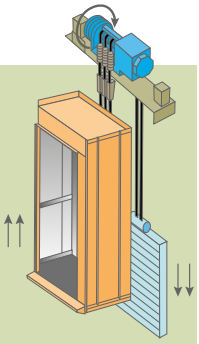
An elevator consists of a car connected to a counterweight by means of a sheave. When the counterweight descends, the car ascends and when the counterweight ascends the car descends.



A heavily or fully loaded car weighs more than the counterweight and utilises gravity to travel down, thus generating energy.



The same occurs when an empty or lightly loaded car travels up. In this case, as the counterweight is heavier, it utilises gravity to travel down, thus generating energy.



Adapts to any building or hoistway

As a specific three-phase installation is not required, the OTIS GeN2™ Switch offers considerable construction savings and a much faster installation in the case of existing buildings. For this reason, it is perfect for any project, whether it is a new building or a restoration.

Because of the huge number of possibilities with regard to measurements and configuration, the OTIS GeN2™ Switch adapts to any hoistway, which is especially attractive to buildings that were constructed without an elevator.

Example of savings

AMOUNT IN CONSUMPTION

Load	Hydraulic elevator		2-speed traction elevator		OTIS GeN2™ Switch	
	Consumption in kWh/year	Consumption in €/year	Consumption in kWh/year	Consumption in €/year	Consumption in kWh/year	Consumption in €/year
6	2200	340	1330	205	644	100
8	2520	390	1470	226	737	113

Comparison of energy consumption of the motor taking an average of 80,000 trips a year under normal conditions of operation in a mid-rise building. Speed of the OTIS GeN2™ Switch: variable between 0.63m/s and 1m/s. Nominal speed of the two-speed traction elevator: 1m/s. Nominal speed of the hydraulic elevator: 0.63 m/s.

AMOUNT IN CONTRACTED POWER

Load	Hydraulic elevator		2-speed traction elevator		OTIS GeN2™ Switch	
	Contracted power in Kw	Amount €/year	Contracted power in Kw	Amount €/year	Contracted power in Kw	Amount €/year
6	9.5	207	5	109	0	0
8	11	240	7	153	737	113

AMOUNT IN CONSUMPTION + CONTRACTED POWER

Load	Hydraulic elevator	2-speed traction elevator	OTIS GeN2™ Switch
	Amount €/year Consumption+Power	Amount €/year Consumption+Power	Amount €/year Consumption+Power
6	547	314	100
8	630	379	113

TOTAL AMOUNT IN CONTRACTED POWER AND CONSUMPTION OF THE OTIS GEN2™ SWITCH

Load	With respect to a hydraulic elevator		With respect to a 2-speed traction elevator	
6	€447	81%	€214	68%
8	€517	82%	€266	70%

THE OTIS GEN2™ SWITCH DOES NOT REQUIRE THREE-PHASE INSTALLATION, WHICH MEANS SIGNIFICANT CONSTRUCTION SAVINGS

Example calculated with the following data:

- *Price per kW contracted: €1.82 per month*
- *Price per kW consumed: €0.154*

The amounts and total savings can vary according to the electrical tariff applied.

Just like one more electrical appliance

Electricity companies, in addition to charging for the energy consumed, levy a charge for the contracted power. This is what is called the power charge.

As the OTIS GeN2™ Switch only requires 500W of power (less than a microwave), in many cases it will not be necessary to contract more power to operate the elevator, which also implies substantial savings.

Unparalleled savings

COMPARISON OF ELECTRICAL APPLIANCES

The OTIS GeN2™ Switch only needs 500 W of power, less than a microwave.

