



Getting started

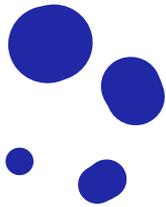
Created by

Smartbox

Grid Pad Grid 3

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Lumin-i

Powered by Smart Eye

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Introducing Lumin-i

Lumin-i is a powerful and accurate **eye gaze camera** created by Smartbox and powered by Smart Eye.

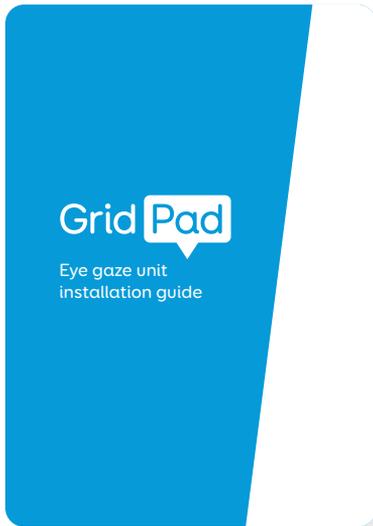
Key features include incredibly responsive eye tracking for fast performance, powerful infrared transmitters for outdoor use and a large track box that tolerates a wide range of head movements and positions.

Built into the Grid Pad purpose-built camera unit, Lumin-i is designed for use with Grid Pad 12 and Grid Pad 15 – allowing you to turn your communication aid into a robust and dedicated eye gaze device.



Lumin-i eye gaze unit

Installing Lumin-i



Please refer to your **Grid Pad eye gaze unit installation guide** for information on how to attach Lumin-i to your Grid Pad safely.

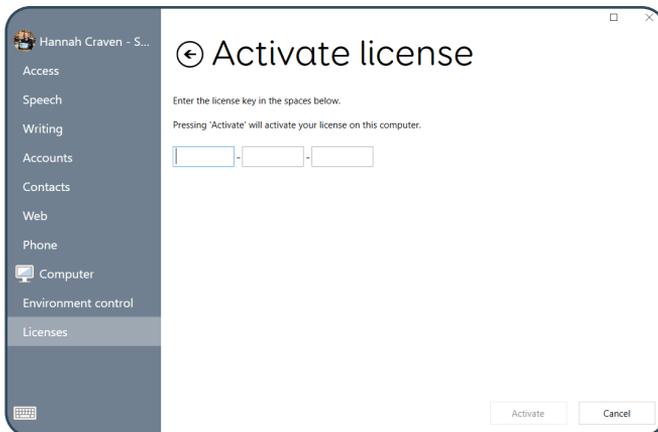


Grid Pad with Lumin-i eye gaze unit

Getting started

To get started you will need to **install** the Lumin-i software drivers on your Grid Pad and **activate** your Lumin-i licence. Your device must be connected to the internet to download the driver and licence the camera.

- 1 Download the Lumin-i installer from our website: **thinksmartbox.com/lumin-i-installer**
- 2 Activate your Lumin-i licence in Grid 3: **Menu - Settings - Licences - Activate**
- 3 Once you have activated Lumin-i you will see a Windows Firewall prompt. Select **Allow access**.



You can also activate your licence in Licence Manager: **Windows Start Menu - Licence Manager**.

For guidance on **positioning** and **calibrating** your Lumin-i camera please refer to the manual supplied with your Grid Pad device.

Your Lumin-i camera is calibrated within Grid 3 under **Settings - Access - Eye gaze**.

Support

If you are experiencing any issues setting up or using Lumin-i, our support team are here to help:

thinksmartbox.com/support.



