

T H E R E A L C O M F O R T



The Real Comfort

Our everlasting ardor for customer satisfaction generates creative new ideas and converts them into novel, viable and innovative elevators.

Most modern technology produces unwanted byproducts in addition to the desired products. Continuously reducing negative environmental side effects is one of our important goals.

SOLON™ COMFORT is real comfort focusing on the customer by improving the environmental performance.



SOLON™ COMFORT

In contemporary building, the presence of the machine rooms for each elevator in a building has become increasingly problematic in the elevator industry.

As building requirements change and progress, SIGMA's technology does the same - meeting new challenges with ongoing innovation.

Designed for buildings between 2 and 15 stories, this system employs the compact and efficient machine to be mounted within the hoistway itself - eliminating the need for a bulky machine room on the roof.

Specification

Capacity	450 ~ 1000kg
Speed	1.0m/s
Rise	Max. 45m
Stops	15
Machine	Gearless machine with PMSM
Control	Simplex, Duplex, Group control (4cars)
Door width	700mm, 800mm, 900mm
Door height	2100mm
Door opening	2 panel center opening
Lighting	Three lighting styles

For the customers

The real comfort comes from a place where our effort to satisfy customers' needs is invested every day.

01

Customer-friendly

SOLON™ COMFORT is the result of technological advances that affect the design of the elevator hoistway and equipment room.

Architectural building design

SIGMA's machine roomless (MRL) elevator allows the building to be free from unsightly construction on the roof and provides more flexibility in building design.

Space savings

The structural design improves the net space of the car in any given hoistway and provides more rental areas within the building.

Construction cost savings

Our MRL solution allows the owner to save on construction work and materials. It also leads to the reduction of the total building cost.

Energy savings

The compact motor design not only uses a lower initial electricity load but it also consumes less energy than a conventional geared system.



02

Safety and Reliability

SIGMA elevator's safety record, that of moving of passengers every day without incident, is unsurpassed by any other vehicle system. This is the result of a very intense quality assurance program that makes fool-proof products from the design stage.

Brake operation

The reliable double drum brake offers excellent brake operation in both the downward and upward moving of elevator without noise and shock.

E&I panel

The Emergency and Inspection (E&I) panel located on the top landing floor provides all of the controls necessary to perform rescue and inspection operations quickly.

SIGMA NeT

Through SIGMA NeT (Elevator monitoring system) which monitors elevator, escalator and movingwalks by internet-based software, our elevator not only provides a comprehensive and easy-to-use interface, but also brings perfect quality to reality.

EMI Test
(Electro Magnetic Interference)



Vibration and Dropping Test



ESD Test
(Electro Static Discharge)



Burst Test



03

Ride comfort

SIGMA provides a "best-in-class" ride quality on every lift that we install.

PM gearless machine

Highly efficient gearless traction systems with permanent magnet synchronous motor (PMSM) provide safe and stable rides with a minimum level of vibration and noise.

Sensitivity test

Customers may experience a robust elevator which has been proven in the door impact test and deflection test in conformity with international standards.

Smooth operation

A high-switching speed of power device in the drive (IGBT) and VVVF control ensure a consistently smooth motion profile which results in a comfortable ride.



PM gearless machine



Slim Shine

Ceiling	• Painted steel sheet (No.LGM-924)
Lighting	• C-SC1
COP	• CBM-22C
Wall	• STS Hairline Etching(EW2-064)
Door	• STS Hairline Etching(EH1-064)
Handrail	• HR-04
Floor	• Deco Tile

Modern Sense

Ceiling	• STS Hairline
Lighting	• C-SC2
COP	• CBM-22C
Wall	• STS Hairline Etching(EW2-067)
Door	• STS Hairline Etching(EH1-067)
Handrail	• HR-04
Floor	• Deco Tile



Front View



Front View

Dandy Look

Ceiling	•	STS Hairline
Lighting	•	C-SC3
COP	•	CBM-22C
Wall	•	STS Hairline Etching(EW2-060)
Door	•	STS Hairline Etching(EH1-060)
Handrail	•	HR-04
Floor	•	Deco Tile

