

# **MVC Reference Manual**

## **Mpression Machine Vision Camera**

Revision 0.1

2020/06/20



© Mpression by Macnica Group



© Mpression – Solutions by Macnica Group

#### Disclaimer

The information in this document (hereinafter called "Information") is subject to change without notice.

Macnica Inc. (hereinafter called "Manufacturer") makes no warranty of any kind regarding this document, or of any liability arising out of the application or use of information in this document, and assumes no responsibility for any errors that may appear in this document.

This document is distributed without any charge and reselling or copying without written authorization by Manufacturer is restricted.

IN NO EVENT WILL MANUFACTURER BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, EXEMPLARY, SPECIAL, OR INCIDENTAL DAMAGES, INCLUDING ANY LOST DATA AND LOST PROFITS, ARISING FROM OR RELATING TO YOUR USE OF THE INFORMATION, EVEN IF YOU HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE TOTAL CUMULATIVE LIABILITY OF MANUFACTURER IN CONNECTION WITH YOUR USE OF THE INFORMATION IN THIS DOCUMENT, WHETHER IN CONTRACT OR TORT OR OTHERWISE, WILL IN NO EVENT EXCEED THE AMOUNT OF FEES PAID BY YOU TO MANUFACTURER HEREUNDER FOR USE OF THE INFORMATION. YOU ACKNOWLEDGE THAT THE FEES, IF ANY, REFLECT THE ALLOCATION OF RISK SET FORTH IN THIS AGREEMENT AND THAT MANUFACTURER WOULD NOT MAKE AVAILABLE THE INFORMATION TO YOU WITHOUT THESE LIMITATIONS OF LIABILITY.

The Information is not intended for use in the development of on-line control equipment in hazardous environments requiring failsafe controls, such as in the operation of nuclear facilities, aircraft navigation or communications systems, air traffic control, life support, or weapons systems ("High-Risk Applications"). Manufacturer specifically disclaims any express or implied warranties of fitness for such High-Risk Applications. You represent that use of the Information in such High-Risk Applications is fully at your risk.



## Index

1. Specifications	4
1.1 General Specifications	. 4
1.2 Mechanical Specifications	. 5
1.2.1 Camera Dimensions and Mounting Points	. 5
2. Physical Interface	6
2.1 Camera Power	. 6
2.2 Opto-Coupled I/O Input Line	. 6
2.3 Opto-Coupled I/O Output Line	. 6
2.4 General Purpose I/O Lines	. 6
2.4.1 Operation as Input	. 6
2.4.2 Operation as Output	. 6
2.5 Camera Cables	. 7
2.6 Connector Pin Numbering and Assignments	. 7
3. Installation	8
3.1 Software Installation (Windows)	. 8
4. Document Revision History 2	12

# **1.** Specifications

## **1.1 General Specifications**

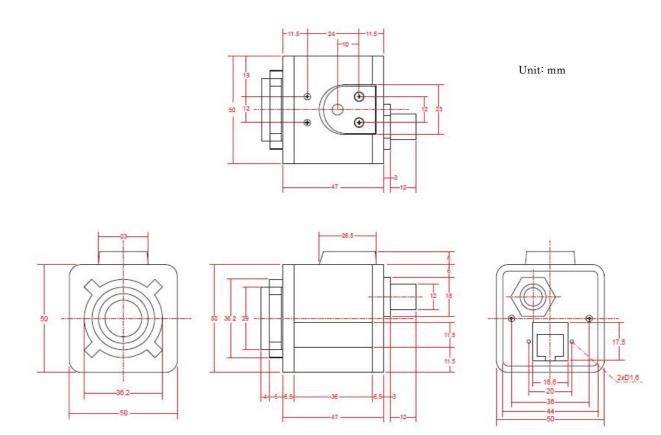
Specification	CYMVC-ON5MGS-MNGEA
Sensor Part	ON Semiconductor PYTHON NOIP3SN5000A
Sensor Type	CMOS Sensor, 5MP,
	Global Shutter
Optical Size	1"
Pixel Size	4.8 μm x 4.8 μm
Resolution	$2592 \ge 2048$
Frame Rate	22 fps (max)
Mono / Color Mono	
Pixel Formats	Mono 10bit
Supervised	Software trigger
Synchronization	Free run
Emposition Control	Auto Exposure;
Exposure Time Control	Programmable via the camera API
Power Requirements	12V DC supplied via I/O connector
Data Interface	Gigabit Ethernet
	1 opto-coupled input line
I/O Lines	1 opto-coupled output line
	1 general purpose I/O (GPIO) line
Lens Mount C-mount	
Size (L x W x H) 50mm x 50mm x 47 mm	
Weight 176 g	
Conformity	GenICam, GigE Vision
C - C - C	OCT SDK
Software	Available for Win 7 and Win 10
Accessories	Cables for your camera model

Table 1-1 General Specifications



## **1.2 Mechanical Specifications**

#### **1.2.1** Camera Dimensions and Mounting Points



# 2. Physical Interface

### 2.1 Camera Power

The operation voltage is 12 VDC. To avoid camera damage, a maximum of 18 VDC must be not exceed.

