1 in service

OTIS

GeN2™

Switch

OTIS

GUARANTEE OF QUALITY

In 1853 OTIS created the first safety elevator in history; ever since then, right up to today, it has always been the world leader in vertical transport. A benchmark for quality and service throughout the world, Otis employs more than 60,000 professionals worldwide, who continually strive not only to meet all your expectations but to exceed them.

Past, present and of course future, a future of constant innovation and development of new technologies, in order to offer you the best products imaginable: elevators that are safer, quieter, more comfortable and environment-friendly. Quality elevated to the highest level.

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.

This philosophy is materialized in the OTIS GeN2™ range of elevators that do not produce hazardous waste and are up to 50% more energy efficient than conventional elevators, achieving substantial energy savings and significant reductions in CO_2 emissions.

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 minimize energy consumption.

GeN2 Switch

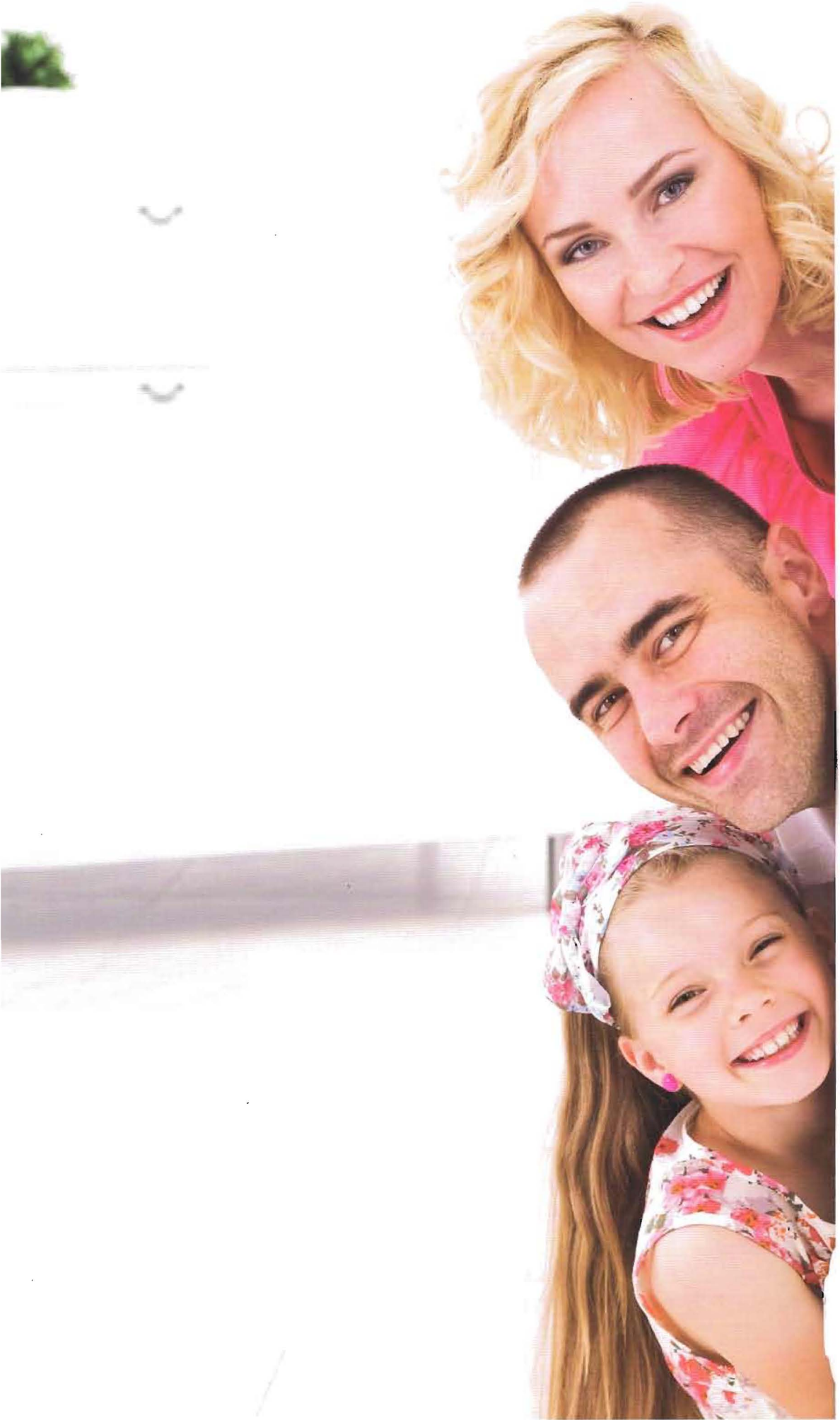
"PLUG AND GO"

