Caring for you, and making you feel comfortable.

HUMAN FRIENDLY

What we are aiming is to fill a building with safe and comfortable products and services, and to make a town even more pleasant for all the people who live, work and visit there. Always caring for you. Always getting close to you.

HUMAN FRIENDLY is the R&D concept conveying our thoughts.

Hitachi Building Systems Co., Ltd.

Contact Address:
Creating a New History

Hitachi Group is active in a wide range of business sectors. From the technology and experience built up over many years, come the synergies that feed new innovation.

Hitachi has been developing and manufacturing elevators and escalators since 1924.

As social demands on elevators change over time, Hitachi’s machine room-less elevator model UAG series SN1, developed in Japan, meets the needs of customers in terms of efficiency, safety, comfort, and space savings. Hitachi is creating a new history for elevators, and for your building.

History of Hitachi elevators

• 1932: First elevator is delivered: freight elevator for Tokyo Electric Co. • 1968: 100-m/min. elevator is delivered to Japan’s first skyscraper: Kasumigaseki Building. • 1991: Power-saving inverter-controlled Ultrahigh-Speed elevator commences operations: Tokyo Metropolitan Government Building No.1. • 2003: 300-m/min. double-deck elevator is delivered: Roppongi Hills Mori Tower, Tokyo. • 2007: 480-m/min., 2,850-kg high-rise shuttle elevator is delivered: Tokyo Midtown, Midtown Tower. • 2008: World’s largest Ultrahigh-Speed double-deck elevator is delivered: Shanghai World Financial Center. • 2011: 600-m/min. Ultrahigh-Speed elevator for the Middle East: Al Hamra Mixed-Use Complex, Kuwait. • 2012: High-Speed, large-capacity elevator providing access to Japan’s highest (450 m) observation platform: TOKYO SKYTREE. • 2016: Delivery of the Ultrahigh-Speed elevators, with a speed of 1,200 m/min. (20 m/s), to the Guangzhou CTF Finance Centre (530 m tall) in Guangzhou, China. • 2017: The tallest building in Singapore, famous as the winner of the World Architecture News Mixed-Use Award: Tanjong Pagar Centre, Singapore.

Simplified specification selection process

Create the elevator that best meets your needs by selecting specifications and design options from this catalogue.

Standard Specifications

Select standard specifications, such as car size, rated speed, and rated load, to match your building.

Functions

Choose the functions that best fulfill your requirements.

Design

Select the design options that best suit your building.
Four classifications of value we provide for your building

Energy efficiency

Reduced energy consumption with standard specifications
Power consumption can be reduced to approximately 1/6.

LED lighting
Use of LED lighting reduces the energy consumption by approximately 1/4 and its service life is three times longer compared with fluorescent lighting.

Automatic turn-off of car lighting and fan
When the elevator is idle, the lighting and ventilation fan in the elevator are automatically turned off to conserve energy. Energy consumption is reduced by adopting LED lighting for the ceiling and by shortening the time until the lighting and fan turn off.

Regenerative system
The traction mechanism acts as a power generator and transmits power back to the building electrical network that reduces energy consumption by approximately 30%.

Comfort

Improved riding comfort
Motor control and vibration-absorbing type guide shoes provide a quiet and smooth ride.

Door signal with multi-beam door sensor
Door signal that tells when the door is going to close for enhanced safety.

Ion generator
Ion generator works to improve air quality.

Safety & Emergency

Micro-leveling
Automatically corrects the elevator landing level when there is a level difference between car and floor.

Automatic rescue device for power failure
When a power failure is detected, the drive power supply switches over to battery power, and the elevator automatically moves to the nearest floor and releases the passengers.

Design

LCD indicators
In-car indicator and hall indicator with color LCD are available. They provide a quick overview of the operating status.

Car and hall designs
Select the most suitable design from the options available, including ceiling and 3 side wall designs created by Hitachi’s designers to match a variety of building types.
Energy efficiency

LED lighting

By adopting LED lighting for all ceiling designs, energy consumption is reduced and service life is prolonged compared with fluorescent lighting.

BS-11*1

Standard

SL-11*1

Option

Power consumption approx. 1/3
that of fluorescent lighting
Employs LED lighting with
approx. 3x*2 longer service life.

Power consumption approx. 1/6
that of fluorescent lighting
Employs LED lighting with
approx. 3x*2 longer service life.

By changing the time until the lighting turns off during standby from three minutes to one minute…
Power consumption can be reduced to approx. 1/6.

By changing the time until the lighting turns off during standby from three minutes to one minute…
Power consumption can be reduced to approx. 1/12.

Automatic turn-off of car lighting and fan

When the elevator is idle, the lighting and ventilation fan in the elevator are automatically turned off to conserve energy. Energy consumption is reduced by adopting LED lighting for the ceiling and by shortening the time until the lighting and fan turn off.

Regenerative system

Making use of energy generated by the elevator

Making use of the energy generated by the elevator when traveling downwards with a heavy car load or upwards with a light car load, the traction mechanism acts as a power generator and transmits power back to the electrical network in the building.

Flow of regenerated power

• Reduction of power consumption

• Reduction of power consumption

Industrial power

Regenerated power

Flow of regenerated power

By changing the time until the lighting turns off during standby from three minutes to one minute…
Power consumption can be reduced to approx. 1/12.

*1 In our model released in 2016, calculation of 30% energy saving is done based on no load in the lift car. The energy savings are calculated theoretically. Differs depending on usage conditions.

*2 Comparison with 10-passenger model with fluorescent ceiling lighting. Results may differ depending on ceiling configuration and dimensions.

*3 Power consumption of fixture including lighting power supply.

*4 Rated service life of fixture excluding lighting power supply. Actual service life may vary depending on usage conditions.

