# Window lifter requirements:

WLRD-01 Window lifter is the module responsible to control the window movement.

WLRD-02 Window lifter is controlled by two switches that indicate the direction of the window movement.

## Window behavior:

WLRD-03 For this purpose the window has to be emulated using a 10 led bar.

WLRD-03 The color of this led bar has to be RED.

WLRD-03 The movement of the window has to be simulated turning on/off the LEDS creating the animation of the window movement.

WLRD-04 The time between each transition shall be 400 msec.

WLRD-03 Window movement graphical description:

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CLOSED OPEN

WLRD-05 There are two possible window movements:

-Up

-Down

WLRD-06, WLRD-07 Each window movement has to be indicated trough a led color. Depending on movement each led has to be turn on.

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| Movement | LED indicator color |
| UP | BLUE |
| Down | GREEN |

## Button Behavior:

WLRD-08 In order to consider a validate button press; the button has to be pressed at least 10 msec.

WLRD-09 The module has to be able to detect fail button press. In that case the button press or button combination has to be considered as invalid.

WLRD-10, WLRD-11, WLRD-12, WLRD-13In case than a valid button press is detected the module has to follow the next behavior depending on the button pressed.

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| Button Press | Time | Action |
| UP | >500 msec | The window shall UP until get totally CLOSED while the button keep press. |
| DOWN | >500 msec | The window shall DOWN until get totally OPEN while the button keep press. |
| UP | <500 msec | The window shall UP until get totally CLOSED automatically. (Function one touch) |
| DOWN | <500 msec | The window shall DOWN until get totally OPEN automatically. (Function one touch) |

## Anti-pinch functionality:

WLRD-14 Anti pinch is a feature than prevents accidents between window and some human body parts like arms, hands, head….

WLRD-15 In this case the signal than indicates to the module the detection of a pinch will be a push button.

WLRD-16 Anti pinch button press has to follow the same characteristics than UP and DOWN buttons for valid press.

WLRD-17 This signal just can be considered as valid when the movement is UP.

WLRD-18 If this signal is valid then the module has to stop the UP Movement and then DOWN the window until the window get totally OPEN.

WLRD-19 After window is totally OPEN the module has to ignore during 5 seconds all button press.

WLRD-19 After this time the module has to recognize every button press.