The OTIS GeN2™ Switch is an environment-friendly, machine-roomless elevator with unsurpassed levels of comfort, reliability and safety. It uses an exclusive system of flat, polyurethane-coated steel belts, a technology invented and patented by OTIS.

It is a highly efficient and functional elevator, ideally suited for residential buildings, especially those that were built without an elevator. No specific electrical installation is required; you just plug it in like any other electrical appliance in the building. With the OTIS GeN2™ Switch it is "plug and go".

Furthermore, the OTIS GeN2™ Switch incorporates a system of accumulators that allows the elevator to continue working in the normal way for an extended period of time in the event of a power failure.

These accumulators are recharged with energy generated by the elevator itself when it travels up empty or travels down loaded, thereby achieving significant savings in the electricity bill.



OTIS GeN2 Switch

THE ELEVATOR REIMAGINED

UNPRECEDENTED ENERGY EFFICIENCY AND SAVINGS

Its innovative system of energy regeneration is capable of generating electricity during elevator operation and using it to recharge its accumulators. This system, together with the GeN2™ technology, allows significant savings in the power consumption of the motor.

No specific electrical installations are required; a normal, single phase 220V power supply found in any building is sufficient. And with a power supply contract of only 0.5kW, substantial savings can be achieved in both the cost of the installation and the fixed charges of the electricity bill.

SAFETY IN THE EVENT OF A POWER FAILURE

Thanks to its accumulators, the OTIS GeN2™ Switch can make up to one hundred trips in the event of a power failure.

This enables the elevator to continue in service, which is especially necessary in the case of disabled or reduced mobility users.

GEN2™ TECHNOLOGY

Flat polyurethane-coated steel belts are used 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.

This exclusive technology provides superior ride comfort for passengers, a quieter performance, significant energy savings and unprecedented reliability.

UNSURPASSED RIDE COMFORT

The improved overall comfort is achieved by a combination of various factors:

- The flat polyurethane-coated steel belts eliminate the metal-to-metal effect of traditional wire ropes.
- The gearless machine has less movable parts than a conventional one, eliminating rubbing noises and wear and tear.
- 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, together with a faster and quieter ride.
- 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 wear and tear with respect to a conventional elevator has been greatly reduced. The flat, polyurethane-coated, steel belts have more surface area at the point of contact, which virtually eliminates wear on the sheave and increases durability. When a gearless machine is used, the number of movable parts is reduced and thus the possibility of incidents is minimized.

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. Unlike conventional wire rope inspections that rely on periodic visual examinations, OTIS' Pulse system automatically detects any anomaly, thus enhancing the reliability of the elevator and your safety.

ENVIRONMENTAL PROTECTION AND ENERGY SAVINGS

Neither the belts, coated in polyurethane, nor the machine, with sealed bearings, require any kind of lubrication, thus avoiding the production of hazardous wastes.

COMPARISON WITH OTHER CONVENTIONAL SYSTEMS:

System	Hydraulic	Electric traction	OTIS GeN2™ Switch
Supply voltage	380V - three phase	380V - three phase	220V - single phase
Power	11kW	7.0kW	0.5kW
Rated current	19A	8.5A	1.5A
Maximum current	48A	32A	1.5A

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 a person entering the hoistway, a special safety feature prevents the elevator from operating after a landing door has been opened.

- **Car 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.

- **Outstanding levelling accuracy**

The reduced stretch of the flat belts compared to conventional steel ropes, together with a closed loop variable frequency control, results in outstanding stopping accuracy (+/- 3mm).