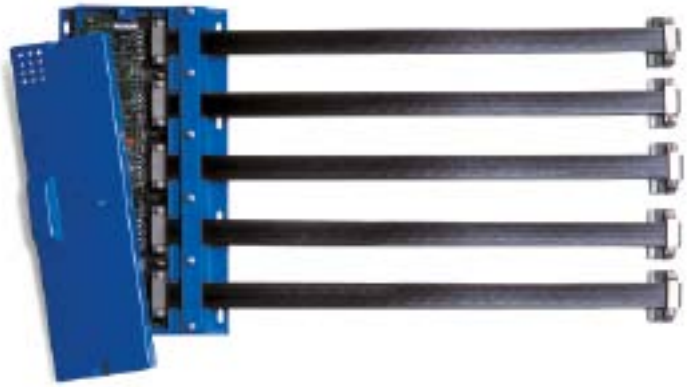
Moreover, enjoy all the benefits of GeN2™ technology

SILENCE AND COMFORT

- With GeN2™ technology there are no gears and the metal-to-metal effect of traditional wire ropes is eliminated, thus achieving a quiet operation and noise levels lower than the guidelines established by standard VDI2566-2:204.
- A digital load weighing device and a closed loop variable frequency drive, with vector control technology, eliminate sudden changes of car speed and ensure consistently smooth acceleration and deceleration.
- These state-of-the-art electronic systems, in combination with the flat belts, provide practically perfect stopping accuracy and car-to-floor levelling, to within +/- 3mm.

RELIABILITY AND PERMANENT MONITORING

The Otis GeN2™ SWITCH is equipped with the Pulse system which electronically monitors the status of the belts 24 hours a day, 365 days a year.



ENVIRONMENTAL PROTECTION

Neither the belts, coated in polyurethane, nor the machine, with sealed bearings, require any kind of lubricant.

SAFETY FEATURES

Door deterrent device

If the car is stopped between floors, a deterrent device prevents the car doors from opening. Hence a person cannot take the risk of exiting without following the safety procedures.

Hoistway access detection

To protect who have to enter the hoistway, a special safety system prevents the elevator from operating after a landing door has been opened unless the car in on that floor.

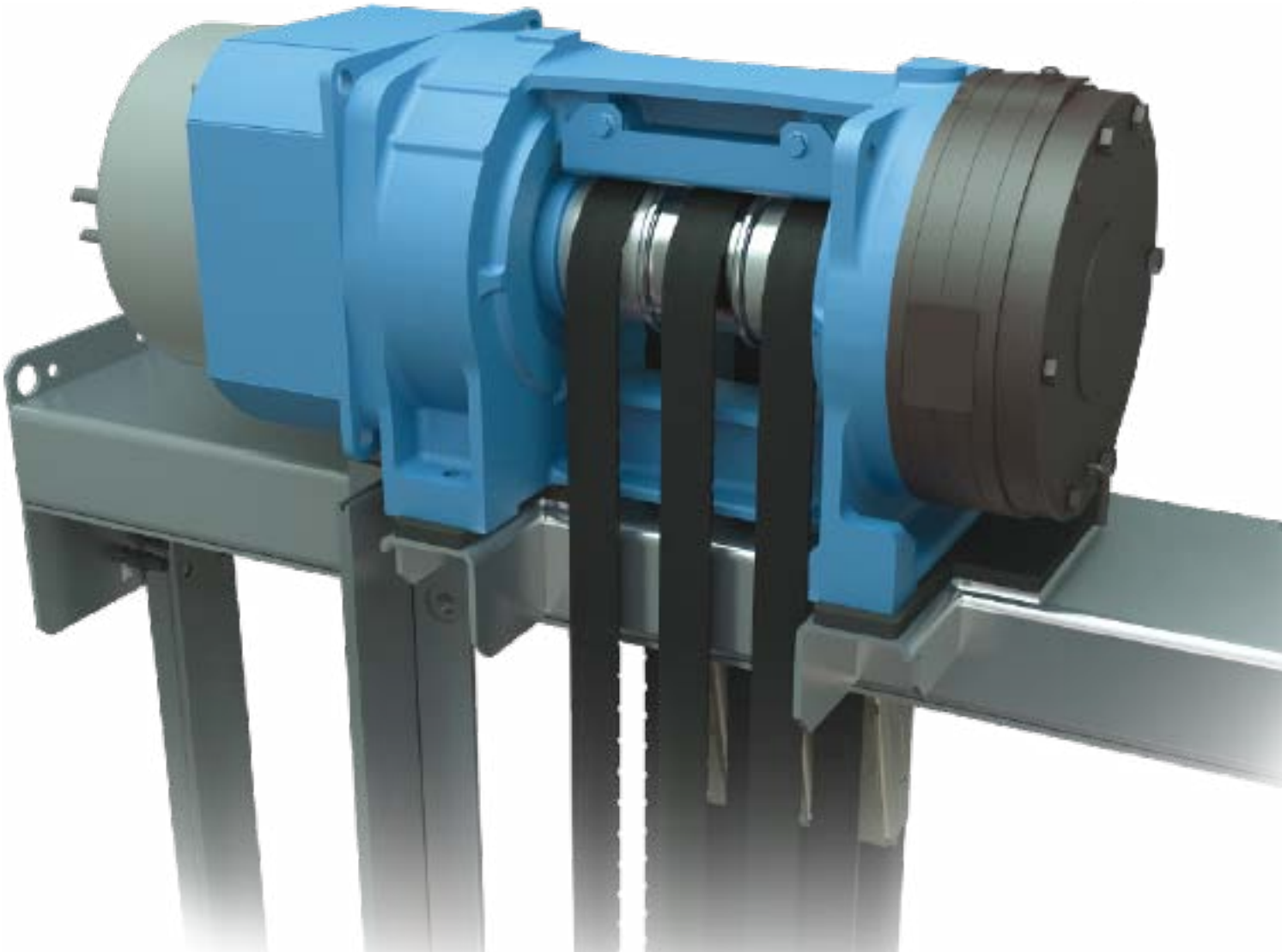
Entrance protection (optional)

