

Corning® Varioptic® C-C-39N0-A1-160 Auto Focus Lens Module

Overview

The Corning® Varioptic® C-C-39N0-A1-160 auto focus lens module is an electronically controllable focus C-Mount lens, based on the Corning® Varioptic® A-39N variable focus lens. It incorporates the necessary electronic components to drive the lens with just a DC power supply. Focus can be controlled through either an RS232, I2C, Analog or SPI input. With a 16 mm effective focal length and 1.1" 20Mpx sensor compatibility, it is specifically designed for machine vision applications.

Ordering Information

- **Corning® Varioptic® C-C-39N0-A1-160 auto focus lens module:** I2C, SPI or RS232 with 3.3 V signal.

Key Features

- Variable focus from 15 cm to infinity
- Functions quietly
- Supports I2C - RS232 - SPI interfaces
- Supports closed loop operation



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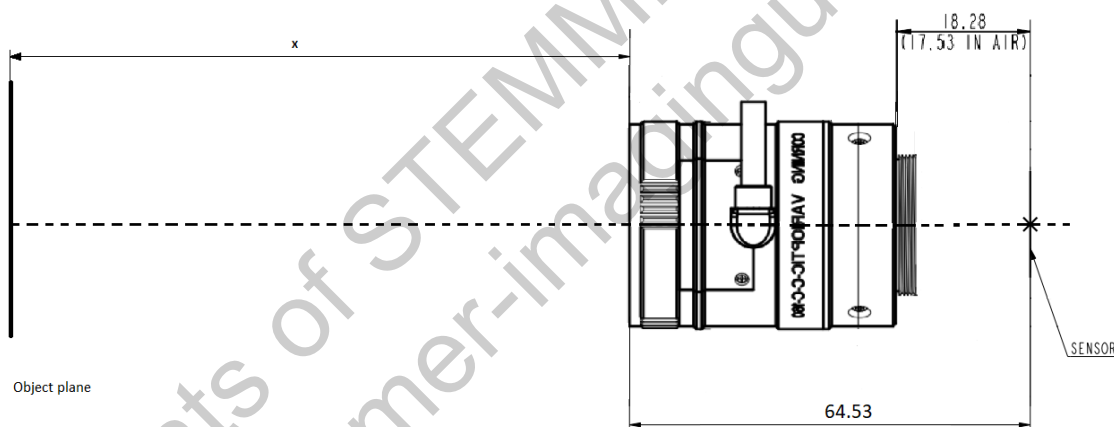
Opto-Electrical Performance

Performances described below are for 25°C

<i>Optical Performances at V_{3m}</i>	<i>Symbol</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Unit</i>	<i>Notes</i>
Voltage for infinite focus	V _∞		35		V	(1)
Focal length at V _{3m}	EFL		16		mm	
Image circle diameter			17.6		mm	
Corner Chief Ray Angle	CRA		< 5		°	
Flange distance			17.5		mm	(2)
F- number	F#		3.8		-	
Diagonal Field of view	DFOV		57		°	(3)
<i>Focus control performances</i>						
Focus distance	x	15		∞	cm	(1)
Voltage for x= 17 cm	V _{17cm}		51		V	(1)

Notes:

- (1) Distance to object refers to the principal plane of the objective lens as shown below:



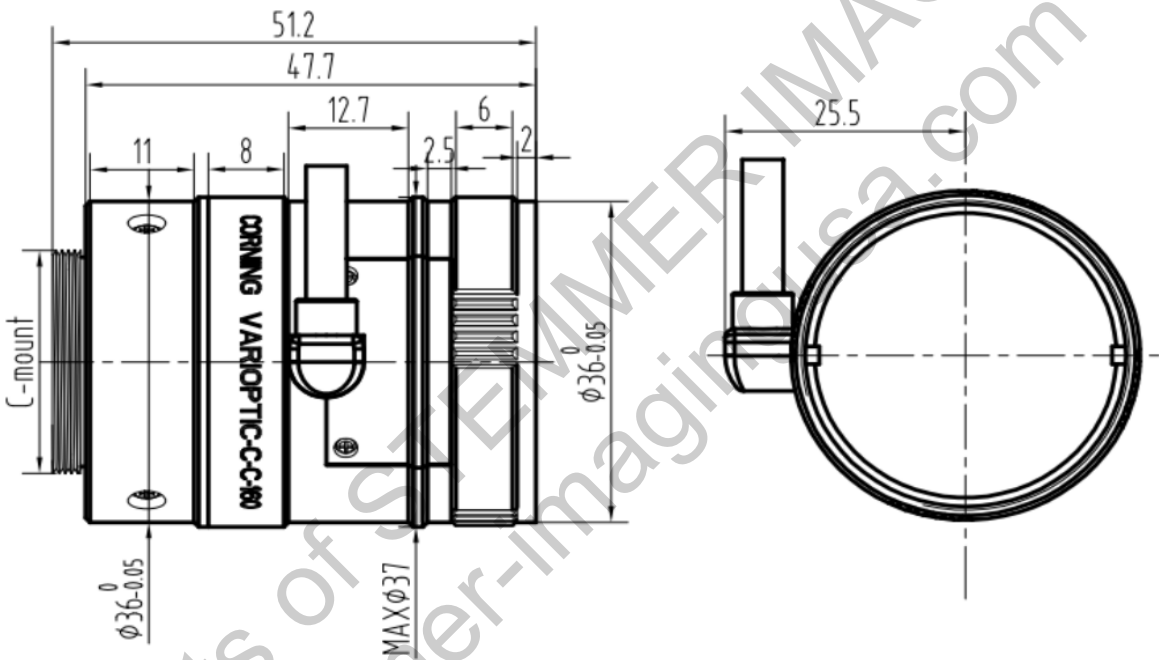
- (2) Refer to ISO 10935.