OTIS Switch GeN2

A SIMPLE, INTELLIGENT SYSTEM

The Otis GeN2™ Switch generates energy

When the movement of the car is in the load's favour (as explained on the following page), the motor is converted into a dynamo that generates energy. This energy is used to recharge the accumulators, reducing the electrical power consumption from the mains.

Operates in the event of a power failure

In the event of a power failure, the electricity stored in the accumulators is capable of maintaining the elevator in service, allowing passengers to travel up or down to the desired floor, and offering accessibility to disabled or reduced mobility passengers.

Absorbed power of only 0.5kW

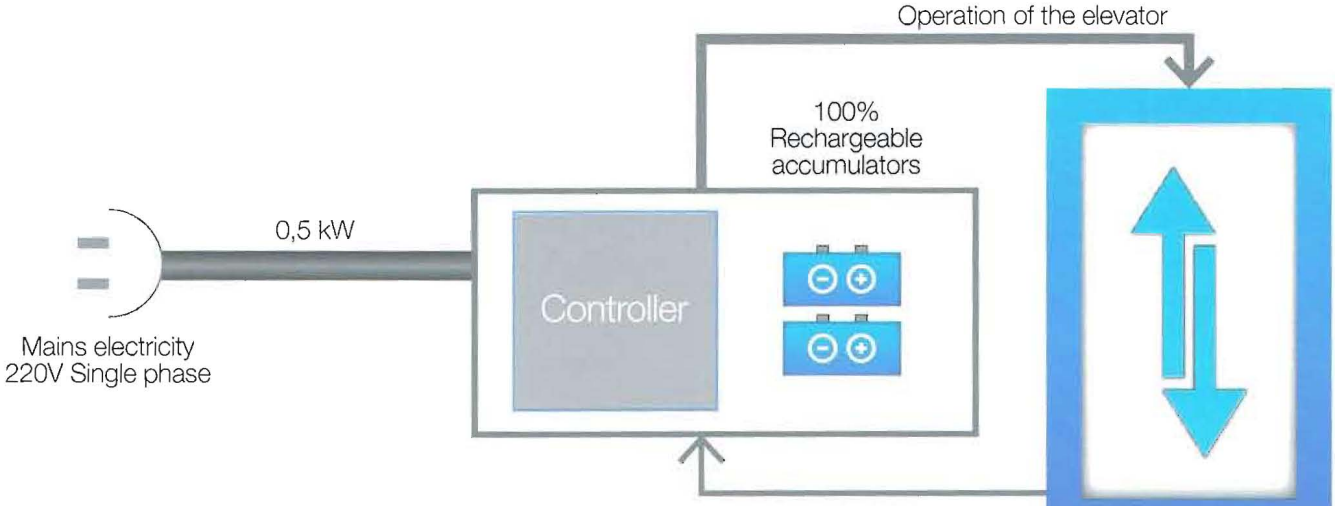
The accumulators are charged by connecting them to the 220V single phase power supply and absorb a maximum intensity of only 1.5 amperes. When the elevator motor comes into operation, it is powered by the accumulators, which are recharged when the motor is idle.

HOW DOES IT GENERATE ENERGY?

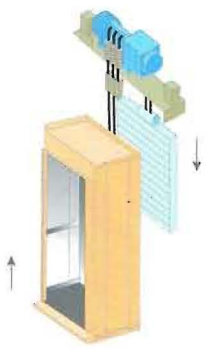
When the car is loaded it travels down by the effect of gravity and the motor produces electricity instead of consuming it, as if it were a dynamo. The same occurs when an empty or lightly loaded car travels up; the counterweight descends by the effect of gravity and the motor generates energy.

The OTIS GeN2™ Switch can harness this energy and use it to recharge the accumulators that operate the elevator.

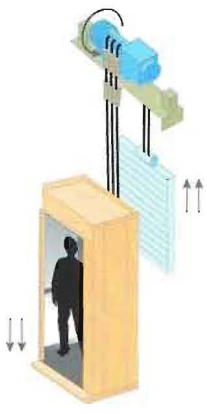
Also works with solar panel energy or any other renewable energy source.