*5 Variance depending on usage conditions.
Comfort

Ion generator

An ion generator manufactured in Japan is mounted on top of the car. Nano-sized electrostatic atomized water particles work to improve air quality.

- Electrons
- Highly reactive components
- Water particles

5 to 30 cm
5 to 20 cm
(Note: 1 cm (nanometer) is a billionth of a meter.)

Elevator interior deodorizing test

About ionized particles

The ionized particles released into the air come into contact with odor molecules and the OH radicals break down substances that cause odor. Also, the ionized particles come into contact with allergens (pollen and mites), bacteria, and viruses, and the OH radicals denature their protein and suppress them.


Note: The ion generator is not available in the following cases:
1. When the car internal depth is 1,250 mm or less.
2. When the ceiling is supplied by the customer.

Improved riding comfort

Measures such as control to suppress motor vibration and vibration-absorbing type guide shoes are utilized. These reduce noise and vibration when the elevator is in motion for a smooth and quiet ride.

Safety & Emergency

Door signal with multi-beam door sensor

The multi-beam door sensor is backed by a door signal that notifies passengers when the door is starting to close.

- Automatic rescue device for power failure

When a power failure is detected, the drive power supply switches over to battery power, and the elevator automatically moves to the nearest floor and releases the passengers for safety. This lessens the worry of being trapped in the elevator that has stopped due to a power outage in a building with no private generator equipment.

Induction loop for hearing devices

This function allows passengers with impaired hearing to use the elevator with confidence. If it is necessary to use the intercom in the elevator to communicate with people at other locations in an emergency, the passenger can select the "Telecoil mode" on their hearing aid or cochlear implant to have the audio signal from the intercom conveyed to them directly. The induction loop for hearing devices is an auxiliary device of the intercom that outputs audio signals magnetically, separately from the usual audio output. Operating panel equipped with this function bears the "Induction loop" symbol.

- Operating panel with induction loop for hearing devices

Note: Illustration shows simulated view of beams.

Note: Induction loop for hearing devices is used in combination with EN81-20/50.
Ceiling designs (Silkscreen print)

By applying silk screening to the ceilings of SL-11 and DX-101, Hitachi ceiling designs coordinate your elevator with the building decor.

**SL-11**
- SL-11-Oriental mosaic
- SL-11-Cube
- SL-11-Kaleidoscope

**DX-101**
- DX-101-Lattice
- DX-101-Geometric star
- DX-101-Arabesque

* These ceilings are not compliant with EN81-20/50, but they can be used if the customer agrees.

Button designs

A wide range of buttons harmonizes with various building designs.

- **High-contrast plastic buttons**
  - High-contrast and raised characters make numbers more legible.
  - Button surfaces are rounded to make it easier to wipe them clean.

- **Stainless steel buttons**
  - Various stainless steel buttons are available.

- **Interphone button**
  - Designed for easy use in an emergency.

In-car LCD indicator

The LCD indicator makes it easy to find necessary information.

An in-car indicator with an 8.4-inch color LCD is available. The LCD with wide angle improves visibility. It displays indications of the operating status, such as earthquake emergency operation, to the user.

**Normal**
- Next floor
- Overload
- Door opening

**Emergency**
- Earthquake
- Fire emergency

Hall LCD indicator

The hall LCD indicator displays abundant information in the hall.

A hall indicator with a 6.2-inch color LCD is available. Like the in-car LCD indicator, it displays indications of the operating status.

**Earthquake**
- Out of service

* Display indications regarding operation during earthquakes, etc., require that the corresponding functions be installed.
Recommended designs

Car designs

Choose from a wide range of design options to create an elevator look that matches your building.

Recommended designs

<table>
<thead>
<tr>
<th>Stylish design</th>
<th>Chic design</th>
<th>Simple design</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Office</td>
<td>• Residence</td>
<td>• Transport</td>
</tr>
<tr>
<td>• Commercial building</td>
<td>• Hotel</td>
<td>• Hospital</td>
</tr>
</tbody>
</table>

Stylish design

- Choose from a wide range of design options to create an elevator look that matches your building.

Chic design

- Simple design

Simple design

- Recommended designs
- Samples of designs created by a designer.

- Ceiling: SL-series (SL-11-Oriental mosaic) *1
  - 3 side walls: Decorated steel (Craft wood)
  - Car door: Decorated steel (Craft wood)

- Ceiling: DX-series (DX-101-Geometric star)*1
  - 3 side walls: Decorated steel (Minamo white)
  - Car door: Decorated steel (Minamo white)

- Ceiling: Standard (BS-11)*1
  - 3 side walls: Stainless steel hairline
  - Car door: Stainless steel hairline

- Ceiling: Standard (BS-11)*1
  - 3 side walls: Decorated steel (Minamo white)
  - Car door: Decorated steel (Minamo white)

- Ceiling: DX-series (DX-11)
  - 3 side walls: Laminated paper sheet (Sandy salmon)*1
  - Car door: Stainless steel hairline

- Ceiling: Standard (BS-11)*1
  - 3 side walls: Stainless steel hairline
  - Car door: Stainless steel hairline

*1 These ceilings and LPS are not compliant with EN81-20/50, but they can be used if the customer agrees.

Note: Illustrations show simulated views of elevator interiors. Actual illuminance brightness and colors may differ.

