## CUSTOM CONSTRUCTIONS BASED ON MODULAR SOLUTIONS

Our modular product lines
Emergency egress
Access at heights

Retractable ladders

Exterior staircases in aluminium

Permanent ladders, with or without cage

Mobile access systems

Accessory safety solutions


ALUMINUM CONSTRUCTIONS FOR YOUR SAFETY

> Emergency egress > Access at heights > Building façade maintenance



The JOMY retractable ladder offers an unobtrusive, reliable and burglar proof solution for evacuation and access. It is ideally suited for architecturally valuable buildings:

- Unobtrusive, looks like a drainpipe;
- Deploys instantly from any number of evacuation levels;
- Burglar proof;
- Dependable and reliable with over 10,000 installations;

With an optional fixed lifeline for secure ac cess and working at height;

- At a reassuring price.

The JOMY ladder has been tested and approved by many agencies across the globe: Vinctotte Belgium; Underwriters Laboratories USA; Japan Fire Service Inspection Institute; Bezirksamt Charlottenburg (Berlin) Abteilung Bauwesen in Germany; Fédération Nationale des Sapeurs Pompiers Francais in France; Direzione Generale della Protezione

Civile e dei Servizi Antincendi, Ministero dell'Interno Italia in Italy; Fire Prevention Institute of Iceland; Civil Defense of Saudi Arabia; ...

In the same product line, we also offer these simpler retractable ladders:

- The "Mini-JOMY" ladder, a light version to be used as an access ladder only;
- The "JOMY Stick" ambulant ladder, a portable retractable ladder.

THE UNOBTRUSIVE, RELIABLE AND BURGLAR PROOF SOLUTION FOR EVACUATION AND ACCESS


- Unobtrusive, looks like a drainpipe;
- Deploys instantly from any number of evacuation levels;
- Burglar proof;
- Dependable and reliable with over 10,000 installations;
- With an optional fixed lifeline for secure access and working at height;
- At a reassuring price.

UNOBTRUSIVE, LOOKS LIKE A DRAINPIPE


## DEPLOYS INSTANTLY FROM ANY NUMBER OF EVACUATION LEVELS



## BURGLAR PROOF



If used for evacuation purposes, the ladder is usually installed without opening mechanism at the ground level, to prevent opening by unauthorized persons. Alternatively, for example for access purposes, the opening handle can be installed at ground level, but protected by a padlock (which doesn't prevent opening of the ladder from other levels)


At its base, the ladder can be mounted in an anti-climb profile of $+/-10 \mathrm{ft}$ or 3 m .
The ladder can be equipped with an opening sensor, connected to the burglary alarm.

## DEPENDABLE AND RELIABLE WITH OVER 10,000 INSTALLATIONS



## OPTIONAL FIXED LIFELINE FOR SECURE ACCESS AND WORKING AT HEIGHT

The use of the lifeline fall arrest system eliminates the need for a safety cage (standard EN 14122-4). The lifeline consists of a fixed aluminum rail and a stepless carriage. The user, wearing a safety belt, is attached to the carriage, which in turn slides over the rail and blocks in case of a fall.

- The fall arrest system is available for the JOMY ladder, the MiniJOMY ladder, and for most of our other constructions;
- The rail can be straight or curved (with a radius of minimum $1^{\prime \prime} 1^{\prime \prime}$ or 34 cm ). The cross section of the aluminum rail is less than 1 $1 / 4^{\prime \prime} \times 1-1 / 4^{\prime \prime}$ or $31 \times 31 \mathrm{~mm}$. No maintenance is required;
- Attachments are available for easy fixing to most support structures (floor, ceiling, wall, I-beam, ladder, ...);
- The lifeline is available in vertical and horizontal versions. Complies with standard EN 353-1 (vertical system) and EN 795 (horizontal system).


OPTIONAL CUSTOM MADE ACCESS BALCONIES


THE LADDER IS EASILY SPECIFIED


Key measures
A: Level of highest evacuation point
B: Overshoot height: approx 7 ft or 2.25 m
C: Total ladder height $=\mathrm{A}+\mathrm{B}$
D: Horizontal distance between evacuation balcony and
ladder: approx 2 ft or 60 cm
Right or left
Depending on the desired position of the guardrail, either a left or right JOMY must be specified.


