OTIS

United Technologies

GeN2™ Flex+

SIX passenger cars in the same space as FOUR

GeN2™ Flex+

RESPECT FOR THE ENVIRONMENT

Environmental responsibility is one of the fundamental pillars of OTIS' philosophy. We are therefore determined to lead the market towards a "green present" 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.

GUARANTEE OF QUALITY

In 1853 OTIS created the first safe elevator in history. Since then, and up to today, OTIS has been and is 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 to exceed all your expectations.

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

GeN2™ Flex+

GREENER PRODUCTS

Our elevators, escalators and moving walkways incorporate new technologies to save energy and operating costs.

MADRID FACTORY, **3,600 SOLAR PANELS** GENERATE **60% OF ITS ELECTRICITY** REQUIREMENTS

GeN2™ Flex+

TODAY ELEVATOR TRAVEL IS A NECESSITY MORE THAN A COMMODITY

Buildings with very limited space can also have elevators.

OTIS has launched a revolutionary elevator, the **GeN2™ Flex+**, which offers the possibility of installing an elevator where previously it was impossible or of changing the existing car for another one of greater capacity.

The **GeN2™ Flex+** elevator maximizes the space available and can be adapted to practically any type of hoistway. If there is already an elevator, it allows the passenger capacity of the car to be increased without requiring construction work to make the existing hoistway bigger.

Thanks to its special configuration, **GeN2™ Flex+** allows for two entrances at 90° and makes it possible to install a scenic elevator.

OTIS' Global Service offers a feasibility study completely free of charge, legal advice, installation and maintenance.