Stylish design (for office)

- Ceiling: SL-series (SL-11-Oriental mosaic) *1
  - 3 side walls: Decorated steel (Craft wood)
  - Car door: Decorated steel (Craft wood)

- Ceiling: Standard (BS-11)*1
  - 3 side walls: Stainless steel hairline
  - Car door: Stainless steel hairline

- Ceiling: DX-series (DX-11)
  - 3 side walls: Laminated paper sheet (Sandy salmon)*1
  - Car door: Stainless steel hairline

- Ceiling: Standard (BS-11)*1
  - 3 side walls: Stainless steel hairline
  - Car door: Stainless steel hairline

*1 The ceiling is not compliant with EN81-20/50, but it can be used if the customer agrees.
**Recommended designs**

**Stylish design (for commercial building)**

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>DX-series (DX-101) Geometric calm</td>
</tr>
<tr>
<td>3 side walls</td>
<td>Decorated steel (Minamo white)</td>
</tr>
<tr>
<td>Car door</td>
<td>Decorated steel (Minamo white)</td>
</tr>
<tr>
<td>Front return panel/Transom</td>
<td>Stainless steel non-directional hairline</td>
</tr>
<tr>
<td>Floor</td>
<td>Vinyl tile (S 442M)</td>
</tr>
<tr>
<td>Indicator</td>
<td>LCD (8.4-inches)</td>
</tr>
<tr>
<td>Car operating panel</td>
<td>Stainless steel non-directional hairline</td>
</tr>
</tbody>
</table>

*Note: Illustrations show simulated views of elevator interiors. Actual illumination brightness and colors may differ.*

1. The ceiling is not compliant with EN81-20/50, but it can be used if the customer agrees.

**Chic design (for residential building)**

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>SL-series (SL-12)</td>
</tr>
<tr>
<td>3 side walls</td>
<td>Decorated steel (Mocha wood)</td>
</tr>
<tr>
<td>Car door</td>
<td>Decorated steel (Mocha wood)</td>
</tr>
<tr>
<td>Front return panel/Transom</td>
<td>Stainless steel non-directional hairline</td>
</tr>
<tr>
<td>Floor</td>
<td>Vinyl tile (S 673M)</td>
</tr>
<tr>
<td>Indicator</td>
<td>LCD (8.4-inches)</td>
</tr>
<tr>
<td>Car operating panel</td>
<td>Stainless steel non-directional hairline</td>
</tr>
</tbody>
</table>

**Chic design (for hotel)**

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>DX-series (DX-11)</td>
</tr>
<tr>
<td>3 side walls</td>
<td>Laminated plastic sheet (Sandy sakura)*</td>
</tr>
<tr>
<td>Car door</td>
<td>Stainless steel hairline</td>
</tr>
<tr>
<td>Front return panel/Transom</td>
<td>Stainless steel hairline</td>
</tr>
<tr>
<td>Floor</td>
<td>Vinyl tile (S 660M)</td>
</tr>
<tr>
<td>Indicator</td>
<td>LCD (8.4-inches)</td>
</tr>
<tr>
<td>Car operating panel</td>
<td>Stainless steel hairline</td>
</tr>
</tbody>
</table>

*Note: Illustrations show simulated views of elevator interiors. Actual illumination brightness and colors may differ.*

1. The UPS is not compliant with EN81-20/50, but it can be used if the customer agrees.
Simple design (for transport facility)

- Jamb: Stainless steel hairline
- Hall door: Stainless steel hairline
- Indicator: Dot matrix

Simple design (for hospital)

- Jamb: Stainless steel hairline
- Hall door: Stainless steel hairline
- Indicator: Dot matrix

Note: Illustrations show simulated views of elevator interiors. Actual illumination brightness and colors may differ.

*1 The ceiling is not compliant with EN81-20/50, but it can be used if the customer agrees.

Specifications

- Ceiling
- 3 side walls
- Car door
- Front side panel/Transom
- Floor
- Car operating panel

Design variations

- Standard
- Simple design (for transport facility)
- Simple design (for hospital)
- Option

- Hall designs

- AS-1X (2PCO)
  - Jamb: Stainless steel hairline
  - Hall door: Stainless steel hairline
  - Indicator: Dot matrix

- SS-1X (2PCO)
  - Jamb: Stainless steel hairline
  - Hall door: Stainless steel hairline
  - Indicator: Dot matrix

- TS-1X (2PCO)
  - Jamb: Stainless steel hairline
  - Hall door: Stainless steel hairline
  - Indicator: Dot matrix

- SL-2X (2PCO)
  - Jamb: Stainless steel hairline
  - Hall door: Stainless steel hairline
  - Indicator: LCD

- TL-2X (2PCO)
  - Jamb: Stainless steel hairline
  - Hall door: Stainless steel hairline
  - Indicator: LCD

Note: Illustrations show simulated views of elevator interiors. Actual illumination brightness and colors may differ.
Ceilings and Handrails

Ceilings

Standard

- **BS-11**
  - Center: Milky white acrylic
  - Surrounding: Decorated steel (White)

Select

- **SL-11**
  - Entire surface: Milky white acrylic
  - Surrounding: Extruded aluminum

- **SL-12**
  - Entire surface: Painted steel (White)
  - Illumination slits: Painted steel (Black)
  - Surrounding: Extruded aluminum

Variations of SL-11

- **Silkscreen print**

- **Options**

Deluxe

- **DX-101**
  - Center: Painted steel (White)
  - Both sides: Milky white acrylic
  - Surrounding: Extruded aluminum

- **DX-11**
  - Center: Painted steel (White) / Indirect lighting
  - Both sides: Painted steel (White) / Down light
  - Surrounding: Extruded aluminum

Variations of DX-101

- **Silkscreen print**

- **Options**

Handrails

- **Round pipe type** (stainless steel hairline)
  - Diameter: 50 mm

- **Flat type** (stainless steel hairline)
  - Width: 90 mm

- **Flat type** (aluminum)

Note: Illustrations show simulated views of handrail designs. Actual illumination brightness and colors may differ.

Note: It is also possible to use ceiling materials supplied and installed by the customer.

Note: Depending on applicable regulations, car top emergency trap door may be required.

*1: The ceiling is not compliant with EN81-20/50, but it can be used if the customer agrees.

