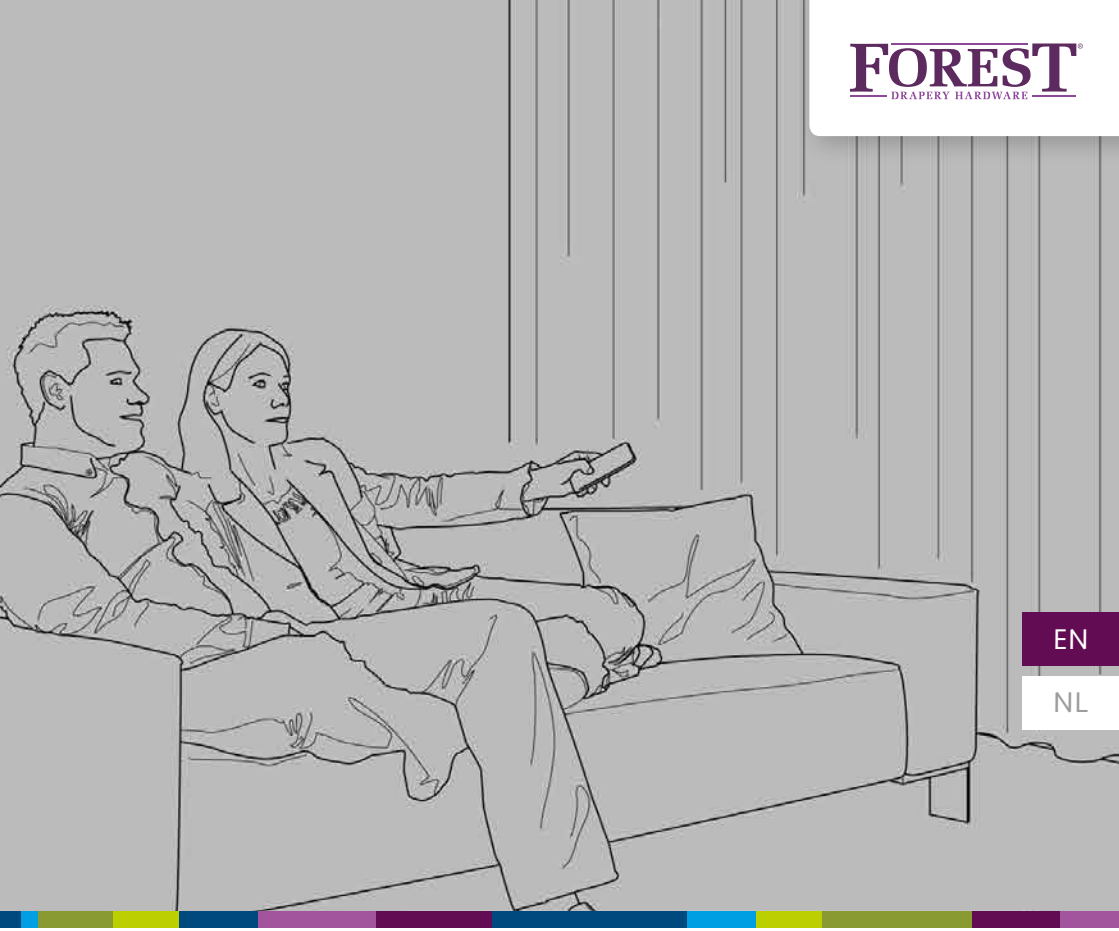
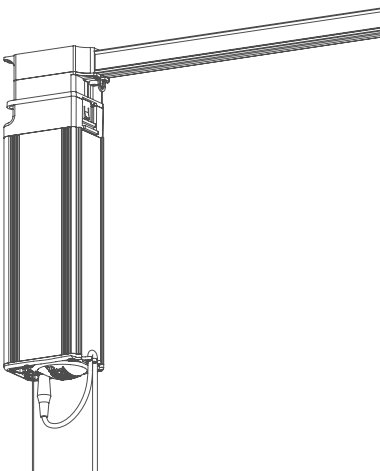
FOREST
DRAPERY HARDWARE