CONVENTIONAL ELEVATOR

GeN2™ Flex+

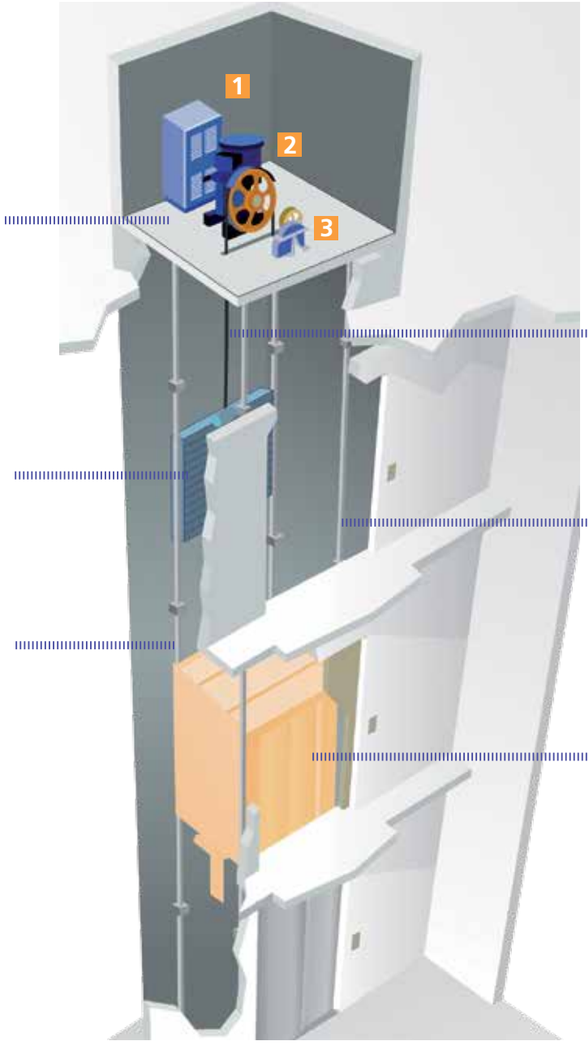
Up to **50%** more capacity

6 passenger cars in the same space as 4

4 PASSENGERS

MACHINE ROOM

1. Controller
2. Machine
3. Overspeed governor



Traditional **steel ropes**

Rear **counterweight**

Guide rails

Guide rails

Car for **4 passengers**

6 PASSENGERS

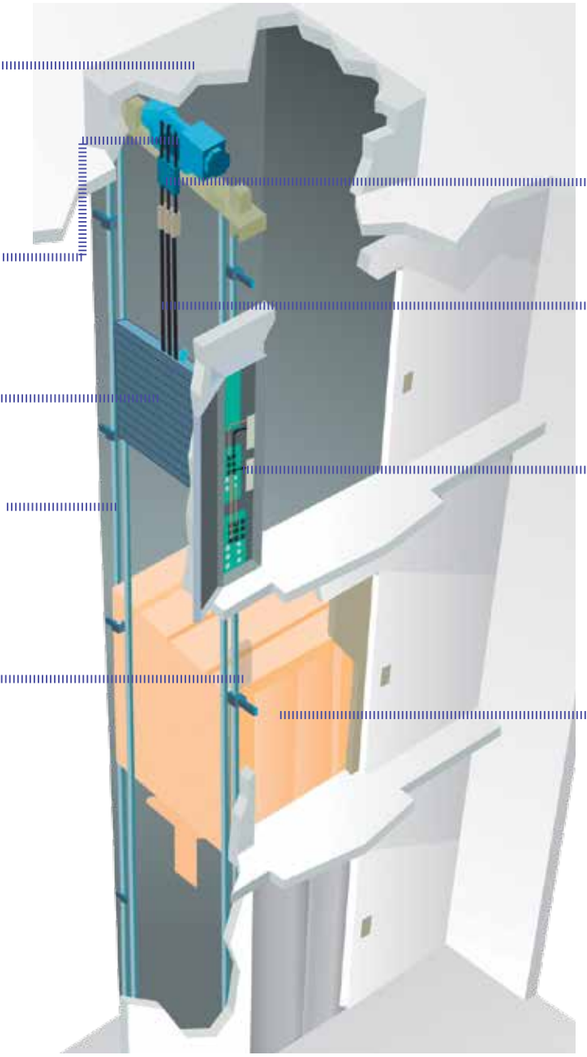
No machine room

The **machine** is installed in the hoistway

Counterweight to one side

Lateral **guide rails**

Overspeed governor



24h PULSE system

Flat belts

Controller

Up to **50% more** capacity. Car for **6 passengers**

· 2 Entrances at 90°, Panorama elevator and low pit avaliable.

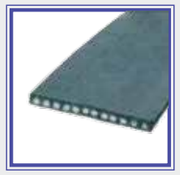
In the sam e space

GeN2™ Flex+

THE MOST TECHNOLOGICALLY **ADVANCED** ELEVATOR

FLEXIBLE STEEL BELTS

The flat, polyurethane-coated steel belts patented by OTIS are 20% lighter than conventional ropes and last three times longer.

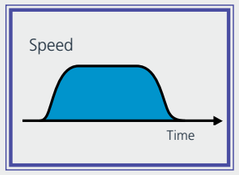


OTIS GREENPOWER MACHINE

The compact gearless machine is equipped with a synchronous, permanent-magnet motor of radial design. From an energy perspective, it is up to 50% more efficient than a conventional geared machine.

CLOSED-LOOP SPEED CONTROL

Consistently smooth acceleration and deceleration, a faster and more comfortable ride, and exceptional levelling accuracy are some of the many benefits of closed-loop speed control.



THE GEN2™ SHEAVE

The reduced sheave size of the GeN2™ system, only 80 mm in diameter, has allowed OTIS to design a machine that is 70% smaller than traditional machines.

PERMANENT MONITORING OF THE BELTS

The PULSE™ system continuously monitors the status of the steel belts 24 hours a day, 7 days a week.

THE MACHINE-ROOMLESS ELEVATOR WITH UNSURPASSED LEVELS OF COMFORT, SAFETY, RELIABILITY AND RESPECT FOR THE ENVIRONMENT.

SAFETY FEATURES

For elevator users and maintenance technicians

• Door restrictor

Prevents passengers from opening the car doors if the elevator is stopped between floors, and from exiting the elevator without following the safety procedures.

• Hoistway access detection

To protect the maintenance technicians, a special safety system prevents the elevator from operating on normal service after a landing door has been opened, unless the car is on that floor.

• Entrance protection (optional)

A screen of infra-red beams that acts as an invisible safety curtain. When an obstacle is detected, the entrance protection system immediately reopens the doors.

Outstanding levelling accuracy

Entrance protection (optional)

• Outstanding levelling accuracy

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

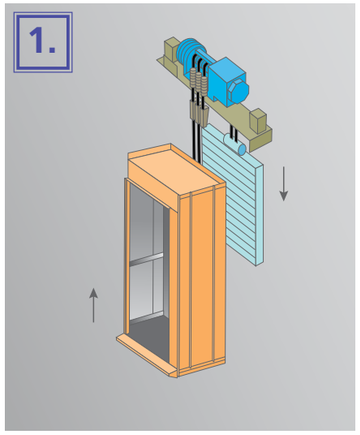
• Machine brake system

The VF system prevents the machine from operating before the brake is fully released.