*2: For some car sizes, there are two milky white acrylic options.
### Operating panels and indicators

#### Car operating panels

**Stainless steel cover plate**
- Indicator type (Dot-matrix) (LCD)
- Car position indicators (LCD)

**Horizontal operating panels**
- Stainless steel cover plate
  - Without indicator
  - With indicator (for wheelchair use)

**Car button types**
- Plastic
  - P14F-UL
- Stainless steel hairline
  - UB15R-2
  - UB15S-2
  - UB15R-4
  - UB15S-4

**Hall operating panels**
- Stainless steel cover plate
  - Incorporate (Dot-matrix)
  - Incorporate (LCD)

**Horizontal indicators**
- Stainless steel cover plate
  - Dot-matrix

**Hall lanterns**
- Stainless steel cover plate
  - Square lanterns (LED)
  - Round lanterns (LED)

**Hall button types**
- Plastic
- Stainless steel hairline

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*1 Illumination colors are only applicable for stainless steel hairline buttons.

*2 Only circular interphone buttons are available. Other specifications (illumination color, Braille, etc.) of the interphone button change according to the floor button. Please consult Hitachi or a local agent if other specifications are required.

*3 The LCD backlight can be changed to black or blue. (Standard color: White)

*4 Stainless steel non-directional hairline cover is available. (Option)

*5 The lantern illumination color can be changed to white. (Standard illumination color: Umber)

*6 Illumination colors are only applicable for stainless steel hairline buttons.
**Materials**

### A [Car] Front wall / Transom

**Stainless steel**
- Hairline
- Non-directional hairline
- Mirror

**Stainless steel hairline etching**
- SD-1006
- SD-1010

**Decorated steel**
- Minamo white
- Craft wood
- Mocha wood

### B [Car] Door / 3 side walls

**Stainless steel**
- Hairline
- Non-directional hairline
- Mirror

**Stainless steel hairline etching**
- SD-1006
- SD-1010

**Decorated steel**
- Minamo white
- Craft wood
- Mocha wood

### C [Hall] Jamb / Transom

**Stainless steel**
- Hairline
- Non-directional hairline
- Mirror

### D [Car] Floor

**Vinyl tile**

- S 443M
- S 444M
- S 626M
- S 657M
- S 659M

**Decorated steel**

- SD-1038
- SD-1046

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*Note: It is also possible to use floor materials supplied by the customer.*

*The colors printed in the catalog may differ slightly from the actual colors.*

*1 SUS430 (Standard), SUS304 (Option)*

*2 These LPS are not compliant with EN81-20/50, but they can be used if the customer agrees.

*3 These vinyl tiles are compliant with EN81-20/50.*

*4 These vinyl tiles are not compliant with EN81-20/50, but they can be used if the customer agrees.*
### Car design variations

#### Hall design variations

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Finish/Types</th>
<th>Standard/G</th>
<th>Option/G</th>
<th>Not Applicable/G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>Stainless steel</td>
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<tr>
<td>28</td>
<td>Bed type</td>
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<td>●</td>
<td>○</td>
</tr>
<tr>
<td>29</td>
<td>Bed type</td>
<td>Stainless steel</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>30</td>
<td>Bed type</td>
<td>Stainless steel</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>31</td>
<td>Bed type</td>
<td>Stainless steel</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>32</td>
<td>Bed type</td>
<td>Stainless steel</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
</tbody>
</table>

**Note:**
- Standard: ●
- Option: ○
- Not applicable: ○

*1: Bed type: Available for Thailand, Cambodia, Laos, the Philippines, Vietnam, Malaysia, Indonesia and Saudi Arabia.
*2: Stainless steel and stainless steel hairline are used on all sides.
*3: For this type, stainless steel non-directional hairline is used on all sides.
*4: For this type, the stainless steel hairline is used on all sides.
*5: For this type, the stainless steel hairline is used on all sides.
*6: For this type, the stainless steel hairline is used on all sides.
*7: For this type, the stainless steel hairline is used on all sides.
*8: For this type, the stainless steel hairline is used on all sides.
*9: For this type, the stainless steel hairline is used on all sides.
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*12: For this type, the stainless steel hairline is used on all sides.
*13: For this type, the stainless steel hairline is used on all sides.
*14: For this type, the stainless steel hairline is used on all sides.
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*16: For this type, the stainless steel hairline is used on all sides.
*17: For this type, the stainless steel hairline is used on all sides.
*18: For this type, the stainless steel hairline is used on all sides.
*19: For this type, the stainless steel hairline is used on all sides.
*20: For this type, the stainless steel hairline is used on all sides.
*21: For this type, the stainless steel hairline is used on all sides.
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*24: For this type, the stainless steel hairline is used on all sides.
*25: For this type, the stainless steel hairline is used on all sides.
*26: For this type, the stainless steel hairline is used on all sides.
*27: For this type, the stainless steel hairline is used on all sides.
*28: For this type, the stainless steel hairline is used on all sides.
*29: For this type, the stainless steel hairline is used on all sides.
*30: For this type, the stainless steel hairline is used on all sides.
*31: For this type, the stainless steel hairline is used on all sides.
*32: For this type, the stainless steel hairline is used on all sides.