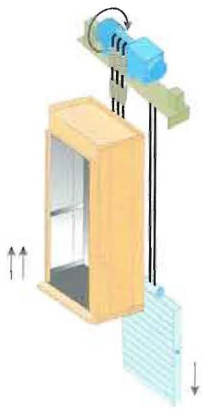
When the car movement is favourable, it generates energy and recharges the accumulators



An elevator consists of a car and a counterweight that are connected by a machine. When the counterweight travels down, the car travels up and vice versa.



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.

OTIS Switch GEN2

TECHNICAL SPECIFICATIONS

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.
Harmonics filter (CHF) optional.
Located in the frame of top floor landing door.
As an option, it can be installed at a distance of up to 20 metres.
Two-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.

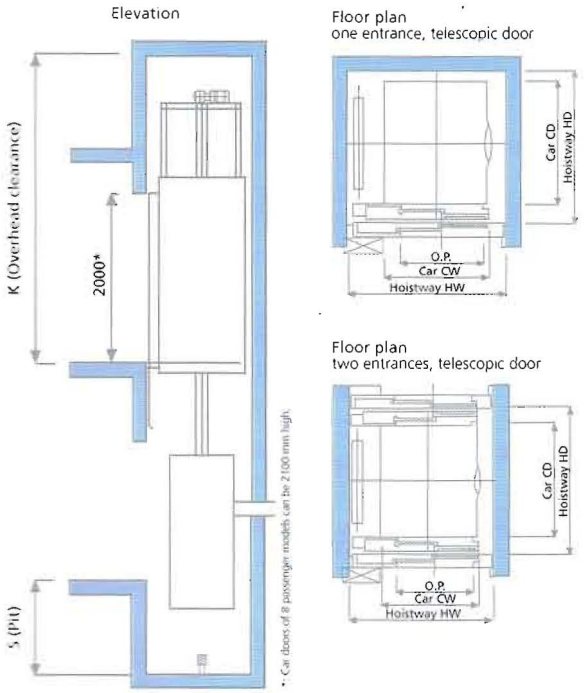
Maximum rise
7 stops, 21 metres.

Speed
Variable 0.63 – 1.00m/s.

ELECTRIC POWER SUPPLY

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

CONFIGURATION AND STANDARD DIMENSIONS



Load capacity	Car CWxCD	Hoistway HWxHD		Door opening OP
320 kg (4p)	840x1050	1 ent. 2 ent. 180°	1380x1300 1380x1400	700 Telescopic
400 kg (5p)	840x1170	1 ent. 2 ent. 180°	1380x1420 1380x1540	700 Telescopic
450 kg (6p)	1000x1250	1 ent. 2 ent. 180°	1550x1500 1550x1600	800 Telescopic
525 kg (7p)	1000x1300	1 ent. 2 ent. 180°	1550x1550 1550x1650	800 Telescopic
630 kg (8p)	1100x1400	1 ent. 2 ent. 180°	1600x1650 1600x1750	800 Telescopic
		1 ent. 2 ent. 180°	1690x1650 1690x1750	900 Telescopic

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

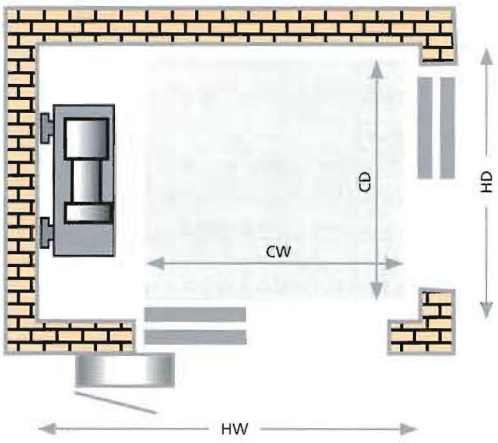
Door height	Car height	Overhead clearance (K) for 1.0 m/s	Availability
2000	2100	3300	Optional
2000	2200	3400	Standard
2100	2300	3500	Optional

