



# Birdly® V2 Definition and Specifications

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**SOMNIACS**

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## Document Information

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# Birdly® Definition and Specifications

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## 1 General Information



**The product complies with the requirements of the applicable European directives. The conformity was declared. The documents to which the declaration relates and the original declaration of conformity are available upon request.**



## 2 Specifications

### 2.1 General Specifications

<b>Manufacturer</b>	SOMNIACS AG, Herostrasse 9, 8048 Zürich, Switzerland
<b>Product Name</b>	Birdly® V2
<b>Product Description</b>	Small scale 3 degree of freedom, virtual reality capable, full body motion simulator with electrical motion system
<b>Harmonized System Code (Tariff Code, Import Duty &amp; Taxes)</b>	9504.5000 / 9504.9000



## 2.2 Mechanical Specifications

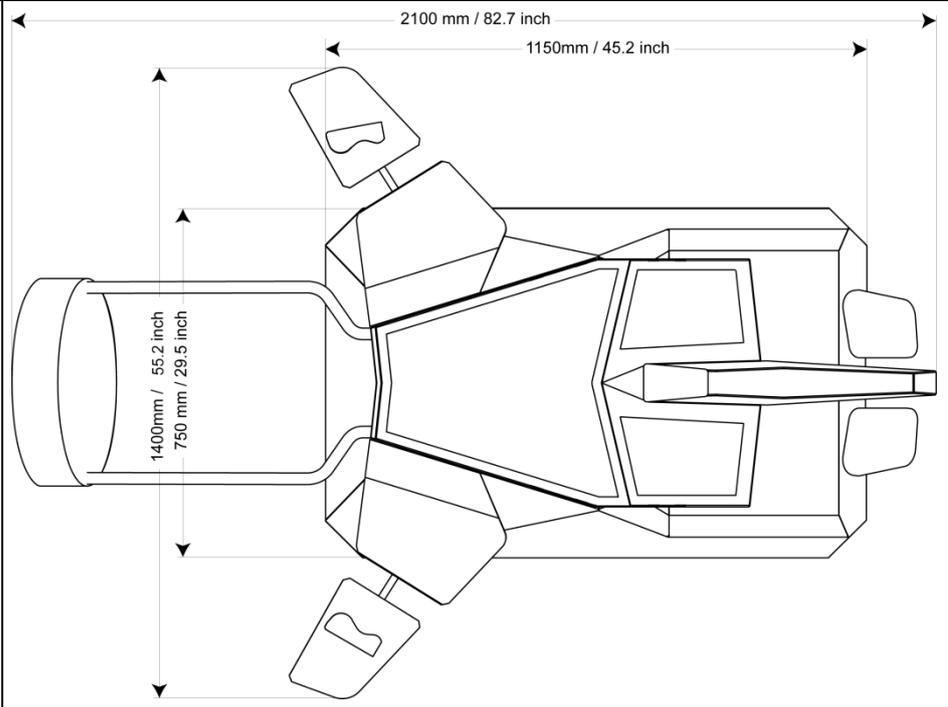
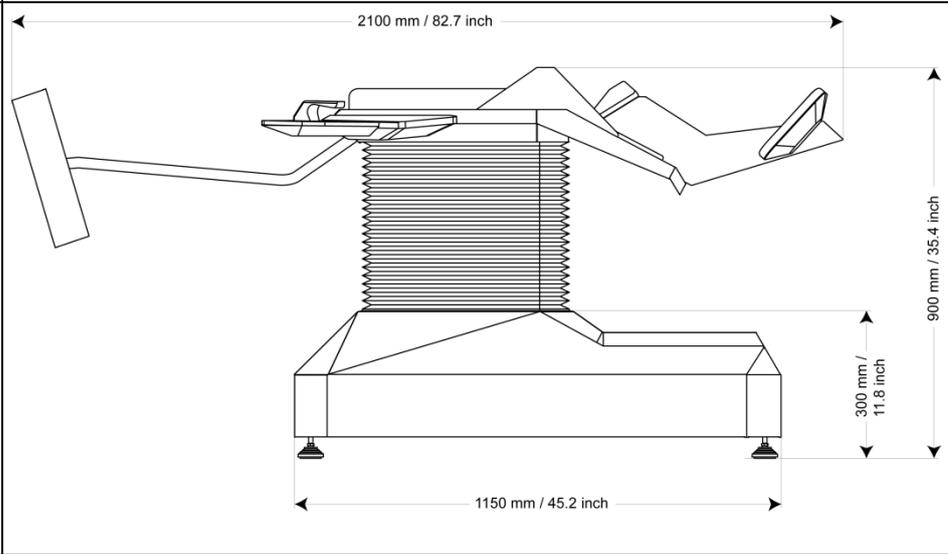
<b>Architecture</b>	Three degrees of freedom, floating center, heave-pitch-roll
<b>Actuation</b>	Electromechanical Linear Drives
<b>Security / Emergency</b>	Emergency stop with secondary release button on the remote, stopping the machine immediately.
<b>Enclosure Type</b>	IP 20 / NEMA Type 1
<b>Approximate Unit Weight (Main Platform)</b>	145 kg / 320 lbs
<b>Approximate Unit Weight (Remote)</b>	15 kg / 33 lbs

## 2.3 Environment Specifications / Requirements

<b>Mounting Specification</b>	Level floor
<b>Anchoring</b>	Not necessary
<b>Floor Load Capacity</b>	250 kg/m <sup>2</sup> (51.2 lbs/ft <sup>2</sup> )
<b>Operation Environment</b>	Indoor use only, dry environment, humidity < 70%
<b>Temperature Limits (Operation)</b>	10°C - 25°C (50°F – 77°F)
<b>Temperature Limits (Storage)</b>	5°C - 40°C (41°F – 104°F)
<b>Backup Fuse</b>	13A (@230V) / 20A (@110V)
<b>Electrical Fault Protection</b>	RCD/ GFCI (ground fault circuit interrupter)