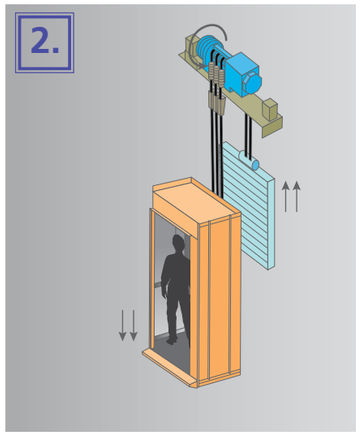
GeN2™ Flex+

ReGen™

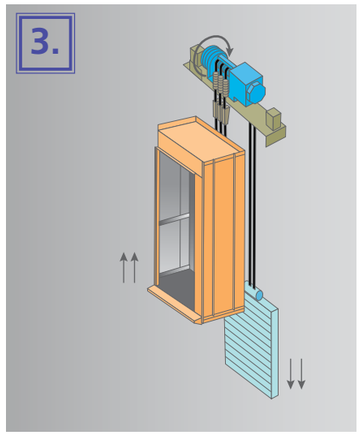
PRODUCES ENERGY FOR THE BUILDING



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 when the counterweight travels up, the car travels down.



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.

The **GeN2™ Flex+** elevator is equipped with a regenerative system.

The **ReGen Drive** complies with the most demanding energy efficiency requirements, significantly reducing the consumption and the energy costs of the building.

In conventional elevator systems, the energy generated by the elevator is dissipated in the form of heat.

The **ReGen Drive** is able to capture this energy and feed it back into the building grid, where it can be used to power other electrical components.

OPTIONS: **LIGHTING**

LED LIGHTING

LED lighting can provide energy savings of at least 50% compared with other systems such as fluorescent lights or halogen lamps.

It does not generate heat which is an important issue in a small space such as an elevator car and lasts at least 10 times longer than other lighting systems.

AUTOMATIC CAR LIGHTING SWITCH-OFF

Car lighting previously remained on 24 hours a day, 365 days a year, even when the elevator was not in use and was stopped for hours and hours.

The solution in order to avoid this useless waste of energy is car lighting that switches off automatically.

When the elevator is not in use, the car lighting is switched off after a certain time. It remains off until a passenger presses a call button and the elevator returns to service. In this way, the energy consumption of car lighting can be reduced more than 95%.

GeN2™ Flex+

ENERGY SAVINGS

The table below shows a comparison of contract power required and energy consumption of the motor, according to the type of elevator and the car lighting consumption with LED automatic switch-off or constant fluorescent lighting.

Elevator	Hydraulic		2-Speed Traction		OTIS GeN2™ Flex+	
	Contracted Power	Consumption	Contracted Power	Consumption	Contracted Power	Consumption
4 passengers	13.5 kW	1,352 kWh / year	7.3 kW	659 kWh / year	3.3 kW	422 kWh / year
6 passengers	16 kW	1,793 kWh / year	9.2 kW	770 kWh / year	3.3 kW	469 kWh / year
8 passengers	17 kW	2,400 kWh / year	9.2 kW	924 kWh / year	5.4 kW	532 kWh / year
Car lighting	Consumption with constant fluorescent lighting		Consumption with constant fluorescent lighting		Consumption with LED automatic switch-off	
	840 kWh / year		840 kWh / year		7 kWh / year	