---

**Legend:**
- ○: Standard
- ●: Option
- ○: Not applicable
### Functions

#### Service functions

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Automatic return function</td>
<td>After all the calls have been served, the elevator will return to the stand by floor.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>Attendant operation</td>
<td>For this system, the stop floor is manually set by an attendant, such as in a department store.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>3</td>
<td>Independent operation</td>
<td>This operation system is used when there is a need to serve special passengers. Other hall calls are disabled for the elevator and is reserved for exclusive use of the special passengers.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>4</td>
<td>Parking operation</td>
<td>The elevator can be parked at the parking floor by a key switch.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>5</td>
<td>Rush-hour schedule operation</td>
<td>The elevator will automatically return to the stand by floor, after the last call during this period.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>6</td>
<td>Separated simplex operation</td>
<td>When simplex collective or group control is used, a selector switch on the control panel is used to switch between parallel operation and independent operation.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>7</td>
<td>Interspeech system</td>
<td>An interspeech system is provided for communication between the elevator and the master unit in the supervisory panel.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>8</td>
<td>Floor lock-out system</td>
<td>Specific service floors can be locked out by activating a switch.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>9</td>
<td>Temporary call registration</td>
<td>By inputting a pre-programmed code using the car operating panel, passengers can gain access to certain restricted floors.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>10</td>
<td>Door nudging operation</td>
<td>When the door has been open for a certain period of time, a buzzer sounds and the doors slowly close.</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>

#### Security functions

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intelligent operation security system by card reader (by others)</td>
<td>This function controls access to certain floors by means of IC cards.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>CCTV (Camera by others, coaxial cable by Hitachi)</td>
<td>This system monitors to monitor inside the elevator car.</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>

#### Information functions

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IC auto announcement (English / Thai / Mandarin / Cantonese / Portuguese)</td>
<td>A speaker for background music and public announcements for the building. The system enables the security personnel to monitor inside the elevator car.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>Public address speaker</td>
<td>A speaker for background music and public announcements for the building.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>3</td>
<td>Arrival audio signal</td>
<td>An electrical chime sounded at the top and bottom of the elevator will sound (sirens).</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>

#### Energy-saving functions

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regenerative system</td>
<td>When traveling downhill with a heavy car load or upwards with a light car load, the traction machine acts as a power generator to transmit power back to the electrical network in the building.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>Automatic turn-off of elevator light and fan</td>
<td>This function is designed to save energy when the elevator is not in use.</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>

#### User services

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Door open time adjustment</td>
<td>The duration of the door opening time is tailored to usage conditions, substantially improving operational efficiency.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>Door open prolong button</td>
<td>In the event that the button on the car operation board is pressed, the elevator doors remain open for a pre-set period of time.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>3</td>
<td>Automatic bypass operation</td>
<td>In the event that the elevator is fully loaded, this operation will not respond to any hall calls and will only respond to the car calls.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>4</td>
<td>Mischievous call cancellation</td>
<td>In the event that a large number of calls is registered by a small number of passengers, the calls are determined to be mischievous and will be automatically cancelled upon responding to the next call.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>5</td>
<td>Floor &quot;deselict&quot; function</td>
<td>The function allows passengers to cancel the selection of a floor which is accidentally pressed by pressing the button again. (This eliminates unnecessary stops.)</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>6</td>
<td>Supervisory panel</td>
<td>This panel provides various supervisory operations, including communication and status monitoring.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>7</td>
<td>Elevator monitoring system (EMS)</td>
<td>This system monitors the real-time situation of the elevators such as the elevator position, movement direction and abnormal operation on the PC (Personal Computer) display. It is also possible to turn on/off the elevators and change the service floors of the elevators using the PC.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>8</td>
<td>Ion generator</td>
<td>A device that generates ionized micro-particles enclosed in water is mounted on top of the car to ensure pleasant air quality inside the elevator.</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>

#### Accessibility

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Car floor button flashing</td>
<td>The registered car destination floor button flashes when the car approaches the floor.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>2</td>
<td>Braille plate</td>
<td>Braille plates are fixed next to the operation buttons in the car and hall.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>3</td>
<td>Sound button</td>
<td>An electronic tone sounds when the buttons are pressed to confirm call registration.</td>
<td>✔/ ✔/ ✔</td>
</tr>
<tr>
<td>4</td>
<td>Induction loop for hearing devices</td>
<td>This function allows a passenger to select the &quot;tinkle mode&quot; on their hearing aid or co-axial implant to communicate with people at other locations via the intercom in an emergency. It converts the audio signal from the intercom directly to the passenger’s hearing aid or co-axial implant.</td>
<td>✔/ ✔/ ✔</td>
</tr>
</tbody>
</table>
### Functions

**Emergency operations**

1. **Earthquake emergency operation**
   - Description: In the event that an earthquake is detected, the elevator will stop at the nearest floor.
   - Standard: Yes
   - Option: Yes

2. **Fire emergency operation**
   - Description: In the event of fire, the elevator is automatically brought to the designated floor where it remains inoperative for passengers’ safety.
   - Standard: Yes
   - Option: Yes

3. **Automatic rescue device for power failure**
   - Description: In the event of power failure, this system automatically switches to battery power to bring the elevator to the nearest floor.
   - Standard: Yes
   - Option: Yes

4. **Emergency operation for power failure**
   - Description: In the event of building power failure, the elevator can be operated by the building standby generator to move the elevator to the designated floor (Automatic / Automatic and manual).
   - Standard: Yes
   - Option: Yes

5. **Fireman operation**
   - Description: In the event that the fireman switch is turned on, the elevator returns to the designated floor and will be ready for firemen’s use.
   - Standard: Yes
   - Option: Yes

**Other functions**

1. **Counterweight safety**
   - Description: A safety device is installed on the counterweight to maintain the rails and prevent falling.
   - Standard: Yes
   - Option: Yes

2. **Over voltage detection device**
   - Description: When an abnormal increase in power supply voltage to the elevator system is detected, the power supply will be cut off to prevent damage to the elevator equipment.
   - Standard: Yes
   - Option: Yes

3. **Maintenance operation**
   - Description: Elevator operates at lower speed during maintenance.
   - Standard: Yes
   - Option: Yes

4. **Overload detection system**
   - Description: In the event of overloading, this system will activate an audio/visual signal to prevent the elevator from moving.
   - Standard: Yes
   - Option: Yes

