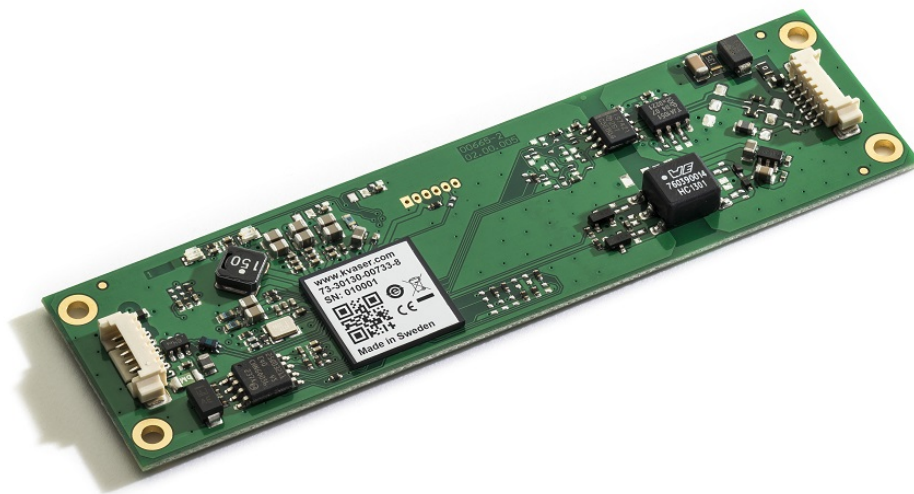


# Kvaser Leaf Light v2 CB User's Guide



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<http://www.kvaser.com>

Printed Tuesday 29<sup>th</sup> April, 2014

We believe that the information contained herein was accurate in all respects at the time of printing. Kvaser AB cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by Kvaser AB.

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## 1 About this manual

This document describes a printed circuit board assembly version of the Kvaser Leaf Light v2. It contains a description of the hardware properties, its physical dimensions and instructions for connecting the device to a CAN bus and a USB bus. For further information, please refer to the Kvaser Leaf Light v2 User's Guide.

## 2 Welcome to Kvaser Leaf Light v2 CB

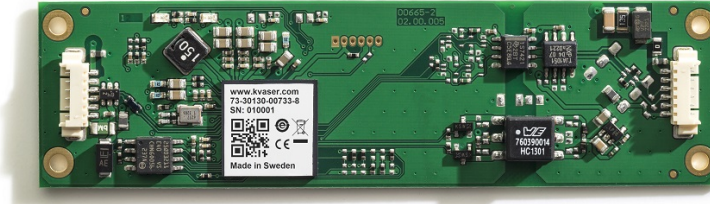


Figure 1: Kvaser Leaf Light v2 CB

This guide applies to Kvaser Leaf Light v2 CB devices listed in Table 1.

Device	Product Number
Kvaser Leaf Light HS v2 CB	73-30130-00733-8

Table 1: Kvaser Leaf Light v2 CB devices and their EAN numbers.

Throughout this document, we use the name Kvaser Leaf Light v2 CB to refer to the product listed in Table 1.



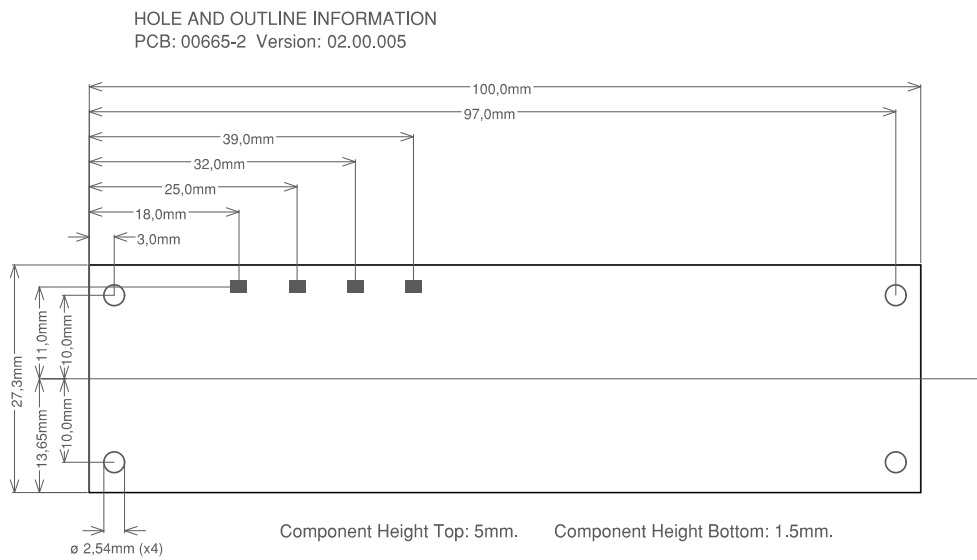


Figure 3: Outline of Kvaser Leaf Light v2 CB

## 4 Connectors

Figure 2 on Page 6 shows the placement of the USB and CAN connectors.

Both USB and CAN are connected using 6-way connectors and mate with Molex 51021 PicoBlade™ (e.g. housing 51021-0600 and terminal 50079-8000).

### 4.1 USB connector

Table 2 describes the USB connector.

Pin Number	Function
1	Shield
2	GND
3	D+
4	D-
5	VBUS
6	Not connected

Table 2: Pin configuration of the USB connector.

### 4.2 CAN connector

Table 3 describes the CAN connector.

Pin Number	Function
1	GND
2	Not connected
3	CAN_H
4	CAN_L
5	Not connected
6	Shield

Table 3: Pin configuration of the CAN connector.