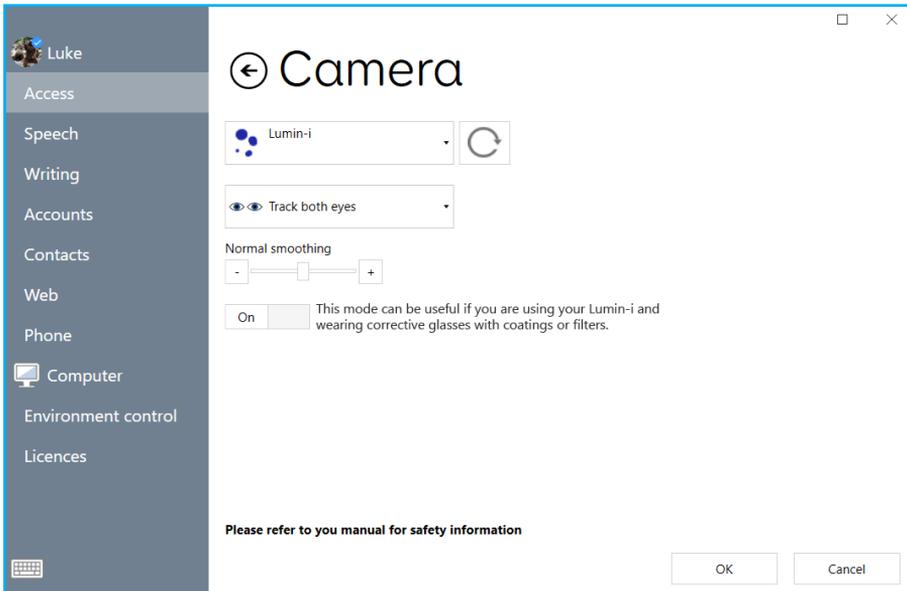
Anti-reflection mode

Your Lumin-i camera has an anti-reflection mode that improves its performance in certain situations.

This mode can be useful if you are using your Lumin-i and wearing corrective glasses with coatings or filters.

You can toggle this mode on in Grid 3's eye gaze settings.

Settings - Access - Eye gaze - Camera



Epilepsy warning

This mode can create a strobing effect with the LEDs of the Lumin-i hardware and when using the live monitor on screen.

See Epilepsy warnings for more information (page 19)

System requirements

Device

Grid Pad 12 (2018)

Grid Pad 15 (2020)

Operating system

Windows 10 Anniversary Update (version 1703) or newer

Software

Grid 3

RAM

4 GB

CPU

Quad core 6th generation Intel Core or Intel Xeon processor or newer

Camera interface

USB 3.0

Maximum screen size

24" (16:9 aspect ratio)

Safety and compliance

Model number

Lumin-i-kit-12/15

Description

Lumin-i is an eye gaze camera that is part of the Grid Pad Eye gaze unit.

When the eye gaze unit is connected to a Grid Pad 12 or 15, it allows user to operate the Grid Pad device with their eyes.

Additional information

See your Grid Pad 12 or 15 manual for further information on the safe use of your Lumin-i, Grid Pad and Grid 3 together.

Safety standards

IEC 62368

IEC 62471

Declaration of conformity

EU Directive 2014/30/EU (EMC)

EU Directive 2011/65/EU (RoHS)

Operating temperature

The Lumin-i eye tracker has been tested at normal operating conditions during a 24 hours period with an ambient temperature of 25 degrees.

After approximately one hour of use the device reaches a stable temperature which is maintained until the tracker is turned off.

The maximum temperature on the outside of the device was 36 degrees during the test.

The Lumin-i eye tracker is designed with a good margin to operate at a temperature of 36 degrees and neither the function nor the lifespan of the product is adversely affected. The temperature 36 degrees is not harmful to the user, although the device may be experienced as unexpectedly warm to the touch.

Product care

For optimal tracking, please keep your eye gaze unit clean.

Use a dry microfibre cloth to carefully wipe the front of your camera unit.

Avoid using any harsh cleaning chemicals.

Warranty

Your Lumin-i is covered under the standard 2 year warranty from the time of purchase.

Repairs and Maintenance

Your Lumin-i camera unit is not a user serviceable device. If your device requires a repair, please contact your local dealer.

Symbol explanation

Symbol	Meaning
	Conformity European symbol to declare conformity with EU legislation.
	Federal communications commission symbol to declare conformity with US legislation.
	Waste electrical and electronic equipment symbol to indicate you should dispose of this equipment in accordance with local regulations.
	Read the manual symbol
	Read the manual symbol

Intended use, user and environment

Lumin-i has been tested as a **Class 1 medical device** when used with the Grid Pad 12 or 15. Specifications and standards have been listed in the Compliance section of this manual.

Please consider these safety warnings to ensure safe operation of your Lumin-i camera and Grid Pad.

Intended Use

- It is used as an access method for a voice output communication aid (VOCA)
- It is used to control a Windows computer

Intended User

It is designed for individuals with complex communication and/or access needs. Complex communication and/or access needs may arise as a result of a variety of conditions including but not limited to:

- Developmental disorders, e.g. cerebral palsy, developmental verbal dyspraxia, autistic spectrum disorder (ASD), developmental language disorder (DLD), global delay.
- Acquired disorders, e.g. cardiovascular accident

(CVA/stroke), dementia, traumatic/acquired brain injury (TBI/ABI)

It may also be used by individuals with complex access needs in the absence of communication difficulties for computer control, environmental control and non-face-to-face communication e.g. including but not limited to individuals with:

- Spinal cord injury
- Degenerative neuromuscular disease (e.g. muscular dystrophy, spinal muscular atrophy)

Intended environment

It can be used in a variety of settings in which the individual is likely to wish to utilise it for the above intended use. These settings may include but are not limited to:

- private homes
- supported living homes
- nursing care facilities
- schools, colleges, universities
- in the community, e.g. shops, restaurants
- hospitals (acute, rehabilitation and community)

Significant contra-indications, warnings and precautions

Although designed to assist with expressive communication, it should be used in combination with a range of augmentative and alternative communication (AAC) methods and therefore should not be relied on in isolation to enable an individual to communicate expressively.

