# UV 3 click

PID: MIKROE-2736

UV 3 click is an advanced ultraviolet (UV) light sensor with I2C protocol interface. The click carries VEML6070 UVA light sensor designed by the CMOS process. UV 3 click runs on either 3.3V or 5V power supply.

VEML6070 sensor features

VEML6070 is an advanced ultraviolet (UV) light sensor with I2C protocol interface and designed by the CMOS process. The active acknowledge (ACK) feature with threshold windows setting allows the UV sensor to send out a UVI alert message.
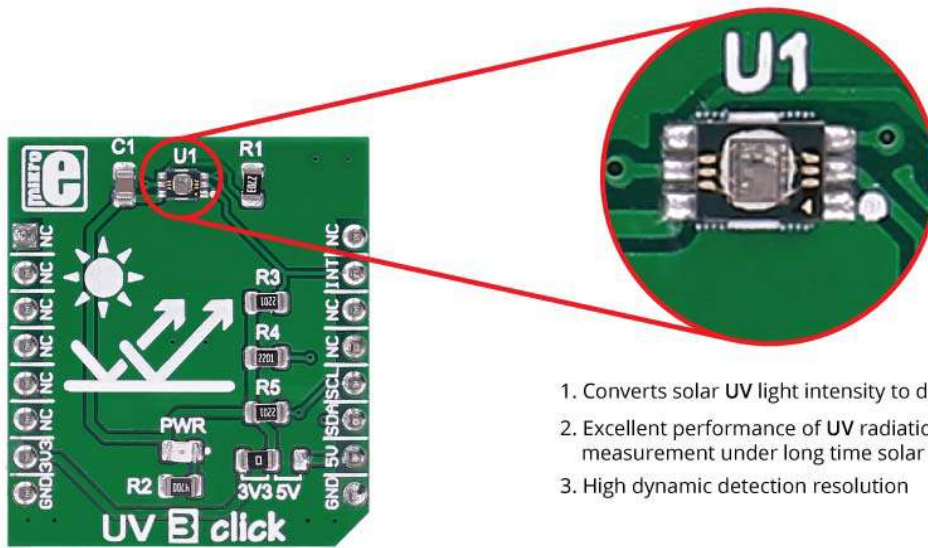
1. Converts solar **UV** light intensity to digital data
2. Excellent performance of **UV** radiation measurement under long time solar **UV** exposure
3. High dynamic detection resolution

VEML6070 incorporates a photodiode, amplifiers, and analog/digital circuits into a single chip. VEML6070's adoption of Filtron™ UV technology provides the best spectral sensitivity to cover UV spectrum sensing. It has an excellent temperature compensation and a robust refresh rate setting that does not use an external RC low pass filter. VEML6070 has linear sensitivity to solar UV light and is easily adjusted by an external resistor.

Specifications

Type	Optical
On-board modules	VEML6070 UVA light sensor
Key Features	Converts solar UV light intensity to digital data, excellent performance of UV radiation measurement under long time solar UV exposure
Key Benefits	Excellent UV sensitivity and linearity via Filtron™ technology
Interface	I2C
Input Voltage	3.3V or 5V
Click board size	S (28.6 x 25.4 mm)

Pinout diagram

This table shows how the pinout on **UV 3 click** corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikroBUS				Pin	Notes
	NC	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	**ACK**	Acknowledge pin
	NC	3	CS	TX	14	NC	
	NC	4	SCK	RX	13	NC	
	NC	5	MISO	SCL	12	**SCL**	I2C digital serial clock input
	NC	6	MOSI	SDA	11	**SDA**	I2C digital serial data output
Power supply	**+3.3V**	7	3.3V	5V	10	**+5V**	Power supply
Ground	**GND**	8	GND	GND	9	**GND**	Ground

Jumpers and settings

Designator	Name	Default Position	Default Option	Description
JP1	Logic level	Left	3.3V	Data in level Voltage Selection 3V3/5V, left position 3V3, right position 5V

Programming

Code examples for UV 3 click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

This code reads the value of UV light from VEML6070 and sends it to the user via UART.

```
01 char uartTxt [20];
02
03 void systemInit()
04 {
05     Uart5_Init (9600);
06     Uart5_Write_Text ("rnInitializing...");
07     I2C2_Init( 100000 );
08     Delay_ms (100);
09     UV_3_initDriver (0x70,I2C2_Start, I2C2_Stop, I2C2_Write, I2C2_Read);
10     VEML6070_Init();
11     Uart5_Write_Text ("rnInitialized");
12 }
13
14 void main()
15 {
16     systemInit();
17
18    while( 1 )
19     {
20          Uart5_Write_Text ("rnUV value: ");
21          IntToStr (UV_3_read(), uartTxt);
22          Uart5_Write_Text (uartTxt);
23          Delay_ms (750);
24     }
25 }
```