EN
NL

INSTALLATION MANUAL
FOREST SHUTTLE® S / M / L RECEIVER Z-WAVE



other languages

instructional video

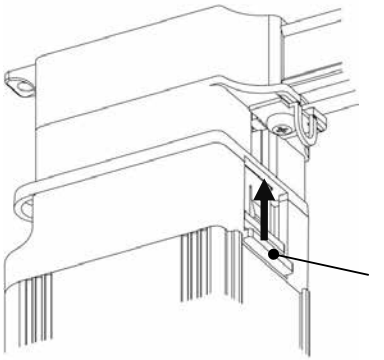
Installing the **FOREST SHUTTLE® S / M / L Z-Wave**

① Assemble the track

② Install the brackets and fix the track onto the brackets

③ Do not attach the drapery yet. Attach the drapery only after the end positions have been set.
→ position the master carrier(s) into half open position

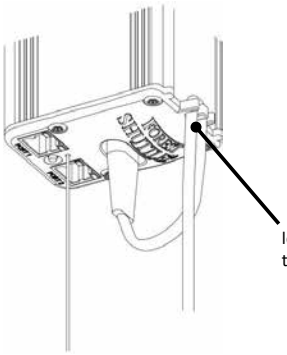
④ Attach the motor to the track



Make sure to secure the locking pin into the motor pulley

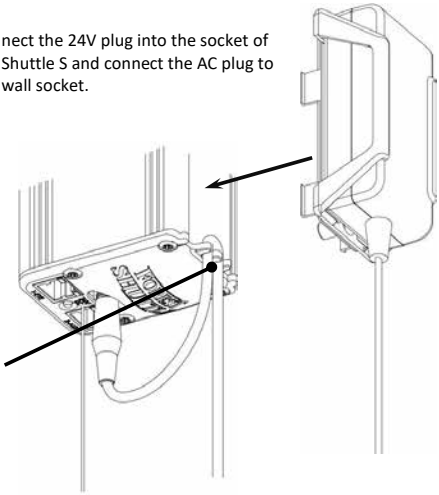
⑤ **Shuttle® L Z-Wave (EU, ANZ, IN):**

Connect the AC plug (100-240V~) to the power socket of Shuttle L



Shuttle® S / M Z-Wave (USA):

Connect the 24V plug into the socket of the Shuttle S and connect the AC plug to the wall socket.



loop the cord through the strain relief

⑥ *(Re)setting the end limits of the* **FOREST SHUTTLE® S / M / L Z-Wave**

RESETTING LIMITS:

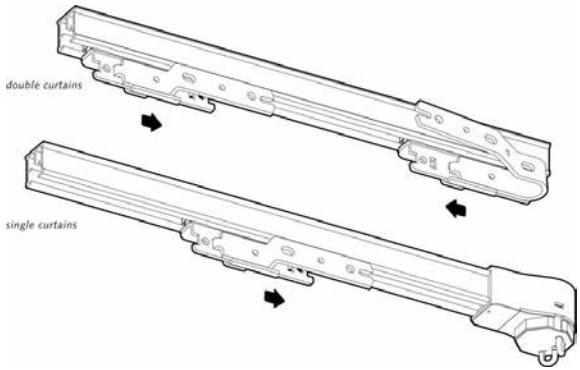
When there are issues regarding opening and closing of the curtains, the limits can be reset.
Before starting make sure:
1. The curtains or master carrier(s) are in the open position.
2. Press the configuration button on the bottom of the Shuttle 4 times and hold it down the 5th time for 4 seconds, led blinks 3 times and turns OFF.

SETTING LIMITS AND MOTOR DIRECTION:

Before starting make sure:
1. The positions are reset (see resetting limits)
2. The curtains or master carrier(s) are in the open position.
3. Give the master carrier(s) a little push towards the close position. The Shuttle starts to move towards the close position, when the closed position is reached the master carrier(s) automaticly returns to the open position.**

4. When the master carrier reaches it's open position there is a 10 second timeframe to adjust the stack back, move the master carrier to the desired open position and wait till the LED on the bottom of the Shuttle turns off.

EN



Stack back: The minimal automatic adjustment is 3 cm (1.2").
The first movement after resetting the limits always need to be towards the close position

** On older firmware Shuttle's, after reaching the end position, the master carrier does not return automaticly, the master carrier needs to be pushed back towards the open position by hand.