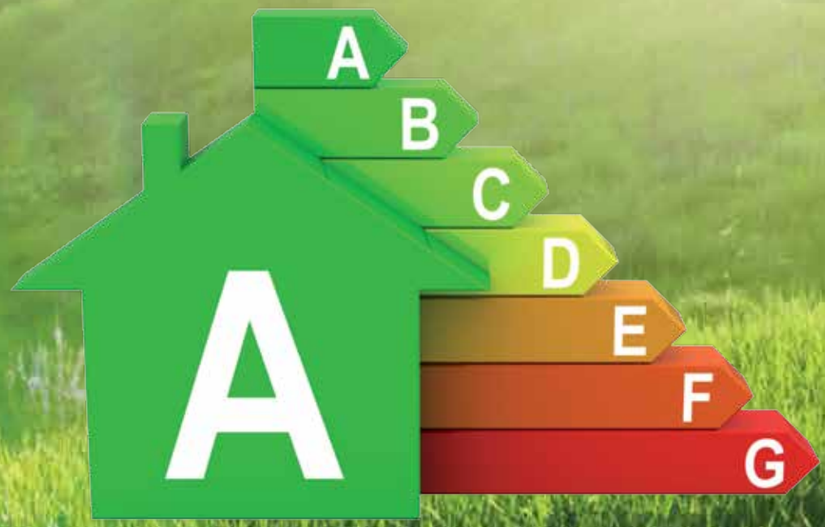
Figures for reference purposes only, the actual figures may vary depending on the installation characteristics and conditions. Data according to VDI 4707 usage category 2 (average traveling time of 30 minutes per day). Nominal speed of the Gen2 Flex+ and the conventional traction elevator: 1 m/s. Nominal speed of the hydraulic elevator: 0,63 m/s.

The savings achieved, in kWh and in euros, thanks to the GeN2™ system and the automatic car lighting switch-off system, are as follows:

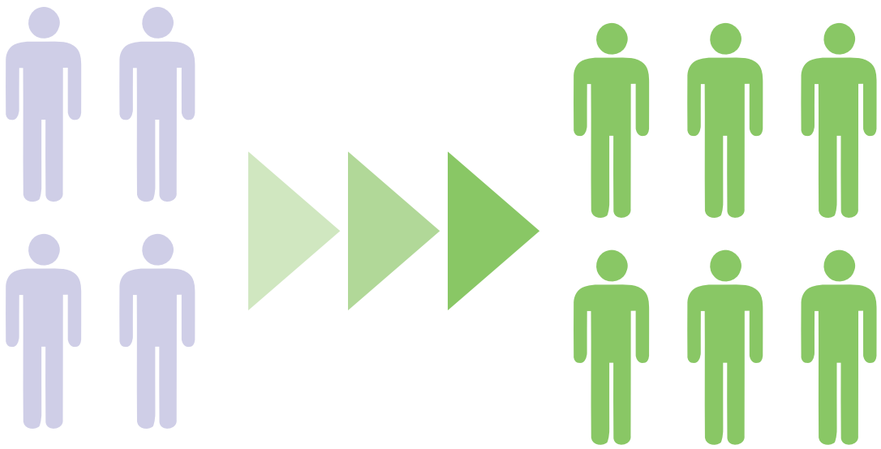
Elevator	Hydraulic	2-Speed Traction	Hydraulic	2-Speed Traction
	Energy savings		Financial savings (including power supply contracted)	
4 passengers	930 kWh (68.8%)	237 kWh (36.0%)	€ 681	€ 244
6 passengers	1,324 kWh (73.8%)	301 kWh (39.1%)	€ 878	€ 352
8 passengers	1,868 kWh (77.8%)	392 kWh (42.4%)	€ 918	€ 261
Car lighting	833 kWh	833 kWh	€ 147	€ 147

Annual savings due to power supply contracted, system energy demand and car lighting. Assuming a cost of 0.14 kWh and a cost of € 40.20 per kW contracted per year, plus taxes. Savings in euros may vary according to the tariff applied by the electric company.

HIGHEST ENERGY EFFICIENCY RATING
ACCORDING TO STANDARD **VDI4707**



WE INCREASE THE SPACE INSIDE YOUR **ELEVATOR CAR FROM 4 TO 6 PASSENGERS**



TECHNICAL SPECIFICATIONS:

TRACTION EQUIPMENT

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

CONTROL

- Closed loop, variable frequency.

CONTROLLER

- Modular microprocessor control system, combined with an advanced variable frequency, variable voltage system.
- Located in the landing door column on the top floor. 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. Down collective. Full collective.
- Up to 4 elevators in a group.

TYPES OF DOORS

- Automatic telescopic doors, central opening and semi-automatic folding doors.
- Equipped with a variable speed, digital control system, self-cleaning slotted sill and aluminium door track with protected roller system.
- Stainless steel finish or prime coated steel ready for finishing.

ENTRANCES

- One or two entrances (90° and 180°).
- Maximum rise: 18 stops, 45 metres.

SPEED

- 1,00 m/s.

LOAD CAPACITY

- 3 to 8 passengers (225/630 kg).

