Inclined Platform Lift For Straight Stairways
Please note:

Dimensions provided in this Guide are for **REFERENCE ONLY** and should not be used for site preparation or construction.
# X3

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What is an Inclined Platform Lift?

An inclined platform lift easily transports a passenger in a wheelchair, or someone who has difficulty using stairs. The lift can be operated independently or by an attendant with an attendant remote control (optional item). Compatible for indoor and outdoor applications, the Garaventa Inclined Platform Lift is a versatile, attractive and cost-effective accessibility solution.

Why an X3?

No Building Renovations (Modifications)
Inclined platform lifts fit easily into most stairways and do not require specially constructed hoistways.

Preserve Heritage Buildings
Flexibility in design enables Garaventa’s designers to adapt an inclined platform lift to virtually any building site with very little or no structural modifications. The availability of many colors and finishes ensures the lift will blend with its environment and preserve the look of a heritage building.

Save Valuable Floor Space
Floor space within a business building or a school is a valuable commodity. The X3 utilizes very little of this premium space.

Meets ADA Requirements
Garaventa inclined platform lifts are recognized in the ADA Accessibility Guidelines as a means to provide public building access when licensed for independent operation. They may also be used as an accessible means of egress when equipped with an auxiliary standby power system.

Design Assistance

With over 25 years of experience, Garaventa Lift is willing and able to overcome almost any design challenge you face. Please call our Design Hot Line with your accessibility challenge.

1-800-663-6556 or 1+604-594-0422

How It Works

The platform of the X3 travels along two custom designed aluminum rails that can be mounted either directly to the wall or to support posts (towers). The upper rail houses a gear rack while the lower rail provides lateral support. The platform is propelled by means of a carriage mounted rack and pinion drive system.

Finishes

Standard Color
The X3 rails and loading ramps are made of champagne anodized aluminum. The non-aluminum components of the lift are finished in a durable polyester powder paint coating that is electrostatically applied and baked at 210° C (410° F). Garaventa Lift standard color, Satin Grey (fine textured), compliments a variety of modern and traditional decors (color samples are available upon request). The conveyance cover is made of black colored high quality ABS/PVC.

Optional Colors
Garaventa also offers a choice of colors from the internationally accepted RAL color charts (color samples are available upon request). Please note the conveyance cover is not painted. Custom paint finishes available, contact your local Garaventa Lift Representative.
Platforms

The platform is available in four standard sizes, with a rated load of 250 kg (550lbs.) evenly distributed around the center of the platform.

Platform Sizes:
- 800 x 1220 mm (31 1/2" x 48") ADA
- 800 x 1050 mm (31 1/2" x 41 3/8")
- 800 x 900 mm (31 1/2" x 35 1/2")
- 700 x 750 mm (27 1/2" x 29 1/2")

Platform Components

The durable and vandal resistant platform control panel is mounted to the platform hanger. The standard platform controls consist of two large illuminated constant pressure Directional Buttons for independent operation and an Emergency Stop Button (with illumination optional).
Standard Platform Features

**Emergency Stop Button**
Located on the platform control panel, this red button is used to stop the lift in an emergency.

**Overspeed Safety**
The over speed safety which is located in the upper carriage on the platform, consists of a mechanical pawl and electrical cutout switch. In the unlikely event that the lift should descend too quickly, both the mechanical and electrical safety will activate simultaneously and stop the platform from moving.

**Leading Ramp Sensor**
The leading ramp is sensitive to obstructions. The ramps are designed to be obstruction sensitive in the direction of travel on the outside of the ramps as well as from within the platform. The internal ramp sensor prevents a wheelchair from being off-center on the platform deck.

**Under Platform Sensing Plate**
The under platform sensing plate detects obstacles underneath the platform.

**Platform Grab Bar**
This safety feature increases the ease with which passengers may load and unload from the platform.

**Emergency Fold**
In an emergency the platform is able to be manually folded and will lock in the folded position.

**Curved Safety Arms**
Manual (residential) or fully automatic (commercial) curved safety arms further increase the safety of the X3 inclined platform lift.