Advanced configuration of the **FOREST SHUTTLE® S / M / L Z-Wave**

Bottom view of the Shuttle

Use a pin to change settings in the configuration menu.
Choose the setting you want to change (table below) and press the button that many times (corresponding with setting).

presses	LEDs 1 2 3 4	function	factory default
1	■□□□	speed low	•
2	□■□□	speed high	
3	□□■□	Z-wave Include/Exclude	
4	□□□■	reset endlimits	
5	■□□□	dry-contact pulse	•
6	□■□□	dry-contact continuous	
7	□□■□	dry-contact single switch	
8	□□□■	touch impulse sensitivity high	•
9	■□□□	touch impulse sensitivity low	
10	□■□□	touch impulse off	
11	□□■□	IR channel 1	•
12	□□□■	IR channel 2	
13	■□□□	IR channel 3	
14	□■□□	IR channel 4	
15	□□■□	IR channel 5	
16	□□□■	factory default	
25	■□□□	Forced Z-wave exclusion	

Confirm the desired setting by pressing the button for 4 seconds until the led blinks 3 times and turns OFF. These settings can also be done when finishing the installation.

Speed:

Standard speed is 14cm/s. Fast speed is 17cm/s.
Press the configuration button 2 times and hold it down the 3th time for 4 seconds until the led blinks 3 times and turns OFF.

Including/Excluding Shuttle® S/M/L Z-Wave to a Z-Wave network:

Activate the inclusion mode on your main Z-Wave controller (see manual controller). Press the configuration button on the Shuttle 3 times and hold it down the 4th time for 4 seconds. LED starts to blink for 10 seconds.
The Shuttle Z-Wave motor will be detected by the Z-Wave controller and included into the Z-Wave network.

Forced Z-Wave exclusion (Device reset locally):

This way of excluding is less preferred.
Use this procedure only when the network primary controller is missing or otherwise inoperable.
Press the configuration button on the Shuttle 25 times and hold it down the 26th time for 4 seconds. LED 2 blinks and LED 3 turns on for 5 seconds.

Resetting end limits:

Press the configuration button 4x and hold it down the 5th time for 4 seconds. The led blinks 3 times and turns OFF.

Dry contact inputs:

Make sure the input is free of voltage!
Standard input is pulse contact. To set to continuous or single switch, press button 6 or 7 times respectively. To confirm, press button once more for 4 seconds until the led blinks 3 times and turns OFF.
See page 6 for detailed explanation.

Touch Impulse:

The Shuttle recognizes when the curtain is pulled by hand to open or close. When the curtain is pulled the Shuttle will open or close the curtain all the way. Default sensitivity is high. Touch Impulse can be set to be less sensitive or turned off, with 9 or 10 presses respectively. To confirm, press button once more for 4 seconds until the led blinks 3 times and turns OFF.

IR channel setting:

The IR receiver can only be connected to port 1.
For infrared control an IR remote and an IR receiver is required. Standard the Shuttle is set to channel 1 and 'ALL'. To change to channel 2, 3, 4 or 5, press resp. 12x, 13x, 14x or 15x button and confirm by pressing button once more for 4 seconds until the led blinks 3 times and turns OFF.
Place the eye of the receiver cord in view of the IR remote.
If necessary, change the IR channel as shown on page 4.

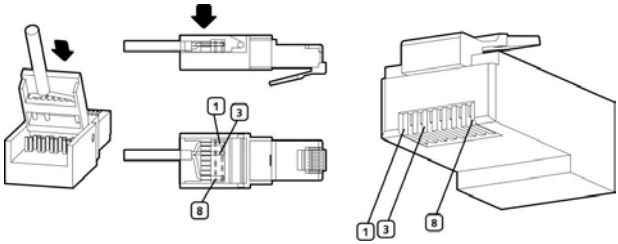
Factory default:

To reset all settings, press the configuration button 16x and hold it down the 17th time for 4 seconds, the led blinks 3 times and turns OFF.

