

ISL76671 Low Power, <100 Lux Optimized, Analog Output Ambient Light Sensor Evaluation Hardware User Guide

Description

The ISL76671 is a low light optimized analog output sensor. In normal operation, the device is intended to be mounted behind a smoked glass/plastic bezel which normally significantly attenuates received light. The ISL76671 will typically saturate at full scale with an incident illumination of around 150 lux, which is a fair deal lower than normal indoor ambient light conditions (2k to 10k lux).

The ISL76671EVAL1Z evaluation board is an RoHS compliant evaluation board prepared to speed up part evaluation. Note that the sensing range for this device is from 0.01 lux to 100 lux typically and the device has been optimized for use with a 100kΩ output scaling resistor (R_{EXT}). The device and the evaluation board will work from a 3V supply.

Evaluation Package

- Evaluation Board ISL76671EVAL1Z, populated with all required components
- AN1741: “ISL76671 Low Power, <100 Lux Optimized, Analog Output Ambient Light Sensor Evaluation Hardware User Guide” (see [“Technical Documentation” on ISL76671 device information page](#))

Hardware Setup

The small ISL76671 evaluation board comprises the sensor device itself and a 100kΩ resistor which sets the output scaling for the sensor. The part was characterized with the 100kΩ resistor. Larger or smaller values can be used, however, Intersil found that the 100kΩ value worked well under a variety of conditions. Note that with larger scale setting resistors the sensor is likely to prematurely saturate at relatively low light levels. Please check Page 7 of the [ISL76671](#) datasheet for a description of the output scaling factor relative to incident ambient light.

The jumpers and components on the printed circuit board (PCB) are as shown in Table 1.

TABLE 1. JUMPERS, COMPONENTS ON PCB

JUMPER	DESCRIPTION
JP1	$R_{EXT} = 100k\Omega$ (Default)
JP2	$R_{EXT} = 47k\Omega$
JP3	$R_{EXT} = 147k\Omega$
JP4	$R_{LOAD} = 10k\Omega$ (Optional, Do not populate)
JP5	$R_{LOAD} = 100k\Omega$ (Optional, Do not populate)
JP6	$R_{LOAD} = 1M\Omega$ (Optional, Do not populate)
C1	0.1μF
D1	Optional
L1	Optional