**Hour Counter**
The hour counter enables the owner to determine the amount of time the X3 inclined platform lift has been used. This is a helpful tool in determining times for preventive maintenance.

**Keyless Platform**
Standard platform operation is keyless

**Manual Emergency Lowering**
Lift is equipped with manual hand wheel to allow the platform to be lowered in case of an emergency or power loss.

Optional Platform Features

*Note: In some areas certain optional features are either not permitted or mandatory depending on local codes. Please consult your local Garaventa Lift representative for clarification.*

**Folding Seat Assembly**
The folding seat is equipped with a safety belt.

**Side Load**
Designed for confined lower landing areas, this feature opens a side ramp simultaneously with the end ramp. This allows the passenger to wheel onto the platform diagonally offering easier access.

**On Board Alarm With Illuminated E-Stop Button**
The emergency stop button can be illuminated and activate an onboard alarm.

**Keyed platform**
This option is designed for protection against unauthorized usage of the lift.

**Platform lock**
This is an additional safety feature that locks the platform and protects the unit from vandalism. The lock is manual for a manual platform (residential) and solenoid powered for an automatic platform.

**Attendant Remote Control**
The Attendant Remote Control overrides the directional buttons during attendant operation. The remote control unit can be removed when not required.

**Platform Power Fold and Unfold**
Platform can be folded and unfolded from the call stations by pressing the appropriate button. This is standard operation for a commercial X3 inclined platform lift.
Guide Rails

Two aluminum extrusions make up the guide rail assembly. The upper rail houses the rack that the platform’s pinion gear utilizes for travel. The platform is mechanically attached to this upper rail. The lower rail is used as a guide track for the rollers of the lower carriage assembly. The upper and lower rail heights are based on the stair angle and the platform size. For more information on rail heights see page 10.

Call Stations

**Wireless (Mandatory for Commercial Installs)**
Each landing is equipped with a call station. The call station enables the user to call and send the platform with a touch of a button. Platform fold and unfold is possible with the fully automatic model.

**Keyless Call Stations (Adjustable In Field)**
This feature allows the user to operate the lift without a key.

**Mounting Options**
The call stations are mounted directly on the wall. Optional flush mount call stations are available. The optional flush call station box dimensions;

- Length: 185mm (7 1/4”)
- Width: 115mm (4 1/2”)
- Depth: 52mm (2”)

Directional Buttons

Fold/Unfold Buttons

Key Switch

Design Hot Line: 1-800-663-6556 or +1-604-594-0422

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21040-F-DP

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Minimum Site Dimension Requirements

Platform Projection and Rail Extensions

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<th>25°</th>
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<th>40°</th>
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<td>1708</td>
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<td>Dimension B - Rail Extension</td>
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Note: These dimensions are based on a first riser height of 190mm (7 1/2"). The platform projection and rail extension will be shorter than indicated for shallow stairs below 25° as they may have shorter first risers, please consult Garaventa Lift.

Stair Width Clearance for Different Attachment Methods

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<td>800 x 1220 (31 1/2&quot; x 48&quot;) 800 x 1050 (31 1/2&quot; x 41 3/8&quot;) &amp; 800 x 900 (31 1/2&quot; x 35 1/2&quot;) platforms</td>
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<td>Direct Mount Towers</td>
<td>81 146</td>
<td>3 1/4 5 3/4</td>
<td>345 410</td>
<td>13 5/8 16 1/8</td>
<td>1040 1105 41 43 1/2 1255 1320 49 1/2 52 1060 1125 41 3/4 44 1/4</td>
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<td>*700 x 750 mm (27 1/2&quot; x 29 1/2&quot;) Platform</td>
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<tr>
<td>Direct Mount Towers</td>
<td>81 146</td>
<td>3 1/4 5 3/4</td>
<td>345 410</td>
<td>13 5/8 16 1/8</td>
<td>940 1005 37 39 1/2 N/A N/A N/A 960 1025 37 3/4 40 3/8</td>
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Attachment Methods

The extruded aluminum guide and support rails can be directly mounted to the wall or attached to steel support towers. There are various attachment methods used to support the X3.