Other methods of AAC may include the use of paper-based systems, sign language or the use of eye pointing frames.

Despite this, it is recognised that individuals with significant communication and/or access difficulties will rely heavily on a VOCA (in this instance a Grid Pad 12 or 15) to communicate given the significant enhancement to expressive communication that a VOCA often brings.

Although designed and manufactured to be extremely robust and reliable, it is possible to lose function due to power loss or other technical issues. For this reason, it should not;

- be used as a life supporting device.

- be relied upon for well-being.
- be relied upon as the user's only way of making an emergency call or alarm.
- be used to administer medicine.
- be relied upon as the only method of interaction with EC devices.

It is also not intended to provide information which is used to take decisions with diagnosis or therapeutic purposes.

When the device is working with other equipment, there may be interference. For this reason, Grid Pad should not be used:

- in an MRI environment.
- in an X-ray environment.
- in a military environment.
- in a harsh RF environment.

Epilepsy warning

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns that may appear when viewing the track status. Even people who have no history of seizures or epilepsy may have an undiagnosed condition that can cause these “photosensitive epileptic seizures” while using Anti-reflection compensation built in to eye tracking technology.

Anti-reflection compensation changes the behaviour of the Infrared LED’s in the camera from a constant illumination to a strobing illumination.

This only occurs when the anti-reflection setting is enabled in Grid 3, and is most visible when viewing the live video monitor of the camera. If you or anyone else using the system experiences any issues from either the infrared strobing or the live video monitor please immediately stop using the eye gaze camera and consult a doctor.

Seizures may have a variety of symptoms, including light headedness, altered vision, eye or face twitching, jerking or shaking of arms or legs, disorientation, confusion, or momentary loss of awareness. Seizures may also cause loss of consciousness or convulsions

that can lead to injury from falling down or striking nearby objects.

You may reduce risk of photosensitive epileptic seizures by taking the following precautions:

- Use in a well-lit room.
- Do not use Anti-reflection mode if the user is drowsy or fatigued.
- If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before using eye tracking technology.

Manufacturer

Lumin-i is manufactured by Smartbox Assistive Technology Ltd.

thinksmartbox.com

United Kingdom

Smartbox Assistive Technology Ltd

Ysobel House, Enigma Commercial Centre
Sandys Road
Malvern
WR14 1JJ

United States

Smartbox Assistive Technology Inc

2831 Leechburg Road
New Kensington
PA, 15068

Europe

Smartbox Assistive Technology (EU) Ltd

JPA Brenson Lawlor house,
Argyle Square,
Morehampton Road,
Donnybrook,
Dublin 4

Other safety

Incidents

If a serious incident has occurred in relation to the device, please report to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

Disposal

Dispose of in line with local electronic waste regulations.

Technical specification

Sampling rate	60 Hz
Tracking box	35 x 30 cm at 65 cm distance
Operating distance	45 - 85 cm
Accuracy	0.5 degrees (typ.)
Precision	0.1 degrees (typ.)
Output data	Gaze point, pupil diameter, time stamp. All outputs as binocular data with associated quality index.
Blink Recovery Time	1 frame (immediate)
Gaze Recovery Time	1 frame (immediate)
Latency	25 ms from camera exposure
Eye tracking principle	Dark pupil and corneal reflection
Maximum screen size	24" (16:9 aspect ratio)
Size	268 x 13 x 32 mm (width x height x depth)
Weight	147 g
Cable Length	2 m
Camera Interface	USB 3.0
Operating System	Windows 10

Smartbox Support

Getting help online

Our website has many guides and articles to help you with more specific questions.

Visit our knowledge base

thinksmartbox.com/knowledge-base

Online chat

You can chat with our Support team online using the chat window on our website: **thinksmartbox.com**. If we are not available, you can leave a message and we will get back to you as soon as possible.

Contact

support@thinksmartbox.com

UK: +44 (0) 1684 578868

US: (844) 341-7386

If you purchased Lumin-i in another country, contact your local Smartbox Partner. Find a list of our international Partners on our website: **thinksmartbox.com/where-to-buy**.



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