EN

Dry Contact input of the **FOREST SHUTTLE® S / M / L Z-Wave**

do-it-yourself plug



MANUAL SWITCH CONNECTED TO DRY CONTACT INPUTS

A manual switch or a relay output of a Home Automation System can be connected to the Shuttle. Be sure the switch/relay is potential free. Use pins 1, 3 and 8 of PORT1 or PORT2.

OPEN: when pin 1 is connected to pin 3 (COMMON) the Shuttle will open the curtain.

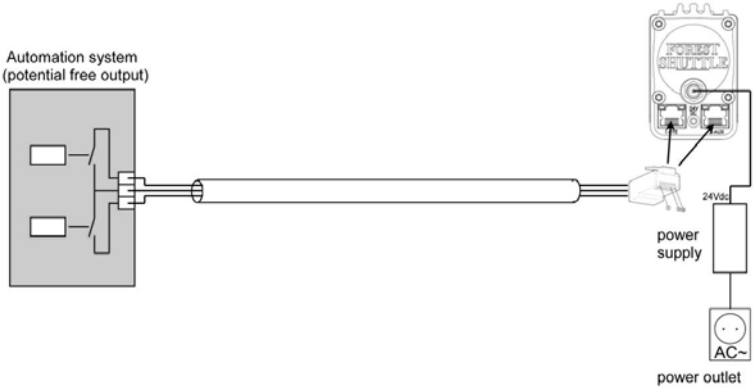
CLOSE: when pin 8 is connected to pin 3 (COMMON) the Shuttle will close the curtain.

STOP: when pin 1 and 8 are connected to pin 3 (COMMON) the Shuttle will stop moving the curtain.

Different modes can be set:

- Pulse: when short contact is made the curtain will open or close fully (default setting)
- Continuous: the curtain will move as long as the contact is made (mostly used for Home Automation Systems)
- Single button switch (doorbell principle): either one of the four inputs will act as following: open → stop → close → stop → open → stop → close → stop etc.

To change input settings see page 4.



Advanced Z-Wave configuration of the **FOREST SHUTTLE® S / M / L Z-Wave**

Z-Wave Plus: Yes
Z+ Plus Role type: ROLE_TYPE_SLAVE_ALWAYS_ON
Z+ Device type: WINDOW_COVERING_POSITION_ENDPOINT_AWARE
Basic type: BASIC_TYPE_ROUTING_SLAVE
Generic type: GENERIC_TYPE_SWITCH_MULTILEVEL
Specific type: SPECIFIC_TYPE_CLASS_C_MOTOR_CONTROL
Listening: TRUE
Z-Wave Lib: 6.51.10

Supporting command classes

class: 0x5E COMMAND_CLASS_ZWAVEPLUS_INFO_V2
class: 0x85 COMMAND_CLASS_ASSOCIATION_V2
class: 0x59 COMMAND_CLASS_ASSOCIATION_GRP_INFO
class: 0x25 COMMAND_CLASS_SWITCH_BINARY
class: 0x26 COMMAND_CLASS_SWITCH_MULTILEVEL_V3
class: 0x86 COMMAND_CLASS_VERSION_V2
class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
class: 0x5A COMMAND_CLASS_DEVICE_RESET_LOCALLY
class: 0x27 COMMAND_CLASS_SWITCH_ALL
class: 0x73 COMMAND_CLASS_POWERLEVEL
class: 0x7A COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2

EN

Routing slave
This Z-Wave product will be used as slave. Slave nodes are nodes in a Z-Wave network that receive commands and perform actions based on the command. A routing slave can route Z-Wave messages to other nodes in the network.

Always on slave
The Z-Wave plus role type of this routing slave product is ‘slave always on’.
That means that this device is always awake and does not go to sleep mode because it is an AC powered device. It is always available for communication with a controller.

This device can also act as a wireless repeater to forward commands for another device in the Z - Wave network to expand the range of the network. This function works for every Z - Wave device from any manufacturer when included into the same Z - Wave network. Unlike a normal slave a routing slave can store a number of static routes which he uses to send a routed RF frame to another node.

Include initiator
The include initiator is used when Primary and Inclusion Controllers include nodes into the network. When both the include initiator have been activated simultaneously the new node will be included to the network (
if the node was not included previously)

Exclude initiator
The exclude initiator is used by Primary Controllers to exclude nodes from the network. When the exclude initiator and a slave initiator are activated simultaneously, it will result in the slave being excluded from the
network (and reset to Node ID zero). Even if the slave was not part of the network it will still be reset by this action.