Left JOMY
Right JOMY


## MODULAR, ASSEMBLED FROM STANDARD ELEMENTS

The JOMY ladder is composed of standard elements, which are combined to the desired height, according to the table shown on this page. The individual elements are ready to install and well adapted to transportation.


| Code | Closed height | Open <br> height | Top rung |
| :---: | :---: | :---: | :---: |
| J01 | $11^{\prime} 4^{\prime \prime}$ or 3.45 m | $9^{\prime} 4^{\prime \prime}$ or 2.85 m | 8 10 ' or 2.7 m |
| J02 | $14^{\prime} 3^{\prime \prime}$ or 4.35 m | $12^{\prime} 4^{\prime \prime}$ or 3.75 m | $11^{\prime} 10$ " or 3.6 m |
| J03 | $16^{\prime} 3^{\prime \prime}$ or 4.95 m | $14^{\prime} 3$ " or 4.35 m | $13^{\prime} 9$ ' or 4.2 m |
| J04 | $18^{\prime} 3^{\prime \prime}$ or 5.55 m | $16^{\prime} 3^{\prime \prime}$ or 4.95 m | $15^{\prime} 99^{\prime \prime}$ or 4.8 m |
| J11 | $21^{\prime} 2^{\prime \prime}$ or 6.45 m | $19^{\prime} 2^{\prime \prime}$ or 5.85 m | $18^{\prime} 8^{\prime \prime}$ or 5.7 m |
| J 12 | $24^{\prime} 1^{\prime \prime}$ or 7.35 m | $22^{\prime} 2^{\prime \prime}$ or 6.75 m | $21^{\prime} 8$ " or 6.6 m |
| J13 | $26^{\prime \prime} 1^{\prime \prime}$ or 7.95 m | $24^{\prime \prime} 1^{\prime \prime}$ or 7.35 m | $23^{\prime} 7$ ' or 7.2 m |
| J14 | $28^{\prime} 1^{\prime \prime}$ or 8.55 m | $26^{\prime \prime} 1^{\prime \prime}$ or 7.95 m | $25^{\prime} 7^{\prime \prime}$ or 7.8 m |
| J21 | $31^{\prime} 0$ " or 9.45 m | $29^{\prime} 0$ " or 8.85 m | $28^{\prime} 7$ 'o or 8.7 m |
| J22 | $33^{\prime} 11^{\prime \prime}$ or 10.35 m | $31^{\prime} 12$ ' or 9.75 m | $31^{\prime} 6^{\prime \prime}$ or 9.6 m |
| J23 | $35^{\prime} 11^{\prime \prime}$ or 10.95 m | $33^{\prime} 11{ }^{\prime \prime}$ or 10.35 m | $33^{\prime} 6^{\prime \prime}$ or 10.2 m |
| J24 | $37^{\prime} 11^{\prime \prime}$ or 11.55 m | $35^{\prime} 11^{\prime \prime}$ or 10.95 m | 35.5 " or 10.8 m |
| J31 | $40^{\prime} 10^{\prime \prime}$ or 12.45 m | $38^{\prime} 11^{\prime \prime}$ or 11.85 m | 38.5 " or 11.7 m |
| J32 | $43^{\circ} 10^{\prime \prime}$ or 13.35 m | $41^{\prime} 10^{\prime \prime}$ or 12.75 m | $41^{\prime} 4^{\prime \prime}$ or 12.6 m |
| J33 | $45^{\prime} 9$ ' or 13.95 m | $43^{\prime} 10^{\prime \prime}$ or 13.35 m | $43^{\prime} 4^{\prime \prime}$ or 13.2 m |
| J34 | $47^{\prime} 9^{\prime \prime}$ or 14.55 m | $45^{\prime} 9$ " or 13.95 m | $45^{\prime} 3^{\prime \prime}$ or 13.8 m |
| J41 | 50 ' 8 " or 15.45 m | $48^{\prime} 9$ ' or 14.85 m | $48^{\prime} 3^{\prime \prime}$ or 14.7 m |
| J42 | $53^{\prime} 8^{\prime \prime}$ or 16.35 m | $51^{\prime} 8$ " or 15.75 m | $51^{\prime} 2^{\prime \prime}$ or 15.6 m |
| J43 | $55^{\prime} 7^{\prime \prime}$ or 16.95 m | $53^{\prime} 8$ ' or 16.35 m | $53^{\prime} 2^{\prime \prime}$ or 16.2 m |
| J44 | $57^{\prime} 7^{\prime \prime}$ or 17.55 m | $55^{\prime} 7^{\prime \prime}$ or 16.95 m | $55^{\prime} 1^{\prime \prime}$ or 16.8 m |
| J51 | $60^{\circ} 6^{\prime \prime}$ or 18.45 m | $58^{\prime} 7$ ' or 17.85 m | $58^{\prime} 1^{\prime \prime}$ or 17.7 m |
| J52 | $63^{\prime} 6^{\prime \prime}$ or 19.35 m | $61^{\prime} 6^{\prime \prime}$ or 18.75 m | $61^{\circ} \mathrm{O}$ " or 18.6 m |
| J53 | $65^{\prime} 5$ " or 19.95 m | $63^{\prime} 6^{\prime \prime}$ or 19.35 m | $62^{\prime} 12{ }^{\prime \prime}$ or 19.2 m |
| J54 | $67^{\prime} 5$ " or 20.55 m | $65^{\prime} 5$ " or 19.95 m | $64^{*} 12$ " or 19.8 m |
| J61 | $70^{\prime} 4^{\prime \prime}$ or 21.45 m | $68^{\prime} 5$ " or 20.85 m | $67^{\prime} 11^{\prime \prime}$ or 20.7 m |
| J62 | $73^{\prime} 4^{\prime \prime}$ or 22.35 m | $71^{\prime} 4^{\prime \prime}$ or 21.75 m | $70^{\prime} 10$ " or 21.6 m |
| J63 | 75 ' 4 " or 22.95 m | $73^{\prime} 4^{\prime \prime}$ or 22.35 m | $72 \cdot 10$ " or 22.2 m |
| J64 | $77^{\prime} 3^{\prime \prime}$ or 23.55 m | $75^{*} 4^{\prime \prime}$ or 22.95 m | $74{ }^{10} 10$ or 22.8 m |
| J71 | $80 \cdot 3$ " or 24.45 m | 78.3 " or 23.85 m | $77^{\circ} 9^{\prime \prime}$ or 23.7 m |
| J72 | $83^{\prime}{ }^{\prime \prime}$ or 25.35 m | $81^{\prime}{ }^{\prime \prime}$ or 24.75 m | $80^{\circ} 9$ " or 24.6 m |
| J73 | $85^{\prime}{ }^{\prime \prime}$ or 25.95 m | $83 \cdot 2$ " or 25.35 m | $82^{\prime} 8^{\prime \prime}$ or 25.2 m |
| J74 | $87^{1} 1$ 'or 26.55 m | 85.2 " or 25.95 m | $84^{\prime} 8^{\prime \prime}$ or 25.8 m |
| J81 | $90 \cdot 1$ ' or 27.45 m | $88^{\prime} 1$ ' or 26.85 m | $87^{\prime} 7^{\prime \prime}$ or 26.7 m |
| J82 | $93^{\circ} 0$ 'or 28.35 m | $91^{1} \cdot$ ' or 27.75 m | $90^{\prime} 7^{\prime \prime}$ or 27.6 m |
| J83 | $94^{\circ} 12^{\prime \prime}$ or 28.95 m | $93^{\circ} 0$ " or 28.35 m | $92^{\circ} 6^{\prime \prime}$ or 28.2 m |
| J84 | $96^{\prime} 11^{\prime \prime}$ or 29.55 m | $94^{\circ} 12^{\prime \prime}$ or 28.95 m | $94^{\circ} 6^{\prime \prime}$ or 28.8 m |
| J91 | $99^{*} 11^{\prime \prime}$ or 30.45 m | $97^{\prime} 11^{\prime \prime}$ or 29.85 m | $97^{\prime} 5{ }^{\prime \prime}$ or 29.7 m |
| 192 | $102 \cdot 10$ 'or 31.35 m | $100 \cdot 11$ ' or 30.75 m | $100{ }^{\text {/ }}$ " or 30.6 m |
| J93 | $104^{\prime} 10$ " or 31.95 m | $102 \cdot 10$ 'or 31.35 m | $1024^{\prime \prime}$ or 31.2 m |
| J94 | $106^{\prime} 9$ " or 32.55 m | $104^{\prime} 10$ ' or 31.95 m | $104{ }^{4}$ ' or 31.8 m |

## MANY OPTIONS TO ATTACH THE LADDER (1/2)

The ladder can be installed perpendicular to the wall lat a distance of $1^{\prime \prime}$ to $3^{\prime} 3^{\prime \prime}$ or 3 to 100 cm from the wall; see a.), or parallel to the wall (see b.). In general, an installation perpendicular to the wall is preferential, because of easier access to the ladder.

Dedicated attachment pieces are available to install the ladder at a distance from the wall for wall surfaces in relief. The back post of the JOMY ladder is installed in special anchor brackets which allow free thermal expansion of the ladder.

b


MANY OPTIONS TO ATTACH THE LADDER (2/2)

The anchor brackets are vertically aligned and attached to the wall using M12 expansion plugs or chemical anchors. These attachments have to resist to a horizontal force of least 4 KN 1900 lb or 400 Kg ). The anchor brackets should be no more than 5 ft or 1.5 m apart.

If it isn't possible to install the anchor brackets every 5 ft or 1.5 m , the ladder will be mounted in a U-shaped reinforcement profile which has to be attached to the wall at least every $9^{\prime} 10^{\prime \prime}$ or 3 m . See picture a.

The reinforcement profile is also used when the ladder overshoots the roof (access from the roof). See pictures b and c.
a, b and c: U-shaped reinforcement profile


The JOMY ladder can be installed by a team of two workers, following standardized installation procedures. All used components are lighter than 50 lb or 23 Kg . The ladder
rests on the floor and is attached every 5 ft or 1.5 m by one expanding rawlplug (M12) or a chemical anchor (see previous page).

The installation of the JOMY ladder can be verified and documented in an installation verification report, which is submitted to the client within one month after installation.


MANY OTHER OPTIONS


## TECHNICAL SPECIFICATIONS (1/2)

## 1. General

Closed, the ladder resembles a metal column of $3^{\prime} 3^{\prime \prime} \times 3^{\prime} 7^{\prime \prime}$ or $100 \times 110 \mathrm{~mm}$. It is installed at a distance of approx 2 ft or 60 cm from the exit and has a minor effect on the facade esthetics.
The ladder opens perpendicular to the wall lor optionally: parallel to the wall). A safety rail deploys from the mobile upright.
The closed height of the ladder is approx ... ft (please complete). After opening, the top rung will be 2 ' 5 " or 75 cm lower than the closed height. The ladder rests on the floor and runs approx $7^{\prime} 5$ " or 2.25 m higher than the highest level of access such that the top rung is at level with the user's shoulder.

## 2. Materials - protection maintenance

Only materials not subject to corrosion can be used: profiles of aluminum alloy, anodized 10 micron, natural mat finishing; fasteners (bolts, axes, springs and rivets) of stainless steel A2-70 DaN/mm²; joint washers, bushes, etc. of polyamide.
No protective treatment, painting or main-
tenance is required, except when exposed to aggressive environments.
The outside parts of the closed ladder can be painted in any RAL color by polyester powder coating (as an option)

## 3. Construction

The ladder is assembled from standard modules. Characteristics:

- one mobile and one fixed upright;
- tubular rungs with anti-slip upper side, width: 2 ft or 60 cm luseful width: $1^{\prime} 7$ " or 49 cm ), cross section: $1-1 / 2^{\prime \prime} \times$ $7 / 8^{\prime \prime}$ or $37 \mathrm{~mm} \times 22.5 \mathrm{~mm}$, spaced at 1 ft or 30 cm . The lowest rung is positioned at a height of 2 ft or 60 cm from the ground level;
- lateral safety rail along the full ladder height deployed from the mobile upright providing a side protection of 1 ft or 30 cm width;
- opening handles at every point of access at any desired height, with a pitch of 1 ft or 30 cm (standard: one opening handle per story). With a quarter turn of any handle, the ladder deploys over its complete height. At each intermedi-
ate level the handles are permanently fixed to the ladder, at ground level and at the roof level, if applicable, they can be removable
- counter balance springs: the ladder is balanced by stainless steel counterbalance springs. It opens and closes with minimal effort. The ladder deploys softly.

The ladder rungs have to be tested to carry a charge of 1000 lb or 450 Kg , the ladder uprights 11000 lb or 5000 Kg .

The ladder's own weight is equal to or lower than $5 \mathrm{lb} / \mathrm{ft}$ or $7.5 \mathrm{Kg} / \mathrm{m}$.

Optionally, the ladder can be equipped with a lifeline according to standard EN353-1. The lifeline will be based on a fixed aluminum rail and a stepless carriage, which blocks on the rail in case of a fall.

This text is available on our website: www. jomy.be

## TECHNICAL SPECIFICATIONS (2/2)

## 4. Installation

The ladder is installed without damaging the stability or safety of the façade. Special anchor brackets are installed at least every 5 ft or 1.5 m using M12 expansion plugs or chemical anchors. Each such support can withstand a horizontal force of 4000 N .

The ladder has to be reinforced by a special U-channel for (1) parts of the ladder that overshoot the building, (2) parts that are placed at a distance from the wall, or (3) parts that cannot be fixed to the wall every 5 ft or 1.5 m . The reinforcement profile is attached to the wall at least every $9^{\prime} 10^{\prime \prime}$ or 3 m .
In order to take into account the different thermal expansion of the wall structure and the ladder, the ladder can expand freely within its anchor brackets without deformation or damage.
The contractor will provide for a cleared surface of approximately $2^{\prime} 7^{\prime \prime} \times 2^{\prime} 7^{\prime \prime}$ or $80 \mathrm{~cm} \times 80 \mathrm{~cm}$ in order to allow unhampered opening of the ladder.

## 5. Tests

The ladder has been submitted to static and dynamic type examination tests by a certified body. The manufacturer will provide a copy of the test report on simple demand.

## 6. Burglar proof

The ladder can be protected from use by unauthorized persons:

- either by not placing a deployment handle at ground level nor at roof level;
- either by providing a locking hub and padlock for the ground and roof levels that prevent opening from those levels while still allowing the opening from other levels (as an option);
- either by an opening detector, to be connected to the burglary alarm las an option).


## 7. Guarantee

The ladder and its installation have to be inspected. The inspection report needs to be submitted to the client within one month after installation.

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THE MINI-JOMY: LIGHT RETRACTABLE LADDER FOR ACCESS ONLY


## Esthetic and unobtrusive

The Mini-JOMY ladder integrates seamlessly in modern and classic architectures. It is generally considered the "architect's choice" for unobtrusive and effective access.
The Mini-JOMY ladder is comparable to the JOMY. It looks like a metal column of approximately $3-1 / 2^{\prime \prime}$ by $3-1 / 2^{\prime \prime}$ or 9 by 9 cm . It is manufactured in anodized aluminum with natural mat finishing. Optionally, the exterior parts of the ladder can be painted in any RAL color.

## Easy to use and burglar proof

The mini-JOMY has one or two opening latches. The latches can be protected by a padlock, restricting the use of the ladder to authorized personnel only. The ladder is internally counterbalanced by springs, resulting in a soft deployment, and an easy closing after use.

## Fall arrest system with fixed

 lifeline (option)The ladder can be equipped with a fixed lifeline (corresponding to standard EN 353-1). The use of the lifeline eliminates the need for a safety cage (standard ISO 14122-4). The fall safety consists of a fixed aluminum rail and a stepless carriage which is connected to the user's safety belt. In case of a fall, the carriage blocks on the rail (see page 1.8).

## Versatile and easy to install

The Mini-JOMY ladder is composed of modular elements, which are combined to achieve the desired height lin steps of $+/-3 \mathrm{ft}$ or 1 m ; see page 1.21 ). The modular elements are patented, ready for installation, and designed with transportation in mind. The ladder can be installed perpendicular lat a distance of $1^{\prime \prime}$ to $3^{\prime \prime} 3^{\prime \prime}$ or 3 to 100 cm from the wall) or parallel to the wall.