5. **Nearest landing door operation**
   - Description: In the unlikely event of temporary trouble during operation, the elevator automatically goes to the nearest floor at a low speed and doors will open to prevent passengers from being trapped inside.
   - Standard: Yes
   - Option: Yes

6. **Hook for protection sheet**
   - Description: The 3 side walls are equipped with hooks to facilitate mounting of protective mats.
   - Standard: Yes
   - Option: Yes

7. **Sub-operating panel**
   - Description: Additional floor selection and door open/close buttons are located on the side opposite the main operating panel.
   - Standard: Yes
   - Option: Yes

8. **Fire rated door**
   - Description: 2 hours fire rated landing doors are available where required.
   - Standard: Yes
   - Option: Yes

9. **Emergency landing door**
   - Description: If there is a long distance between floors, doors are installed in a location where the elevator can stop automatically in an emergency.
   - Standard: Yes
   - Option: Yes

10. **Switch for emergency exit**
    - Description: A switch stops the elevator when the emergency exit door is opened.
    - Standard: Yes
    - Option: Yes

11. **Painted equipment inside hoistway**
    - Description: Equipment in the hoistway is painted black.
    - Standard: Yes
    - Option: Yes

12. **Electromagnetic compatibility (EMC)**
    - Description: Electromagnetic compatibility function in response to EN81-20/50 regulation, etc.
    - Standard: Yes
    - Option: Yes

13. **Interfacing to building management system**
    - Description: This interfacing shall be done by means of electrical dry contact with the building management system for their monitoring.
    - Standard: Yes
    - Option: Yes

---

*1: Bed type: Available for Thailand, Myanmar, Cambodia, Laos, the Philippines, Vietnam, Macau, Indonesia and Saudi Arabia.

*2: Fire rated door is provided as a standard specification when it is required by regulations.
Dimensions

SL-2X (2PCO) Option

TL-2X (2PCO)

Note: [ ] : With fire rated door

Building structure (by other contractors)
Wall and floor finishing (by other contractors)
Grouting (by other contractors)
Work to be done by building contractors

The preparatory work for elevator installation outlined in the table below should be undertaken by building contractors in accordance with Hitachi drawings and in compliance with local or relevant codes and regulations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prepare hoistway with proper framing and enclosure, suitable pit of proper depth with drains and water-proofing if required, and properly lit and ventilated hoistway of adequate size with concrete floors, access doors, ladders and guards as required.</td>
</tr>
<tr>
<td>2</td>
<td>Provide and/or cut all necessary holes, chases, openings and finishes after equipment installation.</td>
</tr>
<tr>
<td>3</td>
<td>Supply and secure all supports, reinforced concrete slabs, etc., necessary for installation of the machinery, doors, buffers, etc.</td>
</tr>
<tr>
<td>4</td>
<td>Furnish all necessary cement and/or concrete for grouting of brackets, bolts, machine beams, etc.</td>
</tr>
<tr>
<td>5</td>
<td>Prepare and erect suitable scaffolding and protective measures during work in progress.</td>
</tr>
<tr>
<td>6</td>
<td>Furnish mains for three-phase electric power and single-phase lighting supply for car lighting and lift pit and power outlet to the hoistway, following the instructions of the elevator contractor on outlet position and wire size.</td>
</tr>
<tr>
<td>7</td>
<td>Provide, free of charge, a suitable theft-proof storage area for materials and tools during erection work.</td>
</tr>
<tr>
<td>8</td>
<td>Supply electric power for lighting of work area, installation work, elevator testing and spray painting.</td>
</tr>
<tr>
<td>9</td>
<td>Hoisting hook at top of the hoistway.</td>
</tr>
<tr>
<td>10</td>
<td>Hoistway ventilation to be provided to maintain the hoistway temperature at below 40°C.</td>
</tr>
<tr>
<td>11</td>
<td>Manufacture and installation of separating beam (if necessary).</td>
</tr>
</tbody>
</table>

Hitachi Eco-Achievement

Hitachi’s elevators achieved the highest energy efficiency class rating.

ISO 25745 is an international standard for evaluating the energy consumption and classifying the energy efficiency of elevators and escalators. ISO 25745 applies to the energy efficiency of elevators. It establishes seven classes, from A to G, with class A representing the highest level of energy efficiency.

Hitachi’s UAG-SN1 and OUG-ON1 have achieved the highest rating.

Environmental activities

The Hitachi Group is engaged in environmental initiatives at its factories and offices. Siam Hitachi Elevator Co., Ltd. (Thailand) is working to combat global warming by reducing energy consumption. Lighting in their production facilities areas has been switched to LED lighting, and they have reduced electricity consumption of lighting by approximately 70%.*

* Assuming the lighting fixtures (approximately 250 fixtures) are used under the same conditions.

Our achievement and future

The world’s fastest elevator

Hitachi’s elevator, which was delivered to Guangzhou CTF Finance Centre, a skyscraper complex building in Guangzhou, China, started operation with the speed of 1,260 m/min, the world’s fastest among all elevators operating today. The elevators feature technologies that support safe and comfortable operation, in addition to the drive and control technologies needed to attain the Ultrahigh-Speeds. Hitachi will utilize this achievement for future product development, and strive to offer elevators with higher running quality as well as safety and comfort.

* According to Hitachi’s research as of September 2019

Drive and control technologies to attain Ultrahigh-Speed of 1,260 m/min.

Hitachi has developed a permanent magnet synchronous motor that achieves both a thin profile and the high output needed to attain a speed of 1,260 m/min.

Safety features supporting Ultrahigh-Speed elevator operation

Hitachi developed brake equipment using braking materials with outstanding heat resistance to safely stop the elevator car in the unlikely event that a malfunction is detected during Ultrahigh-Speed operation.