A screen of infrared beams acts as an invisible safety curtain. When an obstacle breaks this screen, the entrance protection system detects it and immediately reopens the doors.

GeN2™

GeN2™ technology uses flat polyurethane-coated steel belts instead of the traditional steel ropes.

They are 20% lighter and last three times longer. Their superior flexibility allows the belts to bend around smaller diameter sheaves and makes it possible to use a more compact gearless machine which is 50% more efficient than a conventional machine.



Traction equipment

- Gearless sealed machine and permanent magnet motor.
- Traction by means of flat belts.
- 2:1 configuration with lower suspension or in cantilever.

Control

- Closed loop, variable frequency drive.

Controller

- Modular microprocessor control system, (MCS220), combined with an advanced variable frequency, variable voltage drive.
- Located in the frame of top floor landing door. As an option, it can be installed at a distance of up to 20 metres.
- To-way communication and remote intervention system.

Operation

- Simple automatic or down collective.
- Up to 2 elevators in a group.

Types of doors

- Automatic, telescopic doors.
- Equipped with a variable speed, digital control system, self-cleaning slotted sill and aluminium door track with protected roller system.
- Stainless steel or prime finish for subsequent painting.

Entrances

- One or two entrances.
- Maximum rise: 7 stops, 21 metres.

Speed

- Variable between 0,63 m/s and 1,00 m/s.

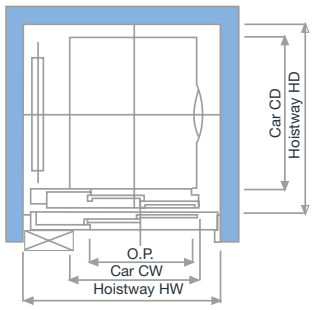
Electrical power supply

Mains voltage	220V 50Hz single phase
Absorbed intensity	1.5 A
Power	0.5 kW

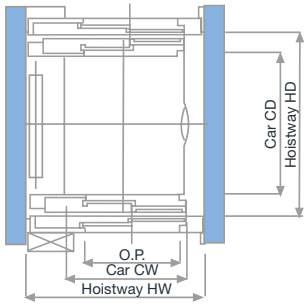
Hoistway dimensions:

Configuration: guide rails facing each other

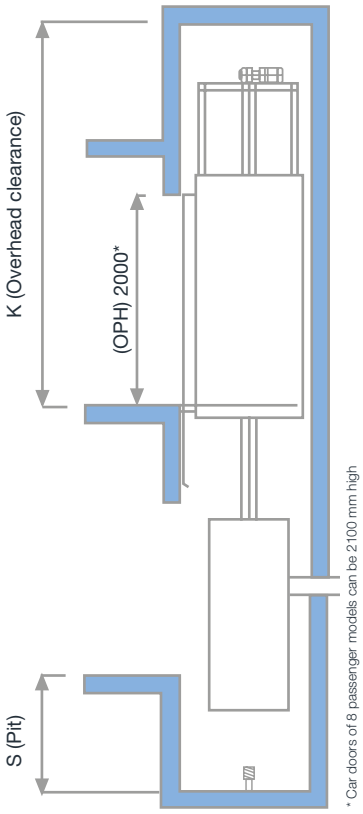
Floor plan
one entrance, telescopic door



Floor plan
two entrances, telescopic door



Elevation



Load Capacity	Car CW x CD	Hoistway HW x HD		Dor opening OP
320 kg	840 x 1050	1 ent.	1350 x 1300	700 Telescopic
		2 ent. 180º	1350 x 1400	
400 kg	840 x 1170	1 ent.	1350 x 1420	700 Telescopic
		2 ent. 180º	1350 x 1540	
450 kg	1000 x 1250	1 ent.	1550 x 1500	800 Telescopic
		2 ent. 180º	1550 x 1600	
525 kg	1000 x 1300	1 ent.	1550 x 1550	800 Telescopic
		2 ent. 180º	1550 x 1650	
630 kg	1100 x 1400	1 ent.	1600 x 1650	800 Telescopic
		2 ent. 180º	1600 x 1750	
		1 ent.	1690 x 1650	900 Telescopic
		2 ent. 180º	1690 x 1750	

Pit S=1000. For other hoistway dimensions, please contact your local Otis representative

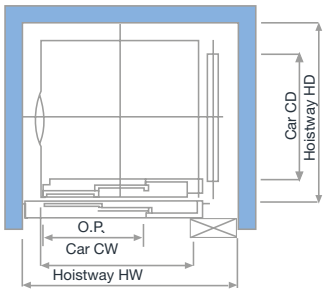
Door Height	Car Height	Overhead Clearance (K)	Availability
2000	2100	3300	Opcional
2000	2200	3400	Estándar
2100	2300	3500	Opcional

Dimensions in millimetres - Doors mounted on landing - Dimensions of controller cabinet: 400mm wide x 205mm deep x 2100mm high. Details of product design are subject to change.

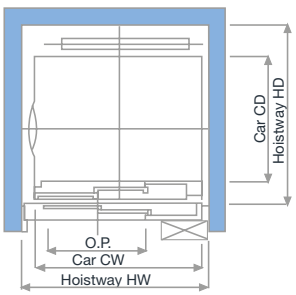
suitable for any project

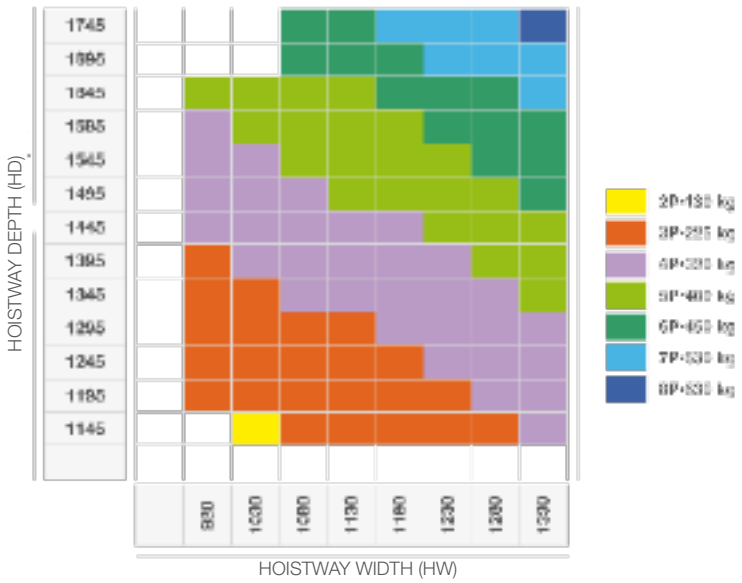
Configuration of side or rear guide rails and counterweight (*)