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

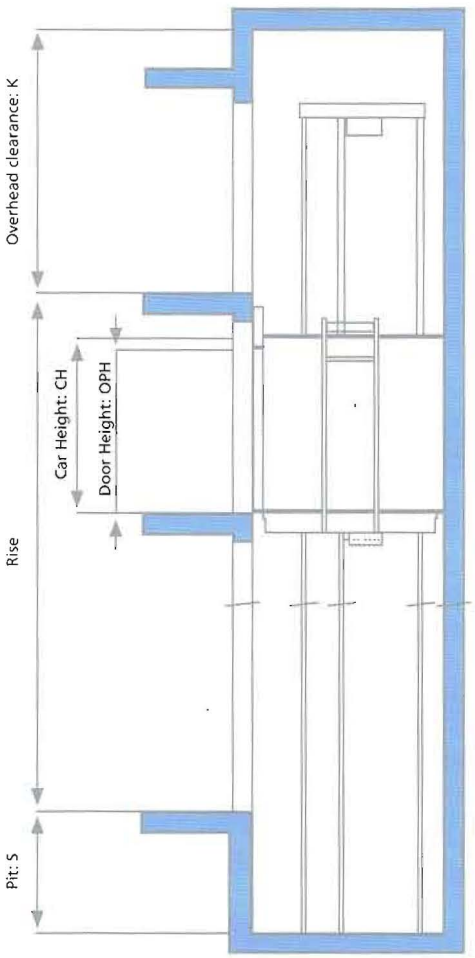
HOISTWAY DIMENSIONS OTIS Switch

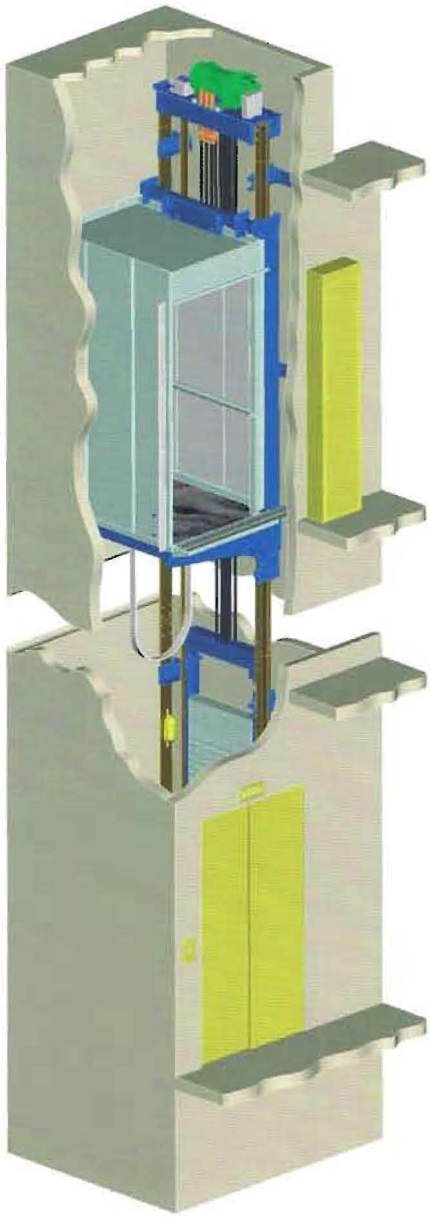
Models 6-8 passengers 2 entrances at 90°

Floor plan



Elevation





Car Height (CH) (mm)	OPH (mm)	Dimension K (Overhead Clearance) (mm)	Dimension S (Pit) (mm)	Min. distance between floors (mm)
2100	2000	3300	1050	400
2200	2000/2100	3400	1050	400
2300	2100	3500	1050	400

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

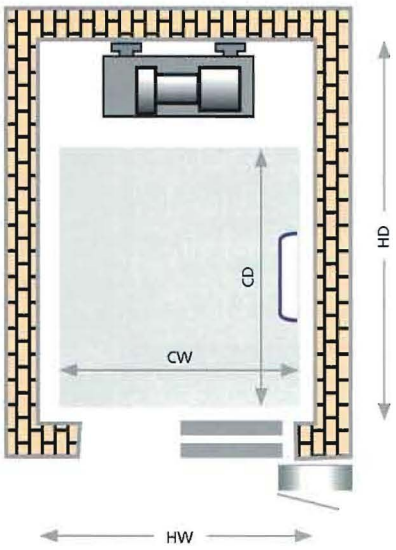
HOISTWAY DIMENSIONS **OTIS** Switch GeN2