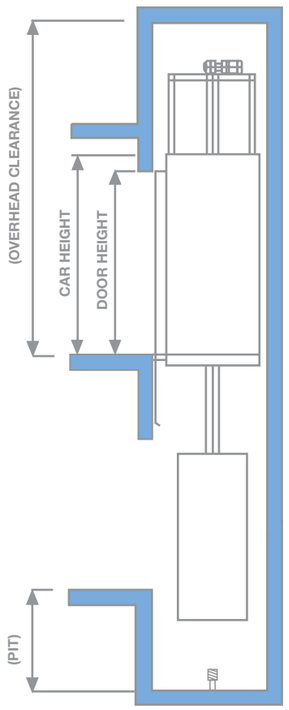
GeN2™ Flex+

SOLUTIONS FOR ANY HOISTWAY DIMENSIONS

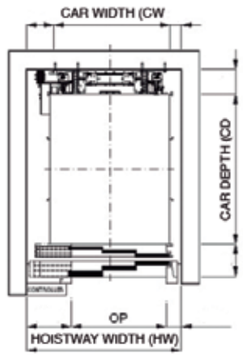
The Otis GeN2 Flex is adaptable to almost any type of hoistway and can be configured with the guide rails and the counterweight to one side or with the guide rails to both sides and the counterweight behind the car.

To configure your car, please consult our technical department for dimensions.

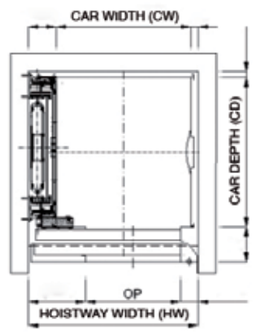
Vertical Section



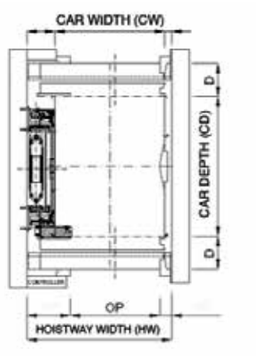
One entrance, rear carframe*



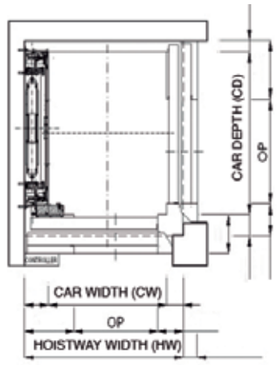
One entrance, lateral carframe*



Two entrances 180°, lateral carframe*



Two entrances 90°, lateral carframe*



*Consult our technical department about the type of doors

Door height	Car height	Overhead Clearance at 1.0 m/s	Pit minimum Marble floor	Pit minimum Rubber floor
2000	2100	3300	400	380
2000	2200	3400	400	380
2100	2300	3500	400	380

Pit minimum 400/380 mm for 1 entrance, others consult your local OTIS representative and also for lower overhead clearances.

Dimensions of controller cabinet

2100 mm high x 330 mm wide
x 95 mm deep

CAR AESTHETICS
OPTIMA, SELECTA AND **LUMINA**

1. SKINPLATE CAR FINISH

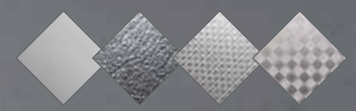
2. LAMINATE CAR FINISH

3. STAINLESS STEEL CAR FINISH

SKINPLATE

LAMINATES

STAINLESS STEEL

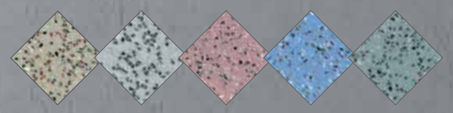


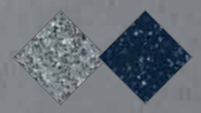
WOOD

FLOORINGS

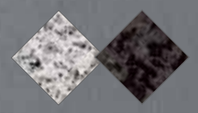
RUBBER

SPECKLED RUBBER





LIGHTWEIGHT GRANITE



WIDE RANGE OF CEILINGS, MIRRORS, HANDRAILS, ETC.

GeN2™ Flex+

OTIS CARES FOR THE **ENVIRONMENT**

OTIS worldwide

Taking care of the environment 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.

Otis elevators, escalators and moving walkways form part of many of the world's most well-known and important buildings.

OTIS

United Technologies

www.otis.com

Mod. 5250