- (3) For a sensor size of 1.1".

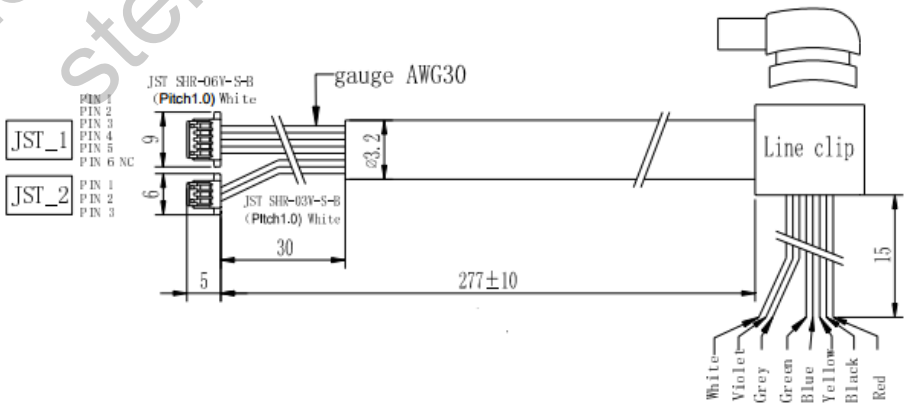
Temperature Range

Parameter	Unit	Min	Typ	Max	Notes
Operating temperature range	°C	-20°C	25	+70°C	
Storage temperature range	°C	-40°C	25	+85°C	

Mechanical Dimensions



Weight: 126g

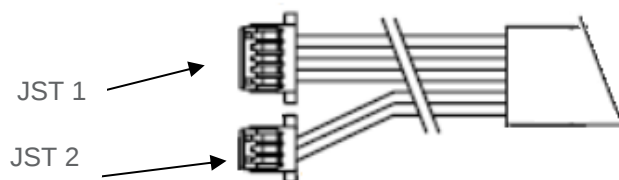


Electrical Connection

The module has a 6-pin connector for power and control (JST_1).

Connector reference: JST SHR-06V-S-B
Wire reference: JST SH3-SH3-28300

These pins have different functions depending on the module version.



Communication Terminal JST_1

Pin	Name	Description
1	VIN	Positive power supply (+3.3 to +24 VDC/ red wire)
2	GND	Ground (black wire)
3	I2Csd_Rx_SDI	Multipurpose pin (depending on the part/ yellow wire)
4	I2CscL_Rx_SCK	Multipurpose pin (depending on the part/ blue wire)
5	SDO_Ana	Multipurpose pin (depending on the part)
6		

The function of the multipurpose pins depends on the part number:

Pin	Name	R33	SPI	I2C
3	I2Csd_Rx_SDI	Rx (3.3V)	SDI	SDA
4	I2CscL_Tx_SCK	Tx (3.3V)	SCK	SCL
5	SDO_Ana	Analog input	SDO	Analog input

Time of Flight Terminal JST_2

Pin	Name
1	TOF_SDA
2	TOF_SCL
3	TOF_VIN

Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power supply						
Input voltage	V _{CC}	3.3	5	24	V	
Current consumption - Active mode	I _{CC}		15		mA	(1)
Control voltage						
RS33/I2C/SPI						
I2C_sda_Rx_SDI / I2C_scl_Rx_SCK pins		-0.3		3.6	V	(2)
SDO_Ana pin		-0.3		3.6	V	(2)
MCLR pin		-0.3		3.6	V	

Notes:

- (1) Current consumption depends on the voltage applied to the lens.

Typical current consumption I_{CC} (mA)

Driver state and voltage applied to Lens		25V	50 V	70 V
Power supply	3.3V	13.7	15.2	16.9
	5V	13.9	14.8	16.1
	12V	7.3	7.8	8.5
	24V	4.4	4.7	5.3

- (2) Absolute maximum ratings.

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