Side guide rails



Rear guide rails



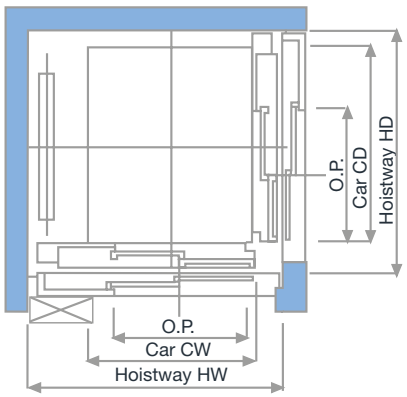


(*) Consult us about hoistway dimensions not mentioned. We have the solution

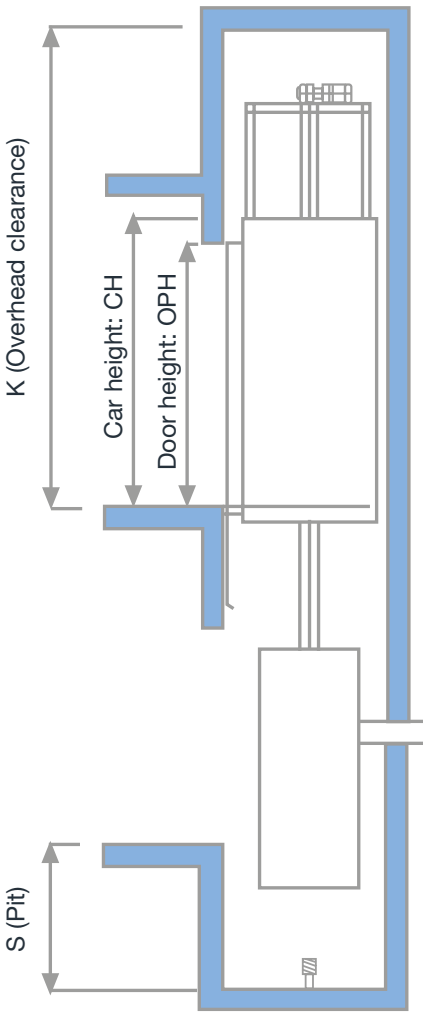
Hoistway dimensions

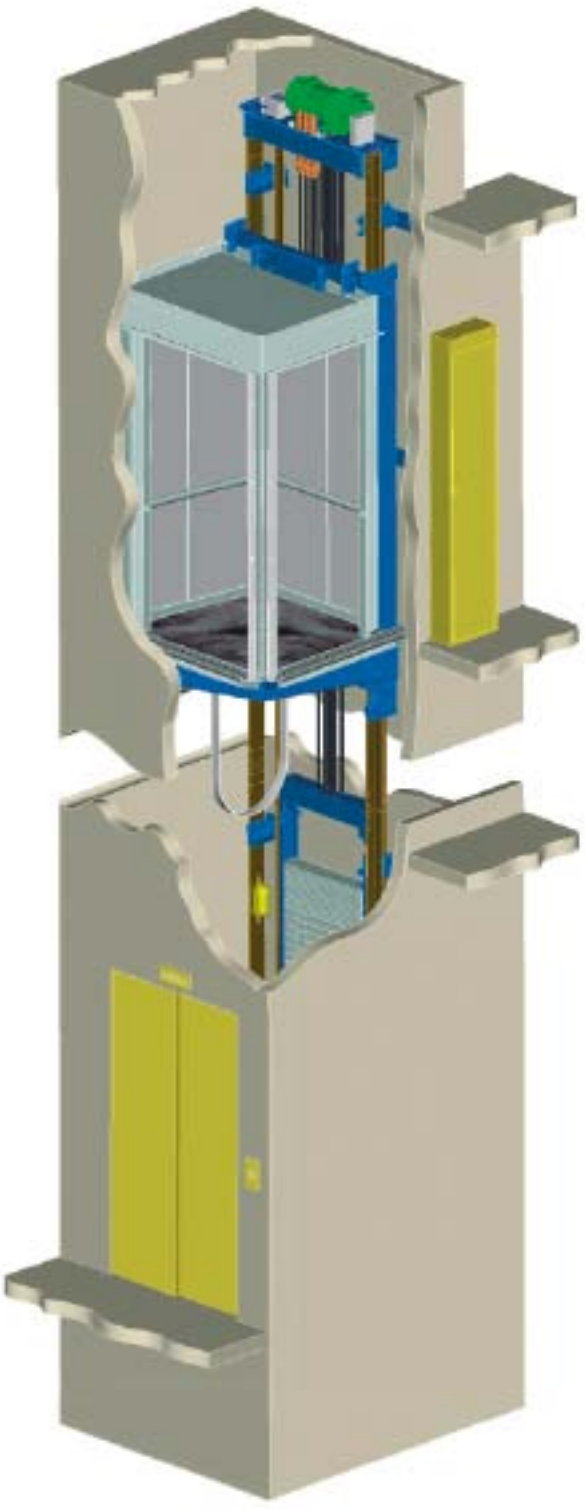
With two entrances at 90º

Floor plan
With two entrances at 90º



Elevation





Car Height(CH)	OPH	Dimension K (Overhead Clearance)	Dimension S (Pit)	Min. distance between floors
2100	2000	3300	1050	400
2200	2000/2100	3400	1050	400

Availability according to loads

Passengers	Load	Entrances	Door opening	Opening	HW	HD	CW	CD
6	450 kg	2 (90º)	800	Telescopic	1550	1550	1000	1250
8	630 kg				1750	1550	1200	1250

Dimensions in millimetres

Your choice: aesthetic options

Optima

The Optima car perfectly illustrates the principle that elegance can be achieved through simplicity – provided it's based on an inspired idea. With the Optima design, that idea is embodied by the car operating panel actually illuminating the car.

Offered in three different finishes to satisfy the diverse needs of our customers.

Selecta

Again illuminated by the car operating panel, creating a pleasant atmosphere that is complemented by a great choice of finishes for the walls.

Offered in four types of material with a wide range of options for the flooring.

Lumina

The Lumina car is distinguished by its range of ceiling lighting arrangements.

With a choice of four wall types, a host of decorative effects can be achieved.

Resista aesthetics with vandal-resistant fittings also available. Consult your local Otis representative.

The Gen2™ Otis Switch is equipped with LED lighting as standard in order to maximize energy savings. In the case of ceiling lighting, this will always be four LED spot lights.

Automatic car lighting switch-off available as an option.

Traveling the way to green, worldwide

The Way To Green starts with our strong commitment to environmentally friendly solutions. You can see it in our global efforts to reduce our carbon footprint in manufacturing and operations worldwide. You can see it in our state-of-the-art products like the flagship Gen2 elevator system and our technologically advanced escalators and moving walkways. You can see it in our highly efficient and environmentally aware maintenance and modernization programs. And you can see it for yourself by joining us in our efforts.

7 WTC photo: David Sundberg, ESTO Photography

OTIS invites you to join us on THE WAY TO GREEN

Otis elevators, escalators and moving walkways are a part of many of the world's most well-recognized and significant buildings.

Safety

Respect for the environment

Code of ethics

CERTIFIED IQNet MANAGEMENT SYSTEM

www.otis.com

OTIS THE WAY TO GREEN™