Entrance

It is our duty to seek the most comfortable designs through innovative thinking



Front View



1



2



3

1 Ground floor

- Jamb • Wide Tapered Jamb with Transom Panel in STS Hairline
- Door • STS Hairline Etching (No. EH1-067)
- Sill • Extruded Hard Aluminum
- Hall Indicator • HID-A122
- Hall Button • HBM-R45

2 Other floor

- Jamb • Narrow Jamb in Painted Steel Sheet (No. LGM-922)
- Door • Painted Steel Sheet (No. LGM-922)
- Sill • Extruded Hard Aluminum
- Hall Indicator & Hall Button • VID-M652

3 Top floor

- Jamb • Wide Jamb in STS Hairline
- Door • Painted Steel Sheet (No. LGP-934)
- Landing Cabinet(Controller + E&I Panel) • STS Hairline
- Sill • Extruded Hard Aluminum
- Hall Indicator & Hall Button • VID-M652

Fixtures

- Car Operating Panel
- Hall Button
- Hall Position Indicator
- Handrail

Etching & Colors

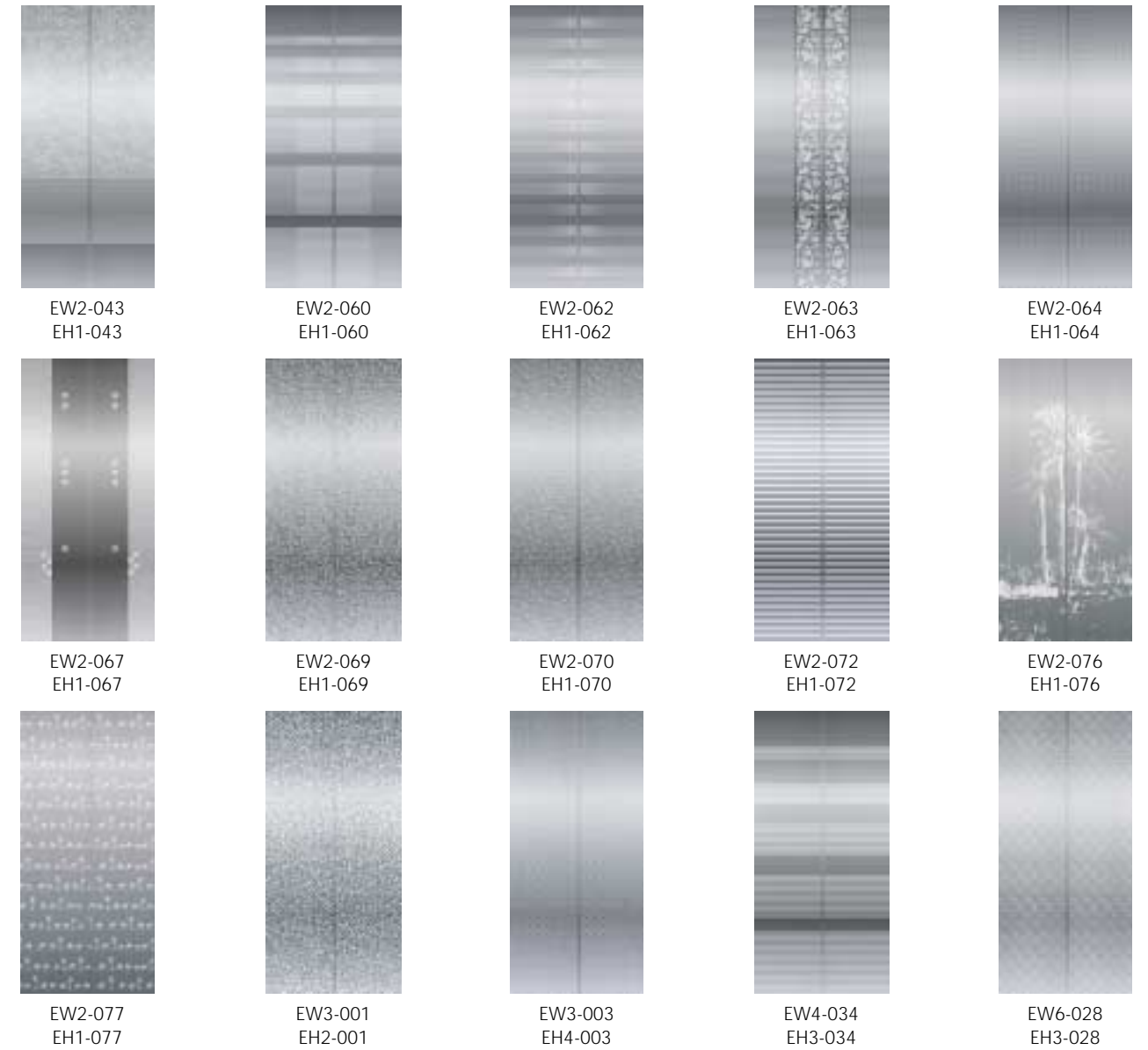
● Car Operating Panel



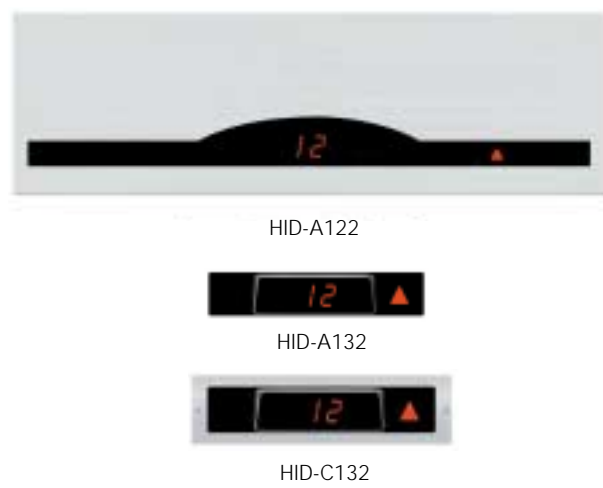
● Hall Button



● Etching Pattern



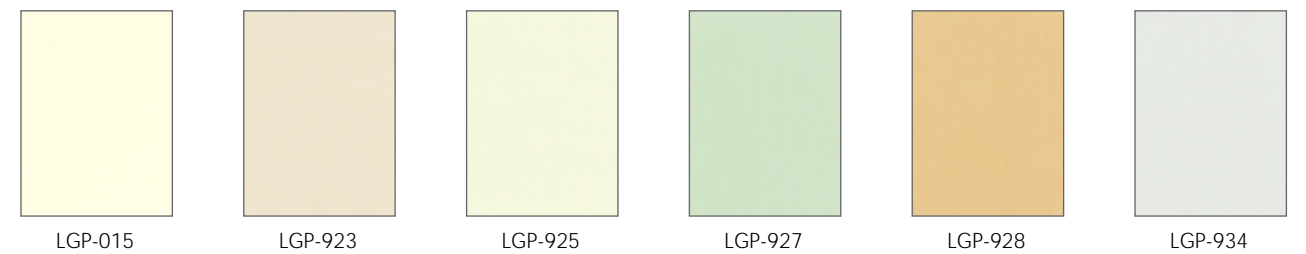
● Hall Position Indicator



● Handrail



● Color



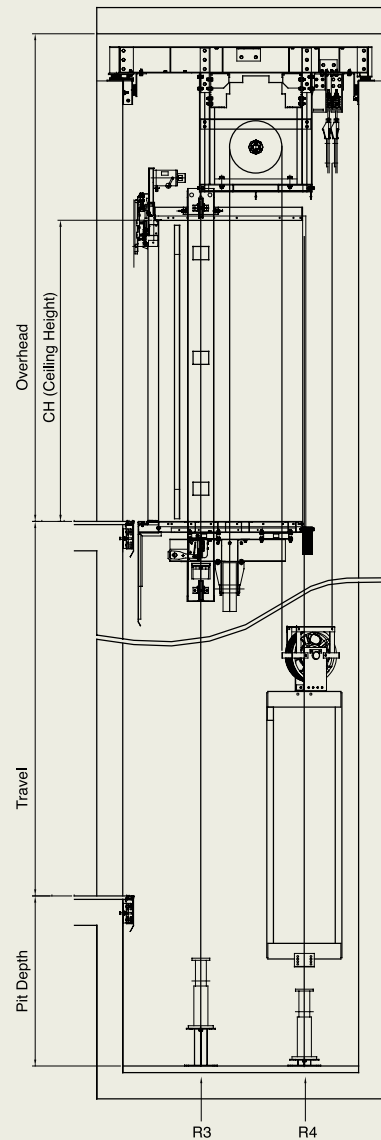
• Actual colors may be different from these prints.

Technical Data

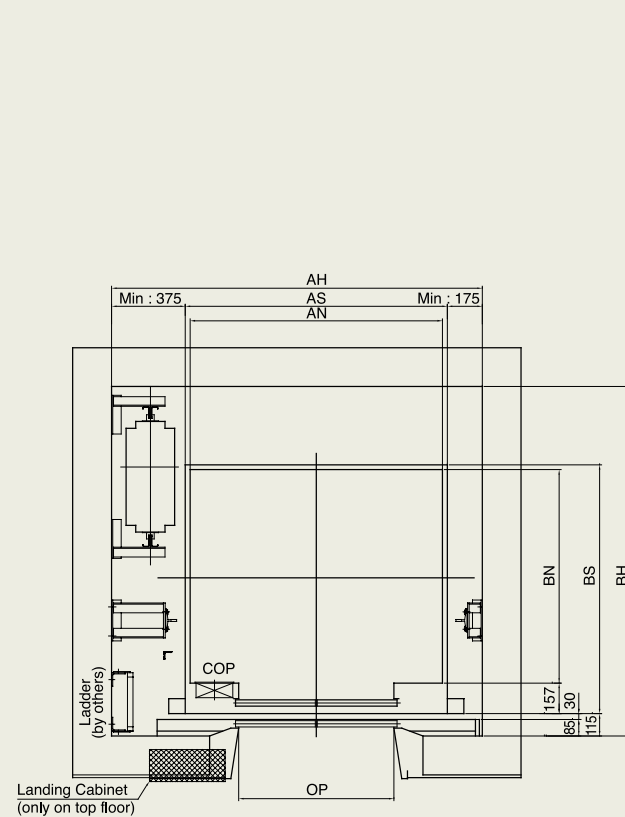
Passenger Elevator Layouts Overhead Height, Pit Depth Dimension

Passenger Elevator Layouts

Hoistway Section



Hoistway Plan (Center Opening)



Overhead Height, Pit Depth

Speed(m/s)	Entrance Height(mm)	Overhead(mm)	Pit Depth(mm)	Type of Buffer
1.0	2100	3550	1150	Poly-Urethane

Standard

(Unit: mm)

Speed (m/s)	Capacity		Opening Type	Entrance Opening (mm)	Car Size		Hoistway Size				Top Beam Reaction Load(kg)				Pit Reaction Load(kg)	
	Persons	Load (kg)			Inside	Outside	Simplex		Duplex		R1	R2	R3	R4	R5	R6
							AN × BN	AS × BS	AH	BH						
1.0	6	450	2 Panel Center Opening	700	1150 × 1080	1200 × 1262	1750	1800	3650	1800	1480	2875	575	685	5298	4399
	8	550		800	1300 × 1100	1350 × 1282	1900	1800	3950	1800	1611	3234	634	756	5819	4719
	9	600		800	1300 × 1180	1350 × 1362	1900	1800	3950	1800	1678	3266	664	792	6085	4885
	10	680		800	1350 × 1280	1400 × 1462	1950	1850	4050	1850	1781	3529	733	845	6572	5172
	11	750		800	1350 × 1350	1400 × 1532	1950	1900	4050	1900	1834	3650	770	867	6805	5305
	13	900		900	1550 × 1350	1600 × 1532	2150	1900	4450	1900	2023	4032	859	968	7784	5984
	15	1000		900	1600 × 1450	1650 × 1632	2200	2000	4550	2000	2197	4221	918	1029	8269	6269

EN Code

(Unit: mm)

Speed (m/s)	Capacity		Opening Type	Entrance Opening (mm)	Car Size		Hoistway Size				Top Beam Reaction Load(kg)				Pit Reaction Load(kg)	
	Persons	Load (kg)			Inside	Outside	Simplex		Duplex		R1	R2	R3	R4	R5	R6
							AN × BN	AS × BS	AH	BH						
1.0	6	450	2 Panel Center Opening	700	1150 × 1080	1200 × 1262	1750	1800	3650	1800	1480	2875	575	685	5298	4399
	7	525		800	1300 × 1100	1350 × 1282	1900	1800	3950	1800	1611	3234	634	756	5819	4719
	8	600		800	1300 × 1180	1350 × 1362	1900	1800	3950	1800	1678	3266	664	792	6085	4885
	9	675		800	1350 × 1280	1400 × 1462	1950	1850	4050	1850	1781	3529	733	845	6572	5172
	10	800		800	1350 × 1350	1400 × 1532	1950	1900	4050	1900	1834	3650	770	867	6805	5305
	12	900		900	1550 × 1350	1600 × 1532	2150	1900	4450	1900	2023	4032	859	968	7784	5984
	13	1000		900	1600 × 1450	1650 × 1632	2200	2000	4550	2000	2197	4221	918	1029	8269	6269

Power Supply Plan

(Main Power : 380V)

Speed (m/s)	Capacity		Motor Capa. (kW)	MCCB Capacity of Building(A)		Power Supply Capacity(kVA)		Lead-in Wire Size(mm ²)		Earth Wire Size(mm ²)		Heat Output (kcal / H)	Starting Power (kVA/set)
	Persons	Load(kg)		Simplex	Duplex	Simplex	Duplex	Simplex	Duplex	Simplex	Duplex		
1.0	6	450	3.7	20	30	5.3	10.6	4	6	4	6	678	7.1
	8	550	3.7	20	30	6.5	12.9	4	6	4	6	830	8.7
	9	600	3.7	20	30	6.9	13.9	4	6	4	6	900	9.3
	10	680	4.6	20	30	7.2	14.4	4	6	4	6	1020	9.6
	11	750	4.6	20	40	7.6	15.2	4	6	4	6	1130	10.1
	13	900	6.2	20	40	8.8	17.7	4	6	4	6	1350	11.9
	15	1000	6.2	30	50	9.7	19.4	4	10	4	6	1500	13.0

● Technical Features

● Standard ○ Option

Features	Description	
Attendant Operation	The operating mode of an elevator can be changed from the normal automatic operation to the attendant service by an attendant switch.	●
Independent Operation Back-up operation	Key switch in the car operating panel will cancel any existing car calls and hold the door open at the landing position. During independent operation, the car will respond only to car calls.	●
Safe Drive Operation	When the electrical transmission device between the hall call and control panel begins to operate in an abnormal condition and it lasts for some time, the elevator control device is converted to back-up operation automatically. Then, the elevator moves in sequence up and down repeatedly from top to bottom floor to service every other floor which is in normal condition.	●
Safe Drive Operation	When a car stops between floors due to mechanical malfunction, it will descend to the nearest floor at a low speed and hold the doors open after checking all safety measures.	●
Car Call Cancellation	Allows cancellation of an incorrectly registered car call. For example, if you press the button for the wrong floor, you can cancel by pressing the same floor button again.	●
Automatic Turn-Off of Car Light & Fan	Car illumination and fan are turned off automatically in case there is no hall call or car call; this saves energy.	●
Automatic Bypass	A fully-loaded car (More than 80% of rated load) bypasses hall calls in order to maintain maximum operational efficiency.	●
Overload Holding Stop (110% of rated load)	When the number of passengers exceeds the normal capacity, a buzzer sounds and the elevator remains stopped at that floor. When the excessive number of passengers disembark, the buzzer stops, the elevator doors close, and operation continues.	●
Detection of Jammed Hall Button	If a hall button is jammed mechanically, the hall call will be automatically bypassed after being served once, until the program is resolved.	●
Car Door Safety Edge	Extending the full height of the car door, this device causes the doors to return to the fully open position should the door encounter a person or obstacle while closing.	●
Micro Levelling	An automatic two way leveling device is provided to maintain the elevator car level with the landing, regardless of elevator load or direction of travel.	●
N-Plex Operation	It can control up to 4 sets of elevators to optimize allocation of hall calls.	○
Non-Stop Operation	Specific floors which are memorized in control panel can be set to disable using switch on car operating panel or in security room.	○
Parking Operation	The elevator can be automatically parked at the predetermined floor with its doors closed, and the lights and ventilation will be turned off as well.	○
VIP Operation	The specified elevator is controlled by the special call buttons provided only for VIP elevator	○
Emergency Power Operation	If normal building power supply fails and the building provides emergency power to the controller(s), one elevator at a time will proceed to the lowest landing where it will stop with doors open and with all of its power and operating circuits in an inoperative standby condition.	○
Fire return operation	In case of fire, a fireman can use the elevator which is stopped at the specified floor in order to support firemen for fire-fighting.	○
Firemen Operation	In case of fire, a firemen can use the elevator which is stopped at the specified floor in order to support firemen for fire-fighting.	○
Anti-nuisance Operation	In case of substantial difference between the number of calls registered on the car operating panel and actual load in the elevator, the elevator prevents unnecessary operation by cancelling all registered calls when it arrives at the nearest floor.	○
Door Nudging	When the doors remain open for more than the fixed door open time, this feature closes the doors at a reduced closing speed with the buzzer sounding.	○
Voice Synthesizer	This system provides riding passengers with audio information about car operation such as direction of travel, landing floor, etc.	○
Door Photo Sensor	The doors reverse to fully open position if the light ray unit detects an obstacle when the doors are closing.	○

● Work by Others

The works below are not included in the elevator installation work and should be carried out by building contractors in accordance with our drawings, relevant international or local codes and regulations.

Hoist way

- A properly framed and enclosed hoistway, including any ventilation as required by the governing code or authority.
- A dry pit constructed to the elevator manufacturer's specifications to reinforce or sustain any vertical forces on the guide rails and impacted loads from the car and counterweight buffers.
- A metal sill angle or concrete haunch across the full width of the hoistway at each elevator landing.
- Provision of steel bars to fix jamb around the entrance of each floor.
- All cutting, including cutouts to accommodate hall signal fixtures, patching, painting of walls, floors, or partitions, together with finish painting of entrance doors and frames, if required.
- Provision of entrance or ladder for pit access
- Supply and installation of fascia plate.
- Installation of emergency exits and electric wiring in blind sections of hoistway where required.
- The tolerance of perpendicular line over the whole hoistway height must not exceed $\pm 30\text{mm}$.
- A waterproof outlet and light fixture in the elevator pit area with the light switch being located adjacent to the access door or ladder.
- Suitable light fixture and convenience outlet in the pit with a light switch adjacent to the access door or ladder.
The receptacles shall have protection for ground fault circuit interrupter.
- Provision of wiring between controller and building management system.
- A construction hoisting beam or hook, if required, with the correct location and size as determined by the elevator contractor for each hoistway.
- Noise insulation should be installed between machine room and adjacent residential area.

Miscellaneous

- Wiring and piping between monitoring system.
- Hoistway shall be free of dust or harmful gas.
- All electric power for lighting, tools, welding, etc during installation.
- All single phase receptacles installed in pit, and machinery spaces shall have ground fault circuit interrupter protection.
- Fire detector for fire emergency operation.
- A secured area for storage of elevator equipment and materials during installation.