Elevators can be used comfortably with safety even over long travel.

Active guide rollers that detect minute warping in the guide rails and lateral vibration due to wind pressure are installed in the four corners (top and bottom, left and right) of the elevator car. This gives passengers a comfortable ride even during high-speed operation.

The sensation of ear blockage is reduced by Hitachi’s proprietary air pressure adjustment technology, which reduces the changes in air pressure inside the elevator car that would otherwise be caused by vertical movement through long travel.

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* According to Hitachi’s research as of September 2019

Model | UAG-SN1 | OUG-ON1 | UAG-SN1 | OUG-ON1 |
--- | --- | --- | --- | --- |
Model | UAG-SN1 | OUG-ON1 | UAG-SN1 | OUG-ON1 |
Location | Japan | Japan | Japan | Japan |
Rated load | 1,050 kg | 1,635 kg | 1,050 kg | 1,635 kg |
Rated speed | 1.75m/s (105m/min.) | 1.75m/s (105m/min.) | 1.75m/s (105m/min.) | 1.75m/s (105m/min.) |
No. of stops | 4 | 4 | 4 | 4 |
Travel | 19.5 m | 19.5 m | 19.5 m | 19.5 m |
Operating days per year | 365 | 365 | 365 | 365 |
Annual energy consumption | 4,184 kWh | 4,633 kWh | 4,184 kWh | 4,633 kWh |
Usage category | 6 | 6 | 6 | 6 |
Classification of lift [A-G] | A | A | A | A |
Note: The measured class differs depending on the usage conditions.

Hitachi developed brake equipment using braking materials with outstanding heat resistance to safely stop the elevator car in the unlikely event that a malfunction is detected during Ultrahigh-Speed operation.

Elevators can be used comfortably with safety even over long travel.

Active guide rollers that detect minute warping in the guide rails and lateral vibration due to wind pressure are installed in the four corners (top and bottom, left and right) of the elevator car. This gives passengers a comfortable ride even during high-speed operation.

The sensation of ear blockage is reduced by Hitachi’s proprietary air pressure adjustment technology, which reduces the changes in air pressure inside the elevator car that would otherwise be caused by vertical movement through long travel.
Hitachi’s social innovation business

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, is focusing on Social Innovation Business combining its operational technology, information technology and products. Hitachi delivers digital solutions utilizing Lumada in five sectors including Mobility, Smart Life, Industry, Energy and IT, to increase our customer’s social, environmental and economic value.

Research and development

Modern manufacturing plants in Thailand and Singapore supply valuable products to customers. Equipment is made to the highest standards of quality and reliability on cutting-edge production lines.

Excellence and flexibility in design at manufacturing plants in Thailand and Singapore

The modern manufacturing plant in Thailand and Singapore boasts a complete team of local and Japanese engineers and is geared towards providing maximum flexibility in design and manufacturing to suit customer requirements.

High accuracy and efficiency in planning of equipment layout is made possible by the most advanced CAD systems. Equipment is made to the highest standards of quality and reliability with modern CNC machinery.

An integrated engineering system from development to design and production

Head office, research centers, and plants work closely together to develop new technologies.

Staff throughout the company work together as one team to conduct research and develop technologies.

High performance simulator enhances overall elevator system efficiency.

A high-performance simulator is utilized for all stages of elevator development, from planning through system design.

Planning, research and development are carried out according to the results of this statistical analysis.

Cutting-edge CAD/CAM systems

The latest in CAD/CAM systems help us carry out elevator layout and various other design and production steps more quickly and efficiently.
MACHINE ROOM-LESS ELEVATOR
Model UAG Series SN1
PLANNING INFORMATION

Electrical information

Wiring Diagram shows the works to be done by building.

Building Management Office
Master Interphone

Distribution Board Main Panel

Lighting Power Supply
Main Power Supply
Earthling

Hallway

Pit Inspection Area

Inspection Area (Overhead)

Cage Lights & Fans
Cage Telephone

Lightings and Power outlets from building

Work to be provided by building

<table>
<thead>
<tr>
<th>Item</th>
<th>Works to be provided by building</th>
</tr>
</thead>
</table>
| Main power supply
distributed single phase 200 to 480/380V single phase 200 to 480/380V | To provide AC 3 phase 200 to 480V/50kHz main power supply with maintaining to ensure that the power supply does not fluctuate outside the range of ±10% to ±15% of the normal voltage rating and to ensure that the unbalance factor of voltage does not exceed 5%. |
| Lighting power supply
distributed single phase 200 to 480/380V | To supply and install AC single-phase 200 to 480V lighting power supply for car lighting, EBOPS, and maintenance work. |
| Interphone                  | To provide piping and wiring (12 wires of 0.5mm2) for interphone located outside the hallways. |
| Pit, hoistway lightings & power outlets | To supply and install AC single-phase power outlet and lighting with switch located at accessible area from the entrance to the bottom landing level for maintenance purpose. Arrange necessary to comply with local code & regulation. |

Note: As the works that involve the installation of equipment at the site are the responsibility of the installer, we request the installer to comply with the operation and maintenance manual. Any other special requirements or conditions should be passed on to the installer.

Memo

---

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### Based on Hitachi standard for bed

<table>
<thead>
<tr>
<th>No.</th>
<th>Load (kg)</th>
<th>Patient Rated speed (m/min)</th>
<th>Door type</th>
<th>Door SP width [mm]</th>
<th>Car interval A x B [mm]</th>
<th>Static load Z x Y [mm]</th>
<th>Location (mm)</th>
<th>Car side</th>
<th>Car reaction loading [kN]</th>
<th>Counterweight side</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>1.000</td>
<td>350P</td>
<td>120</td>
<td>100</td>
<td>600</td>
<td>700</td>
<td>650</td>
<td>3.5</td>
<td>7.68</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>1.000</td>
<td>350P</td>
<td>120</td>
<td>100</td>
<td>600</td>
<td>700</td>
<td>650</td>
<td>3.5</td>
<td>7.68</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>1.000</td>
<td>350P</td>
<td>120</td>
<td>100</td>
<td>600</td>
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</tbody>
</table>

**Note:** Above table shows the dimensions on the following conditions:<br>
1. With the rated door<br>2. With the rated wheel<br>3. Travel distance ≤ 60m

Please consult Hitachi or local agents if other specifications are required.

### Based on Malaysian regulations

<table>
<thead>
<tr>
<th>No.</th>
<th>Load (kg)</th>
<th>Patient Rated speed (m/min)</th>
<th>Door type</th>
<th>Door SP width [mm]</th>
<th>Car interval A x B [mm]</th>
<th>Static load Z x Y [mm]</th>
<th>Location (mm)</th>
<th>Car side</th>
<th>Car reaction loading [kN]</th>
<th>Counterweight side</th>
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</thead>
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</table>

**Note:** Above table shows the dimensions on the following conditions:<br>
1. With the rated door<br>2. With the rated wheel<br>3. Travel distance ≤ 60m

Please consult Hitachi or local agents if other specifications are required.
## Dimension of Hoistway and Pit Reaction Loading

### Dimension and reaction loading of hoistway

### Hoistway section

#### Based on Hitachi standard for India

<table>
<thead>
<tr>
<th>No.</th>
<th>Load (kg)</th>
<th>Rated speed [m/min]</th>
<th>Door R P [mm]</th>
<th>Car Internal A x B [mm]</th>
<th>Location (mm)</th>
<th>Pit reaction loading [kN]</th>
<th>Counterweight side</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.75</td>
<td>990</td>
<td>1000 x 2000</td>
<td>1.70</td>
<td>12.3</td>
<td>15.0</td>
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<tr>
<td>12</td>
<td>1000</td>
<td>0.75</td>
<td>990</td>
<td>1000 x 2000</td>
<td>1.70</td>
<td>12.3</td>
<td>15.0</td>
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<td>990</td>
<td>1000 x 2000</td>
<td>1.70</td>
<td>12.3</td>
<td>15.0</td>
</tr>
</tbody>
</table>

#### Overhead Height and Pit Depth

- **Plan B:** Power outlet [alternative]
  - Power supply: 3 phase, 200-400V, 50/60Hz ± 1 circuit
  - Wiring length from hoistway: 6500mm
  - In case of not applying PLAN A:
    - Dust length from hoistway: 50mm
    - Dust length from hoistway: 50mm
    - Wiring length from hoistway: 7500mm

- **Plan A:** Power outlet [standard]
  - Power supply: 3 phase, 200-400V, 50/60Hz ± 1 circuit
  - Wiring length from hoistway: 7500mm

### Dimensions for overhead height, pit depth and other specifications

#### Dimensions for overhead height, pit depth and other specifications

- **Rated speed [m/min]**
- **Standard overhead height: 90° ± 10° [mm]**
- ** Malaysan regulations**
- ** Hitachi standard for India**

#### Minimum pit depth: P [mm]

<table>
<thead>
<tr>
<th>No.</th>
<th>Rated speed [m/min]</th>
<th>Maximum number of storeys</th>
<th>Maximum travel distance [m]</th>
<th>Minimum floor pitch [mm]</th>
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<td>24</td>
<td>2600</td>
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<tr>
<td>2</td>
<td>0.75 (E)</td>
<td>24</td>
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</table>
Location of hoisting hook and hoisting beam

If the hoistway is made of reinforced concrete, hoisting hooks (installed by other contractors) are required at the top of the hoistway. If the hoistway is a steel structure, hoisting beams (installed by other contractors) are required at the top of the hoistway. The details of the hoisting hook and hoisting beam mounting position are as follows:

① Hoisting hooks

1. Rated Load ≤ 1050kg

![Diagram of hoisting hooks](image)

No. 1 ~ 5: hoisting hook position

2. Rated Load ≥ 1150kg

![Diagram of hoisting hooks](image)

3. Orientation and size of Hoisting Hooks

![Diagram of U-shape orientation](image)

Note: If the hoisting hooks should be oriented such that the U-shape is facing the hoistway ending entrance. Also, the hoisting hook size is required to ensure that the hoisting equipment can fit.

② Hoisting beams

1. Hoisting beams layout (Standard)

![Diagram of hoisting beams layout](image)

Hoisting beams in the direction of car depth

2. Hoisting beams layout (Alternative)

![Diagram of hoisting beams layout](image)

Hoisting beams in the direction of car width

3. Height of Hoisting beams

![Diagram of height of hoisting beams](image)

Notes:
- L ≤ 1400mm: H ≥ 125 × 125 × 6.5 × 9
- 1500mm < L ≤ 3200mm: H ≥ 150 × 150 × 7 × 10
- 3300mm < L ≤ 4800mm: H ≥ 175 × 175 × 7.0 × 11

Beam size

Top floor
## Electrical Data

<table>
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<tr>
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<td>125</td>
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<td>22</td>
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<td>1,100</td>
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<td>0.8</td>
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<td>150</td>
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<td>100</td>
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<td>60</td>
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<td>150</td>
<td>125</td>
<td>100</td>
<td>22</td>
<td>60</td>
</tr>
</tbody>
</table>

Note: Maximum length of feeders is 100m.

- [ ] For India use only.
- [ ] Maximum load in units with 100m feed.
- [ ] For Malaysia use only.
- [ ] Maximum load in units with 150m feed.

### Memo

- UAG-SN1 17
- UAG-SN1 18