Direct Mount Anchored to Solid Walls
- Solid concrete (152mm (6”) thick minimum)
- Concrete block (203mm (8”) minimum without reinforcement or 152mm (6”) minimum with reinforcement)
- Wood support posts located in wall (4” x 6” min.) Locations determined by Garaventa Lift.
- Steel support posts located in the wall. 76mm x 76mm x 6mm wall / (3” x 3” x 1/4”) minimum. Locations determined by Garaventa Lift.

Direct Mount Anchored to Wood Stud or Thin Block Walls
The upper rail must be attached to a 2” x 8” board that is secured to the wall. For the lower rail, a 2” x 4” board can be used. Each board must be fastened into every available wall stud with minimum two screw fasteners.

Note: Not Suitable for Steel Stud Applications.
Attachment Methods
(Continued)

Freestanding Support Towers
Required where no support walls exist, or when the lift must be located away from a wall structure.
- Solid concrete stairs/landings
- Wood stairs/landings over 76.2mm (3”) thick
- Concrete steel pan treads (towers must be secured back to the stringer with brackets for extra support)

Open Balustrade (Towers in the core)
In situations where the stairs cannot support free-standing towers and where direct mounting is not feasible, it may be possible to install support towers in the open core. This may also be a solution where there is insufficient clearance with towers on the treads. The towers are fastened to the floor and secured to walls or stringers.
Overhead Clearances

Overhead Clearances to meet US Code Requirements (ASME A18.1b)
Refer to page 12.

Overhead Clearances to meet Canadian Code Requirements (CSA B355-2000)
Refer to page 12.
## Overhead Clearances

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<tr>
<th>Stair Angle</th>
<th>15°</th>
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<td>1576 62&quot;</td>
<td>1693 66 5/8&quot;</td>
<td>1821 71 3/4&quot;</td>
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<td>2160 85&quot;</td>
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<td>1723 67 7/8&quot;</td>
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<td>800 x 1220mm Platform (31 1/2&quot; x 48&quot;)</td>
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<td><strong>Dimension C - Canadian Code Requirements</strong></td>
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<td>1813 71 3/8&quot;</td>
<td>1875 73 7/8&quot;</td>
<td>1943 76 1/2&quot;</td>
<td>2018 79 1/2&quot;</td>
<td>2105 82 7/8&quot;</td>
<td>2205 86 3/4&quot;</td>
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<td>1783 70 1/4&quot;</td>
<td>1836 72 1/4&quot;</td>
<td>1894 74 5/8&quot;</td>
<td>1960 77 1/8&quot;</td>
<td>2034 80 1/8&quot;</td>
<td>2121 83 1/2&quot;</td>
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<td>1728 68&quot;</td>
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<td>1854 73&quot;</td>
<td>1907 75 1/8&quot;</td>
<td>1970 77 1/2&quot;</td>
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### Wall Height Requirement for Direct Mounting

*True wall height is dimension K plus 35 mm (1 3/8”).*

![Diagram showing wall height requirements](image)

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<th>15°</th>
<th>20°</th>
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<td>800 X 1050 (31 1/2” X 41 3/8&quot;)</td>
<td>1034</td>
<td>1087</td>
<td>1143</td>
<td>1206</td>
<td>1277</td>
<td>1359</td>
<td>1455</td>
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<tr>
<td>800 X 900 (31 1/2” X 35 1/2&quot;)</td>
<td>1014</td>
<td>1059</td>
<td>1108</td>
<td>1162</td>
<td>1224</td>
<td>1295</td>
<td>1379</td>
</tr>
<tr>
<td>700 X 750 (27 1/2” x 29 1/2&quot;)</td>
<td>994</td>
<td>1032</td>
<td>1073</td>
<td>1118</td>
<td>1172</td>
<td>1232</td>
<td>1304</td>
</tr>
<tr>
<td><strong>Dimension M - Lower Rail Height</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800 x 1220mm Platform (31 1/2” x 48&quot;)</td>
<td>398</td>
<td>456</td>
<td>520</td>
<td>590</td>
<td>667</td>
<td>756</td>
<td>859</td>
</tr>
<tr>
<td>800 X 1050 (31 1/2” X 41 3/8&quot;)</td>
<td>375</td>
<td>426</td>
<td>481</td>
<td>541</td>
<td>608</td>
<td>685</td>
<td>775</td>
</tr>
<tr>
<td>800 X 900 (31 1/2” X 35 1/2&quot;)</td>
<td>355</td>
<td>398</td>
<td>445</td>
<td>497</td>
<td>555</td>
<td>622</td>
<td>699</td>
</tr>
<tr>
<td>700 X 750 (27 1/2” x 29 1/2&quot;)</td>
<td>335</td>
<td>371</td>
<td>410</td>
<td>454</td>
<td>502</td>
<td>559</td>
<td>624</td>
</tr>
</tbody>
</table>
**X3 Loading Diagram**  
*Based on 800x1220 (31 1/2" x 48") platform*

\[
F_1 = 129 \text{ kg} \Rightarrow 1265 \text{ N} \\
F_2 = 250 \text{ kg (550 lb) (max. loading capacity)} \Rightarrow 2452 \text{ N} \\
d_1 = 360\text{mm (14 1/8")} \\
d_2 = 565\text{mm (22 1/4")} \\
x = 81.75\text{mm (31/4")} \\
F = F_1 + F_2 = 1179 + 2452 = F = 3717 \text{ N}
\]

**Moment over F1 & F2:**  
\[M = F_1 \cdot (d_1 + x) + F_2 \cdot (d_2 + x) \Rightarrow M = 2251 \text{ Nm}\]

**Pulling Force F3:**  
\[F_3 = \frac{M}{d_3 + d_4} \Rightarrow F_3 = 2810 \text{ N}\]

**Pushing Force F4:**  
\[F_4 = \frac{M}{d_4} \Rightarrow F_4 = 3752 \text{ N}\]
**Application**  
Straight stairways

**Platform Sizes**  
- 800 x 1220mm (31 1/2" x 48") - ADA Compliant  
- 800 x 1050mm (31 1/2" x 41 3/8")  
- 800 x 900mm (31 1/2" x 35 3/8")  
- 700 x 750mm (27 1/2" x 29 1/2")

**Rated Load**  
250 kg. (550 lbs.)

**Speed**  
4 meters (13 ft) per minute

**Operating Controls**  
- **Call Stations:** Wireless, keyed (STD) call stations with encoded communication to stair lift. Powered by a regular 9 Volt battery. Call station are mandatory for commercial installations.  
- **Platform Controls:** Keyless (STD) with constant pressure switches, 24 VDC, equipped with emergency stop switch.

**Drive System**  
- **Motor:** 24 Volt PMDC Motor with 374 W and IP 54 protection  
- **Power Requirements:** 2 x 12 VDC, 7.2Ah Batteries (residential) 18.0Ah (public package) in a housing located behind the conveyance  
- **Charger:** 120 VAC, 50Hz, single phase providing 2 amp charging current to unit.  
- **Power Transmission:** Rack & Pinion  
- **Emergency Use:** Handwheel is provided

**Rail System**  
Champagne anodized aluminum extrusion with integrally mounted zinc plated gear rack.

**Overspeed Safety**  
Mechanical overspeed sensor and brake, with electrical drive cut-out protection.

**Curved Safety Arms**  
Fully automatic, 32mm (1 1/4") diameter safety arms, top of arm 948mm (37 3/8") above platform deck.

**Pedestrian Safety Lights**  
Illuminated tube lighting, located at both ends of the platform deck. Alerts pedestrians that the platform is in motion.