## 2.4 Dimensions

<b>Top View:</b>	 <p>2100 mm / 82.7 inch</p> <p>1150 mm / 45.2 inch</p> <p>1400 mm / 55.2 inch</p> <p>750 mm / 29.5 inch</p>
<b>Side View:</b>	 <p>2100 mm / 82.7 inch</p> <p>1150 mm / 45.2 inch</p> <p>900 mm / 35.4 inch</p> <p>300 mm / 11.8 inch</p>
<b>Minimum Area of Operation</b>	<p>3m x 3m x 2.2m (L x W x H)</p> <p>118" x 118" x 86" (L x W x H)</p>



## 2.5 Packing

<b>Nominal Width</b>	900 mm / 35.4"
<b>Nominal Height</b>	1280 mm / 50.4"
<b>Nominal Length</b>	1500 mm / 59.1"
<b>Remote Nominal Width</b>	300 mm / 11.8"
<b>Remote Nominal Height</b>	1120 mm / 44.1"
<b>Remote Nominal Length</b>	500 mm / 19.7"
<b>Weight (Total Package, depending on configuration)</b>	255 kg / 552 lbs (minimum) 350 kg / 772 lbs (maximum)

## 2.6 Actuator Performance Specifications

<b>Payload Mass Limit (max. User Weight)</b>	180 kg (396 lbs)
<b>Heave (max. displacement / vel. / acc.)</b>	± 150 mm; ± 200mm/s; 0.4m/s <sup>2</sup> (0.04g)
<b>Pitch (max. displacement / vel. / acc.)</b>	± 15°; 63°/s; 118°/s <sup>2</sup>
<b>Roll (max. displacement / vel. / acc.)</b>	± 15°; 57°/s; 107°/s <sup>2</sup>
<b>Yaw (max. displacement / vel. / acc.)</b>	Not actuated



## 2.7 Electrical Specifications

<b>Main Supply Voltage</b>	100 - 240 VAC, Single Phase, Grounded
<b>Net Frequency</b>	50Hz/60Hz
<b>Power Rating</b>	1200 W
<b>Average Power Consumption</b>	~600 W in permanent operation
<b>Leakage Current</b>	<5 mA
<b>Fusing (Internal)</b>	Separate fuses for low-voltage circuitry (24V and 48V) and VR computer
<b>Control Voltage</b>	48VDC/24VDC

## 2.8 VR Computer Specifications

<b>Main Processor</b>	>= Intel i7-9700F @4.7Ghz
<b>Graphics Processor</b>	>= Nvidia RTX 2080 Ti
<b>Installed Memory</b>	>= 32 GB DDR3, Dual Channel
<b>Hard Disk</b>	>= 1000 GB SSD NVMe

Specifications might be upgraded in the current version

## 2.9 Recommended HMD Specifications

<b>Manufacturer</b>	Valve
<b>Product ID</b>	Index



## 2.10 Connectivity Specifications

<b>Video</b>	>= 1x HDMI 1.4 (For External Screen), 1x DisplayPort 1.2 (for HMD)
<b>USB</b>	3x USB 3.0 (Main Platform, for general use) , 2x USB 3.0 (Top Platform, for HMD and Keyboard/Wi-Fi)
<b>Network</b>	1x RJ45 connector (10/100/1000 Mbit)
<b>Other</b>	1x D-Sub25 connector (remote-control connection)
<b>Main Power</b>	IEC-60320 C19/C20 (Socket on the machine) Mains Cable Included for 220-240V only: CEE 7/4 Schuko (Plug). Length 5m
<b>Peripheral Power</b>	>= 1x 12VDC (Base Connectorbox for HMD & Tracker) 1x 12VDC (Top Platform for HMD)



## 2.11 Material Specifications

<b>Base Platform</b>	Sheet steel <sup>1</sup> (powder coated); Aluminium <sup>1</sup> ; Electronics <sup>12</sup> (EC compliant)
<b>Top Platform</b>	Sheet steel <sup>1</sup> (powder coated); Aluminium <sup>1</sup> ; Electronics <sup>12</sup> (EC compliant)
<b>Wings</b>	Steel <sup>1</sup> ; MDF <sup>2</sup> (powder coated); ABS <sup>3</sup> ; Electronics <sup>12</sup> (EC compliant)
<b>Shin Rests</b>	Steel <sup>1</sup> ; MDF <sup>2</sup> (powder coated); ABS <sup>3</sup> ;
<b>Cushions</b>	MDF <sup>2</sup> ; PU-Foam <sup>3</sup> ; Synthetic Leather <sup>2</sup> ;
<b>Bellow</b>	Sheet steel <sup>1</sup> ; Composite-textile <sup>3</sup> ;
<b>Fan</b>	MDF <sup>2</sup> (Pu-Coated); ABS <sup>3</sup> ; Electronics <sup>12</sup> (EC compliant)
<b>Fan Rods</b>	Steel <sup>1</sup> (powder coated)
<b>Net</b>	Polyester (PES) <sup>3</sup>
<b>Flammability</b>	All materials marked with <sup>1</sup> are Class A1, EN 13501-1 All materials marked with <sup>2</sup> are Class B, EN 13501-1 All materials marked with <sup>3</sup> are Class D-E, EN 13501-1