Z-Wave compatibility
Because this is a Z-Wave device, it means it can co-operate with other Z-Wave devices of other manufacturers. It can co-exist in a Z-Wave network existing with product from other manufacturers.

Hops & retries
The Z-Wave range has a range of up to 40 meters in line of sight. This signal is not limited to the 40 meters range due to routing the Z-Wave message to other nodes in the network. This way the range of the Z-Wave network can be expanded to 160 meters indoors (limit of 4 hops).

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
With the Z-Wave plus info get command you can request the Z-Wave plus information of the Shuttle LZ. The information contains

- Role Type: Always On Slave
- Node Type: Z-Wave Plus Node
- Installer Icon: Window Covering Endpoint Aware
  This will be shown on a GUI as the following icon:

- Installer Icon: Window Covering Endpoint Aware
  This will be shown on a GUI as the following icon:

0x20 COMMAND_CLASS_BASIC
The basic command class has a supporting role.

The supporting role of the basic command class is mapped to the switch multilevel command class.
Where

- 0x00 is fully closed
- 0x01 – 0x63 is a curtain rail position.

However there is one exception compared to the switch multilevel command class.

- 0xFF is always fully open (regardless of the current position or last known active state)

COMMAND_CLASS_ASSOCIATION_V2
The Association Command Class is used to associate other devices with the Shuttle LZ.

The Shuttle LZ only has 1 supported association group. This group holds the lifeline to the controller according to Z-Wave Plus standards.

Group 1: lifeline
Maximum supported nodes per group: 1

The node associated in this group will receive an unsolicited SWITCH_MULTILEVEL_REPORT frame every time the position of the curtain rail is changed, where the value represents the (changed) position.

It is most likely that a controller or screen is associated in this group to (unsolicited) report any changes to the curtain rail position.

Specific group report
Because there is only association group the reported group with this command is always group 1.

COMMAND_CLASS_ASSOCIATION_GRP_INFO
The Shuttle LZ supports only 1 association group.

Group 1 Name:
- Size: 8
- Name: 'Lifeline'

Group 1 Info
- Mode: 0
- Profile: 0x0001
  - Main profile : General (0x00)
  - Sub profile : Lifeline (0x01)
- Event Code: 0

Group 1 command list
- List length: 1
- COMMAND_CLASS_SWITCH_MULTILEVEL

NOTE: All other groups report list length 0.

EN

COMMAND_CLASS_SWITCH_BINARY
The Switch Binary command class can be used to turn the Shuttle LZ fully open or fully closed.
Value:
- 0x00: Close
- 0xFF: Open

COMMAND_CLASS_SWITCH_MULTILEVEL_V3
The switch multilevel set command class is used to set the light to a preferred position.
- Values 0 – 99 (%) are used to set the position

The switch multilevel start level change command is used to start open/close the curtain.
This level change is stopped when
- Stop multilevel start level command is received
- The curtain reached an end position (fully open or full closed)

Supported Report
Because of version 3 of this command class the Shuttle LZ responds with the following types.

- Primary Switch Type: 0x03
  - 0xFF is Open
  - 0x00 is Closed
- Secondary Switch Type: 0x00
  (NOT SUPPORTED)

NOTE 1: due to the limitations of this type of multilevel, a curtain rail the *Duration* byte of the SWITCH_MULTILEVEL_SET and SWITCH_MULTILEVEL_START_LEVEL_CHANGE command is used as an timeout offset to start the changed position
Example 1:
- Curtain rail has position 50%
- Shuttle LZ receives SWITCH_MULTILEVEL_SET command with *value* 80% and *duration* 0 seconds.
- The curtain rail is directly moved to position 80%

Example 2:
- Curtain rail has position 50%
- Shuttle LZ receives SWITCH_MULTILEVEL_SET command with *value* 20% and *duration* 10 seconds.
- The curtain rail is moved to position 20% after 10 seconds.

NOTE 2: due to the limitations of this type of multilevel, a curtain rail the *Start Level* byte of the SWITCH_MULTILEVEL_START_LEVEL_CHANGE command is ignored in all cases.