## 2.2 Opto-Coupled I/O Input Line

Voltage	Description
30 VDC	Absolute maximum voltage
0~24 VDC	Safe operation voltage
0~1.0 VDC	Logical 0
>2.2 VDC	Logical 1

## 2.3 Opto-Coupled I/O Output Line

Voltage	Description	
30 VDC	Absolute maximum voltage	
3.3~24 VDC	Safe high voltage	

## 2.4 General Purpose I/O Lines

#### 2.4.1 Operation as Input

Voltage	Description
30 VDC	Absolute maximum voltage
0~5 VDC	Safe operation voltage
0~0.5 VDC	Logical 0
>2 VDC	Logical 1

#### 2.4.2 Operation as Output

Voltage	Description	
30 VDC	Absolute maximum voltage	
2.5~5 VDC	High voltage	
0 VDC	Low voltage	

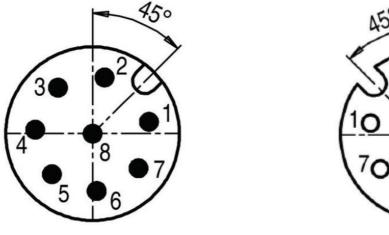


#### 2.5 Camera Cables

Ethernet Cable: Use of shielded CAT 5E or better cables with STP shielding is recommended.

I/O Cable: Connecting thread M12, 8 pins, IP67.

#### 2.6 Connector Pin Numbering and Assignments



Male Socket

 $\begin{array}{c}
 45^{\circ} \\
 70 \\
 70 \\
 60 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 70 \\
 60 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 4 \\
 70 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 8 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 4 \\
 7 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 6 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 7 \\
 6 \\
\end{array}
\begin{array}{c}
 3 \\
 7 \\
 5
\end{array}
\begin{array}{c}
 3 \\
 7 \\
\end{array}
\begin{array}{c}
 3 \\
 7 \\
\end{array}
\begin{array}{c}
 3 \\
\end{array}
\end{array}
\begin{array}{c}
 3 \\
\end{array}
\begin{array}{c}
 3 \\
\end{array}
\end{array}
\begin{array}{c}
\end{array}
\begin{array}{c}
\end{array}
\end{array}$ 

Cable Socket

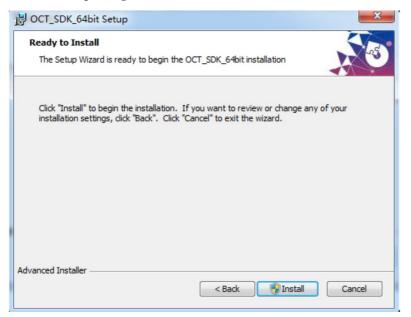
Location	Cable Color	Description		
PIN 1	White	GND		
PIN 2	Brown	Power 12 VDC		
PIN 3	Green	General purpose in/out line		
PIN 4	Yellow	Reserved		
PIN 5	Grey	Opto-coupled input line		
PIN 6	Pink	Opto-coupled output line		
PIN 7	Blue	GND for opto-coupled		
PIN 8	Red	Power for opto-coupled (Max 30VDC)		

# 3. Installation

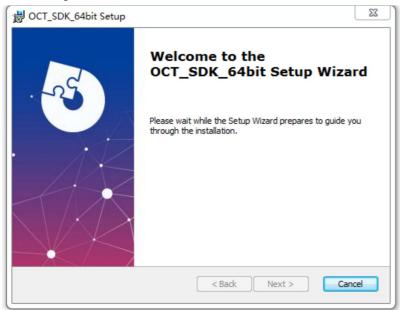
OCT SDK can run in Windows 7 or Windows 10. It includes two parts, OCT tool and OCT drivers (U3V and GigE).

### 3.1 Software Installation (Windows)

Before software installation, you should get administrator authority. Then double click the installation package "OCT SDK x64.msi".



Because installation needs to detect system components, it will wait for 2 minutes in this interface. Please be patient.





#### Then press <u>"Next" to continue.</u>

Then press Trext to continue.			
B OCT_SDK_64bit Setup			
	Welcome to the OCT_SDK_64bit Setup Wizard The Setup Wizard will install OCT_SDK_64bit on your computer. Click "Next" to continue or "Cancel" to exit the Setup Wizard.		
	< Back Next > Cancel		

Please select install folder from below interface.

🗒 OCT_SDK_64bit Setup	
Select Installation Folder This is the folder where OCT_SDK_64bit will be installed.	
To install in this folder, click "Next". To install to a different folder, enter "Browse".	it below or dick
Eolder:	
C:\Program Files (x86)\OCAM\OCT_SDK_64bit\	Browse
Advanced Installer	
< Back Next >	Cancel



B OCT_SDK_64bit Setup	X
Installing OCT_SDK_64b	t 🔊
minutes.	tup Wizard installs OCT_SDK_64bit.This may take several
Status:	
Advanced Installer	
	< Back Next > Cancel

Click "Finish" to implement installation.

B OCT_SDK_64bit Setup	
- PC	Completing the OCT_SDK_64bit Setup Wizard
	Click the "Finish" button to exit the Setup Wizard.
	☑ Launch OCT_SDK_64bit
	< Back Finish Cancel

After OCT tool installation, the OCT Driver installation will start automatically.

C OCT Driver Installation Too	bl	×
GigE GigE Driver Install State:	Not Installed	Install
U3V U3V Driver Install State:	Not Installed	Install



#### Please select drivers to install.

OCT Driver Installation Tool	×
GigE	
GigE Driver Install State: Installed	Install
	Uninstall
U3V	
	Install
U3V Driver Install State: Installed	Uninstall

# **4. Document Revision History**

Date	Revision	Changes
June 20, 2020	0.1	Document created
		•
		•