Models 2-8 passengers 1 entrance (rear counterweight)

DIMENSIONS AND CHARACTERISTICS OTIS GeN2™ Switch

The OTIS GeN2™ Switch offers variable car dimensions from 2 to 8 passengers, but another particular characteristic of the OTIS GeN2™ Switch is that the counterweight can be located at the rear or either side of the hoistway.

Floor plan



Load	Passengers
180 kg	2
260 kg	3
320 kg	4
400 kg	5
450 kg	6
525 kg	7
630 kg	8

Consult the possible hoistway dimensions for each capacity and load

Hoistway dimensions	
HW (mm)	HD (mm)
between 1000 and 1650	between 1150 and 1785

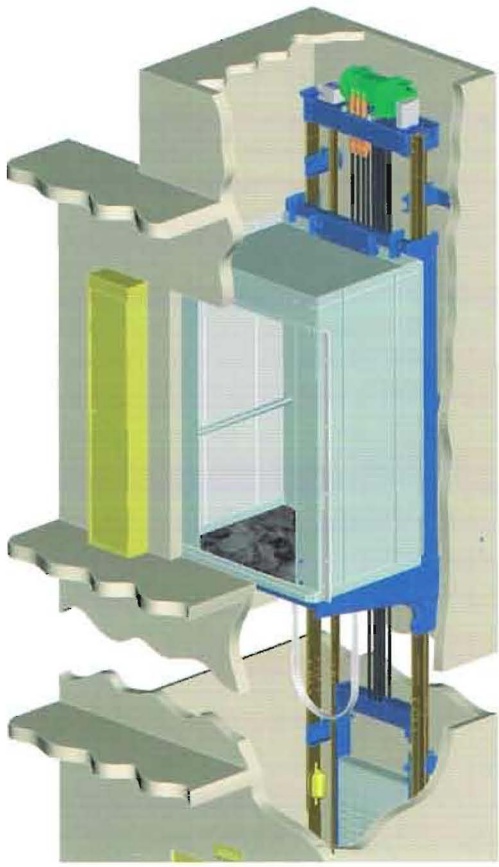
Overhead and pit dimensions are the same as the model with two entrances at 90°

Car dimensions	
CW (mm)	CD (mm)
between 850 and 1500	between 620 and 1250

Minimum distance between floors: 2680 mm

Doors	(mm)
2-3-4 panels	between 600 and 1000

As an option Bus Doors inside car with semi-automatic landing doors



OTIS Switch GEN2

The Otis Gen2™ Switch is not only the most technologically advanced elevator on the market, but it also has the widest range of car panels, floorings, ceilings, handrails, hall buttons, displays, doors and mirrors.

CAR AESTHETICS: A WHOLE RANGE OF OPTIONS TO CHOOSE FROM

Optima

The Optima 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. Important to the car's refined appearance are the panels themselves. In three finishes, they are cheering to the eye and easy to maintain. In fact, it is the balance between the aesthetic and the practical that defines the Optima car.

Selecta

The name unequivocally defines the design. The Selecta car is about choice. Again illuminated by the car operating panel, it satisfies the most diverse requirements. There are four car wall designs, various flooring types together with two car operating panel designs and two handrail types. The possibilities are indeed endless. Demonstrating that the Selecta car has been conceived by us to be designed by you.

Lumina

The Lumina car is distinguished by its range of ceiling lighting arrangements. Each offers a different level of illumination, from the discreet to the sumptuous, and in combination with a choice of four wall types, a host of decorative effects can be achieved. Painstaking detail can also be found in the quality of the car fittings which cumulatively help establish the prestige of the Lumina car.

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

The OTIS GeN2™ Switch is equipped as standard with LED lighting in order to maximize the energy savings. In the case of ceiling lighting, there will always be four LED spots.