COMMAND_CLASS_VERSION_V2
This command class is used to obtain information about the Shuttle LZ. The Z-Wave library type, the Z-Wave protocol version and the application version will be reported.

Because this product supports version 2 it reports the additional information: hardware version and number of firmware targets.

COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
This will report information about the manufacturer. This product will contain the manufacturer ID of Forest Group NL.

Manufacturer ID of Forest Group NL is 0x0207, the ID of this product is 39.

Because the version 2 is supported this command class can also be used to request the serial number of the device with the DEVICE_SPECIFIC_GET command.

COMMAND_CLASS_DEVICE_RESET_LOCALLY
When the product is excluded manually the DEVICE_RESET_LOCALLY_NOTIFICATION command is sent to node associated in the lifeline association group.

COMMAND_CLASS_SWITCH_ALL
The Shuttle LZ supports switch all functionality and therefore can be in included in a switch all broadcast.

If Shuttle LZ is configured to switch all mode:

0x00 : is excluded from all switch on/off functionality.
0x01 : is excluded from the all on but not the all off.
0x02 : is excluded from the all off but not the all on.
0xFF : All on and all off are both included.

COMMAND_CLASS_POWERLEVEL
The Power level Command Class defines the RF transmitting power. This command is used to test the connectivity of a network. This command class makes it possible for supporting controllers to SET/GET the RF transmitting power level of a node and test specific links between nodes in the network.

COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2
The Shuttle LZ supports OTA (Over-The-Air) update.
This means that it is possible to update your firmware using Z-Wave. To accomplish this a capable controller is needed.

Technical specification of the **FOREST SHUTTLE® S / M / L Z-Wave**

Region	Frequency	Shuttle® S Z-wave	Shuttle® M Z-wave	Shuttle® L Z-wave
EU	868.4MHz:	N/A	5232000004	5232000002
US	908.4MHz:	5232000005	5232000006	N/A
ANZ	921.4MHz:	N/A	5232000008 (no stock)	5232000007
IN	865.2MHz:	N/A	5232000010 (no stock)	5232000009
Voltage Shuttle®:		24V DC	24V DC	100 - 240V~ 50 - 60Hz 0.8A
Max. power:		40W	72W	40W
Torque:		1.0Nm	1.5Nm	1.0Nm
Speed 1:		14 cm/s	14cm/s	14 cm/s
Speed 2:		17 cm/s	17cm/s	17 cm/s
Max. curtain weight:		40kg (straight track)	70kg (straight track)	40kg (straight track)
Length:		20cm (7.9”)	25 (10”)	28cm (11”)
Net. weight motor:		700 gr.	980gr.	930 gr.
Protection degree:		IP20	IP20	IP20
Max. running time (in one direction):		240 sec.	240 sec.	240 sec.
Sound level:		< 40dB	< 40dB	< 40dB
Ambient temperature:		0 - 40°C (32 - 104°F)	0 - 40°C (32 - 104°F)	0 - 40°C (32 - 104°F)
Relative humidity:		10 – 80%	10 – 80%	10 – 80%
Maximum useable altitude above sea level:		2000m (6561ft.)	2000m (6561ft.)	2000m (6561ft.)
Certification & Marking:		CE	CE	CE

EN

TECHNICAL SPECIFICATION POWER SUPPLY:

	Shuttle® S:	Shuttle® M Receiver:
Model:	ZDA240150	ZF120A-2403000
Voltage input:	100 - 240V~ 50 - 60Hz 0.8A	100 - 240V~ 50 - 60Hz 1.2A
Voltage output:	24V DC	24V DC
Insulation class:	II	II
Certification & Marking:	CE, cULus, FCC, CCC	CE, cULus, FCC, CCC

When using any other or a central power supply, each Shuttle® S needs to be fused using a 2.5A slow fuse.
Each Shuttle® M Receiver needs to be fused using a 4A slow fuse.