## COMPARING JOMY AND MINI-JOMY

|  | JOMY | Mini-JOMY |
| :---: | :---: | :---: |
| Opening mechanism | Patented mechanism <br> Multiple opening handles can be installed at any desired position on the ladder (every $1 \mathrm{ft} / 30 \mathrm{~cm}$ ) | Simple manual latch <br> Single opening latch, at the foot and / or the top of the ladder |
| Dimensions and performance | $\sim 5 \mathrm{lb} / \mathrm{ft}$ or $7.5 \mathrm{Kg} / \mathrm{m}$ <br> Rung with: $2^{\prime} / 60 \mathrm{~cm}$ (useful: $1^{\prime} 7^{\prime \prime} / 49 \mathrm{~cm}$ ) <br> Closed ladder section: $4-3 / 8^{\prime \prime} \times 4$ " or $110 \times 100 \mathrm{~mm}$ <br> Max rung charge: 1000 lb or 450 Kg <br> Max charge mobile upright: 11000 lb or 5000 Kg | $\sim 2.8 \mathrm{lb} / \mathrm{ft}$ or $4,2 \mathrm{Kg} / \mathrm{m}$ <br> Rung width: 1'9" / 53 cm (useful: $1^{\prime \prime} 6^{\prime \prime} / 45 \mathrm{~cm}$ ) Closed ladder section: $3-5 / 8^{\prime \prime} \times 3-1 / 4^{\prime \prime}$ or $92 \times 84 \mathrm{~mm}$ Max rung charge: 770 lb or 350 Kg Max charge mobile upright: 5500 lb or 2500 Kg |
| Guardrail | Left or right | Not available |
| Installation | Min 2 workers <br> One attachment every 5 ft or 1.5 m Opening mechanism to be installed | Min 2 workers <br> One attachment every $3^{\prime} 3^{\prime \prime}$ or 1 m No opening mechanism to be installed |
| Price |  | Lower than JOMY for same height |
| Recommended use | Evacuation and access Unlimited height | Only access <br> Height up to $+/-50 \mathrm{ft}$ or 15 m |

One attachment every $3^{\prime} 3^{\prime \prime}$ or 1 m

Lower than JOMY
for same height

Only access
Height up to $+/-50 \mathrm{ft}$ or 15 m

OPENING MECHANISM JOMY AND MINI-JOMY


MINI-JOMY TECHNICAL INFORMATION


THE "JOMY STICK", A PORTABLE FOLDABLE LADDER

## Foldable

The JOMY Stick folds into a stick with a section of only $2-1 / 2^{\prime \prime} \times 1-7 / 8^{\prime \prime}$ or $64 \times 48 \mathrm{~mm}$. It is easily stored and transported.

## Easy

The ladder opens easily and without effort.

## Light

The ladder weighs less than $1.5 \mathrm{lb} / \mathrm{ft}$ or 2.25 Kg $/ \mathrm{m}$. It is easily carried in one hand.

## Safe

The ladder locks in open position. It is equipped with anti-slip rubber ends

## Strong

The ladder supports 770 lb or 350 Kg .

## Comfortable

The rungs are $1-1 / 2^{\prime \prime}$ or 37 mm wide with slightly curved upper side and anti-slip grooves.

## Durable

Made of high quality materials:

- The base material used is an aluminum alloy AlMgSi0,5/F25, anodized 10 micron, natural mat finishing;
- Axes and rivets in stainless steel A2-70 DaN/mm²;
- No protective treatment, painting or maintenance is required, except when exposed to aggressive environments;
- Optionally, the exterior parts of the closed
ladder can be polyester powder coated in any RAL color.


## Standards

Satisfies the EN-131-1 ladder standard.

Patented solution



| Code | Number of rungs | Closed height | Open height |
| :---: | :---: | :---: | :---: |
| JO-STL04 | 4 | 5 $111^{\prime \prime}$ or 1.80 m | 4*9* or 1.45 m |
| Jo-STL05 | 5 | 6. 11 ' or 2.10 m | $5^{\prime} 9$ ' or 1.75 m |
| Jo-STL06 | 6 | 7'9 ${ }^{\prime \prime}$ or 2.35 m | 6.7' or 2.00 m |
| J0-STL07 | 7 | 8. $8^{\prime \prime}$ or 2.65 m | $7^{\prime} 7^{\prime \prime}$ or 2.30 m |
| J0-STL08 | 8 | $9^{\circ} 6^{\prime \prime}$ or 2.90 m | 8. 6 " or 2.60 m |
| J0-STL09 | 9 | $10^{\prime} 6^{\prime \prime}$ or 3.20 m | $9^{\circ} 44^{\prime \prime}$ or 2.85 m |
| Jo-STL10 | 10 | $11^{\prime} 6^{\prime \prime}$ or 3.50 m | $10^{\prime} 4^{\prime \prime}$ or 3.15 m |
| Jo-STL11 | 11 | $12^{\prime} 4^{\prime \prime}$ or 3.75 m | $11^{\prime} 2^{\prime \prime}$ or 3.40 m |
| J0-STL12 | 12 | $13^{\prime} 3^{\prime \prime}$ or 4.05 m | $12^{\prime} 2^{\prime \prime}$ or 3.70 m |
| Jo-STL13 | 13 | $14^{\prime} 1^{\prime \prime}$ or 4.30 m | $13^{\prime} 1^{\prime \prime}$ or 4.00 m |