## 5 LED indicators

Figure 2 on Page 6 shows the placement of the LEDs on the PCB. For further information about the LED functionality, please refer to the Kvaser Leaf Light v2 User's Guide.

## 6 Disposal and Recycling Information



When this product reaches its end of life, please dispose of it according to your local environmental laws and guidelines.

For information about Kvaser's recycling programs, visit:  
<http://www.kvaser.com/en/kvaser/recycling-policy.html>

## 7 Legal acknowledgements

### 7.1 Usage warning



#### **WARNING FOR ALL USERS**

WARNING! - YOUR USE OF THIS DEVICE MUST BE DONE WITH CAUTION AND A FULL UNDERSTANDING OF THE RISKS!

THIS WARNING IS PRESENTED TO INFORM YOU THAT THE OPERATION OF THIS DEVICE MAY BE DANGEROUS. YOUR ACTIONS CAN INFLUENCE THE BEHAVIOR OF A CAN-BASED DISTRIBUTED EMBEDDED SYSTEM, AND DEPENDING ON THE APPLICATION, THE CONSEQUENCES OF YOUR IMPROPER ACTIONS COULD CAUSE SERIOUS OPERATIONAL MALFUNCTION, LOSS OF INFORMATION, DAMAGE TO EQUIPMENT, AND PHYSICAL INJURY TO YOURSELF AND OTHERS. A POTENTIALLY HAZARDOUS OPERATING CONDITION IS PRESENT WHEN THE FOLLOWING TWO CONDITIONS ARE CONCURRENTLY TRUE: THE PRODUCT IS PHYSICALLY INTERCONNECTED TO A REAL DISTRIBUTED EMBEDDED SYSTEM; AND THE FUNCTIONS AND OPERATIONS OF THE REAL DISTRIBUTED EMBEDDED SYSTEM ARE CONTROLLABLE OR INFLUENCED BY THE USE OF THE CAN NETWORK. A POTENTIALLY HAZARDOUS OPERATING CONDITION MAY RESULT FROM THE ACTIVITY OR NON-ACTIVITY OF SOME DISTRIBUTED EMBEDDED SYSTEM FUNCTIONS AND OPERATIONS, WHICH MAY RESULT IN SERIOUS PHYSICAL HARM OR DEATH OR CAUSE DAMAGE TO EQUIPMENT, DEVICES, OR THE SURROUNDING ENVIRONMENT.

WITH THIS DEVICE, YOU MAY POTENTIALLY:

- CAUSE A CHANGE IN THE OPERATION OF THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT.
- TURN ON OR ACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- TURN OFF OR DEACTIVATE A MODULE, DEVICE, CIRCUIT, OUTPUT, OR FUNCTION.
- INHIBIT, TURN OFF, OR DEACTIVATE NORMAL OPERATION.
- MODIFY THE BEHAVIOR OF A DISTRIBUTED PRODUCT.
- ACTIVATE AN UNINTENDED OPERATION.
- PLACE THE SYSTEM, MODULE, DEVICE, CIRCUIT, OR OUTPUT INTO AN UNINTENDED MODE.

ONLY THOSE PERSONS WHO:

(A) ARE PROPERLY TRAINED AND QUALIFIED WITH RESPECT TO THE USE OF THE DEVICE,

(B) UNDERSTAND THE WARNINGS ABOVE, AND

(C) UNDERSTAND HOW THIS DEVICE INTERACTS WITH AND IMPACTS THE FUNCTION AND SAFETY OF OTHER PRODUCTS IN A DISTRIBUTED SYSTEM AND THE APPLICATION FOR WHICH THIS DEVICE WILL BE APPLIED, MAY USE THE DEVICE.

PLEASE NOTE THAT YOU CAN INTEGRATE THIS PRODUCT AS A SUBSYSTEM INTO HIGHER-LEVEL SYSTEMS. IN CASE YOU DO SO, KVASER AB HEREBY DECLARES THAT KVASER AB'S WARRANTY SHALL BE LIMITED TO THE CORRECTION OF DEFECTS, AND KVASER AB HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY OVER AND ABOVE THE REFUNDING OF THE PRICE PAID FOR THIS DEVICE, SINCE KVASER AB DOES NOT HAVE ANY INFLUENCE ON THE IMPLEMENTATIONS OF THE HIGHER-LEVEL SYSTEM, WHICH MAY BE DEFECTIVE.

## 7.2 EC Regulatory Compliance

The product(s); 73-30130-00733-8, is in conformity with the essential requirements of the following regulations and directives:

- DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 (WEEE)
- REGULATION (EC) No. 1907/2006 (REACH), Annex XIV (the 'Candidate list') and Annex XVII ('Restriction of Substances')

The products listed above also complies with DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 (RoHS) and is in conformity with the following standards and/or other normative documents:

Standard	Description
EN 50 581 (2012)	Assessment with respect to restriction of hazardous substances

Table 4: Standards and normative documents for RoHS 2011

The products listed above also complies with DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 (EMC-directive) and is in conformity with the following standards and/or other normative documents:

Standard	Description
EN 55 022 (2010)	Class B, radiated. IT equipment, commercial emission
EN 55 024 (2010)	IT equipment, commercial immunity

Table 5: Standards and normative documents for EMC 2004

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

## 7.3 Patents, Copyrights and Trademarks

All trademarks are the property of their respective owner. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

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DeviceNet is a Trademark of Open DeviceNet Vendor Association, Inc.

NMEA 2000 is the registered trademark of the National Marine Electronics Association, Inc.

The products described in this document are protected by U.S. patent 5,696,911.

## 8 Document Revision History

Version history for document UG\_98163\_leaf\_light\_v2\_cb:

Revision	Date	Changes
1	2014-04-22	First version.