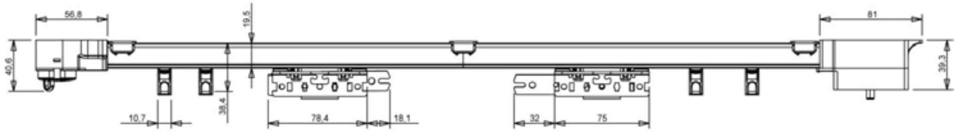
Country/Region of the **FOREST SHUTTLE® S / M / L Z-Wave**

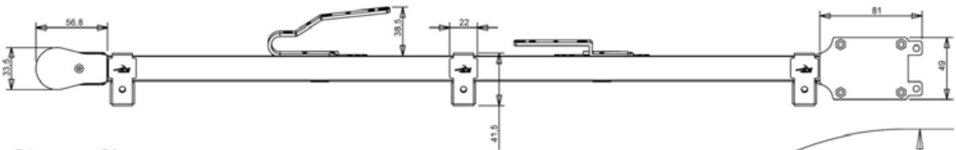
EU	868.4MHz	Europe (CEPT), China, Malaysia, UAE
US	908.4MHz	USA, Canada, Brazile
ANZ	921.4MHz	Australia, New Zealand
IN	865.2MHz	India

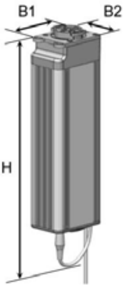
The Forest Shuttle is not suitable for humid spaces, like bathrooms or outdoors.
It is important for the safety of persons to follow these instructions. Save these instructions.
Do not use the product for any other purpose than intended. In order for the Forest Shuttle S / M / L to function correct and safe, the complete curtain system must be assembled with original parts and devices of Forest Group Nederland B.V. This includes all components of the curtain track and power supply adapter.
Forest Group does not take liability for resulting damages to property or personal injury, defects, labour on location, service calls, reinstallation or expenses involved shipping, packing or returning goods, if the product has been abused/modified in any way or damaged by improper use or failure to observe these operating instructions.
The warranty/guarantee will expire

Do not allow children to operate the system or controls. Keep remote controls away from children.
Frequently examine the installation for imbalance and signs of wear or damage. Do not use if repair or adjustment is necessary.

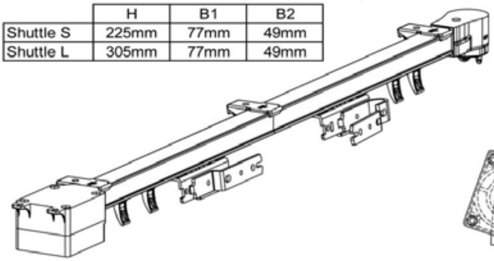
Sizes and dimensions of the track and **FOREST SHUTTLE® S / M / L Z-Wave**

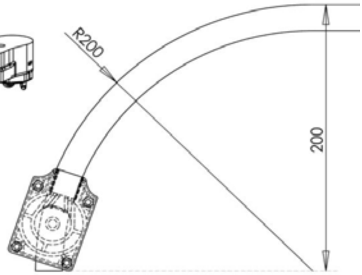






	H	B1	B2
Shuttle S	225mm	77mm	49mm
Shuttle L	305mm	77mm	49mm





EU Declaration of Conformity

Hereby we, the undersigned:

Manufacturer:	Forest Group Nederland B.V.
Address, city:	Ewygenweg 42, 7418 AM Deventer
Country:	The Netherlands
Telephone number:	+31 0570 622 650

Declare that this DoC is issued under our sole responsibility and that this product is:

Product description:	Electronic motorized curtain track system
Type designation(s):	Shuttle L
Trademark:	Forest

Object of the declaration:

The object is in conformity with the relevant Union harmonization legislation:

☒	Radio Equipment Directive – 2014/53/EU		
☒	**Article 3.1(a)**	☒	**Article 3.2**
	EN 62368-1:2014 + A11:2017		EN 300 220-1 V3.1.1 (2017-02)
			EN 300 220-2 V3.1.1 (2017-02)
☒	**Article 3.1(b)**		
	EN 301 489-1 V2.2.3 (2019-11)		
	EN 301 489-3 V2.1.1 (2019-03)		

☒	RoHS Directive – 2011/65/EU

Signed for and on behalf of:

Place: Deventer
Date: June 12th 2022

Name: M.P. de Lange
Function: Product Engineer

Signature: