



## **1. Scope**

### 1.1. Scope and purpose of this approval sheet

This manual is applied to the lens SVCL 031200D which is used to CCTV camera.

This Manual Book is assured to approval of all detailed test requirement and procedures of lens specifications like optical performance, appearance spec, Material co-efficiency, reliability.

This manual book is not changed without notice of change in advance.

## **2. Product characteristics**

### 2.1. General

SVCL 031200D is consisted of four glass lens elements.

Ass'y Lens is applied to 1/3" CMOS or CCD sensor.

Additionally, IR cut-off coating is applied on last surface to use Night Vision system.

### 2.2. Lens design and performance data

All specifications of lens system is stated on the article no. 3, 4, 5 of this manual book.

### 2.3. Lens Specifications

Model Name	SVCL 031200D
Item	
Focal length	12.0mm
F #	2.0
Image Height	1/3" CCD
Field of View	28°
Total Conjugate Length L1 ~ Image sensor	7.2mm
Flange Back Length	5.2mm
Relative Illumination	70%
TV distortion	H-Dist>0.5%      V-Dist>0.65%
Depth of field	400mm—∞
Lens dimension	φ 14×13.3mm
Mount dimension	M12×0.5
Lens construction	4G

### 3. Optical performance

3.1. Test equipment : Please refer to figure 3-1.

The resolution of ass'y lens is checked by a projector as shown below.

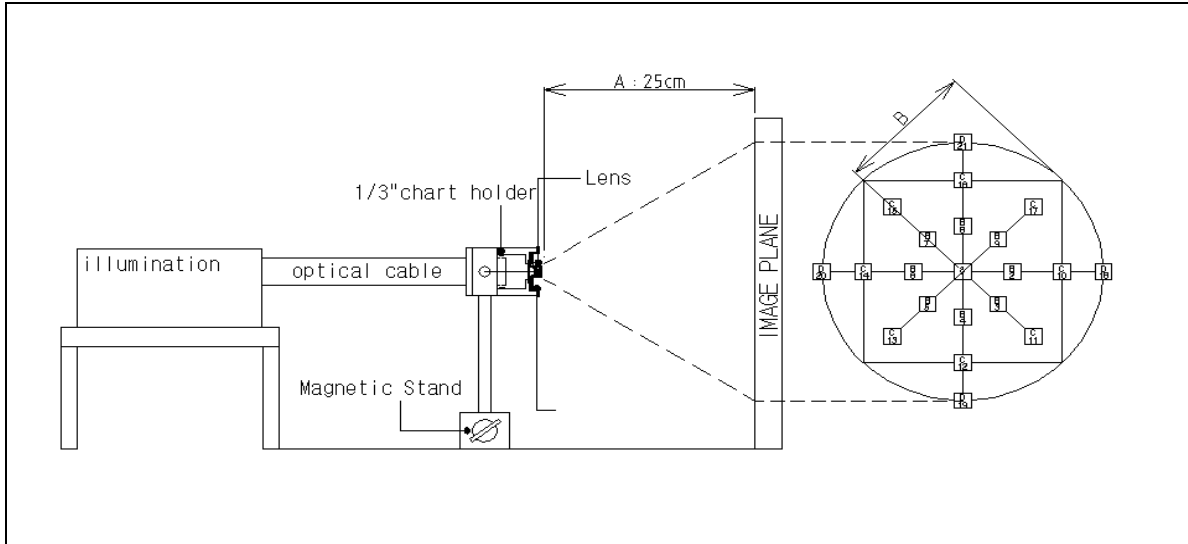


Fig. 3-1

#### 3.2. Test method

- Mount Lens on tester

\* All optical performance inspections are to be performed at best overall focus using the procedure as follows:

- Adjust center focus for best resolution, flare, and contrast for axis target.
- Inspect other areas of target.
- Readjust focus to obtain best overall balanced image.

#### 3.3. Monitor check

- This check is performed during OQC checking.

#### 3.3. Resolution specification

SVCL 031200D	Target Location			
	A	B	C	D
<b>Resolution (1/3")</b>	50LP	50LP	50LP	50LP
<b>Contrast</b>	70	60	60	60

1. Resolution specification is a minimum resolved lp/mm.

2. Contrast specification is over 50% of contrast between a black bar and another black bar.

### 3.4. Transmission specification

#### 3.4.1. Lens and IR filter transmission spec.

Refer to below figure.

Measuring equipment: Hitachi U-4100 Spectrophotometer

Item	Wavelength (nm)	Transmission (%)
Lens element	450 ~ 550	95 %
IR cut-off (additionally)	/	/

## 4. Appearance specification

The following criteria are applied to the appearance criteria of various problems of lens appearance and quality characteristics. And this defective items are not affected to optical performance but only appearance defectives. (If required, a golden sample is prepared after agreement with both party)

### 4.1. Measuring Equipment

3000~5000 LUX fluorescent light lamp, Microscope

### 4.2. Test method

The appearance is checked by unaided-eye under the lamp.

### 4.3. Criteria

Defective item	Spec	Remarks
Scratch (within an aperture)	The width (mm) : 0.006~0.04 The total length (mm) : 2D <sub>0</sub> The thick width of rub mark : 0.02~0.04	China national standard GB 1185-74
Particle, Spot, dirt (within an aperture)	The diameter (mm) : 0.015~0.4 Total amount amount (PCS) : 1D <sub>0</sub> Some rough diameter (mm) that thick : 0.2~0.4	China national standard GB 1185-74

\* The particle whose size is below 0.4 mm is accepted if there is no affection to a performance.

## 5. Material

Description	Maker / Material	Grade	Remarks
L1	Glass	H-LAF10	
L2	Glass	H-ZF7	
L3	Glass	H-LAF10	
L4	Glass	H-LAK7	
Barrel	Aluminum alloy	6061	
Cap	Plastics	PVC	
Spacer	Copper alloy	HPb59-1	

## 6. Handling warning of lens

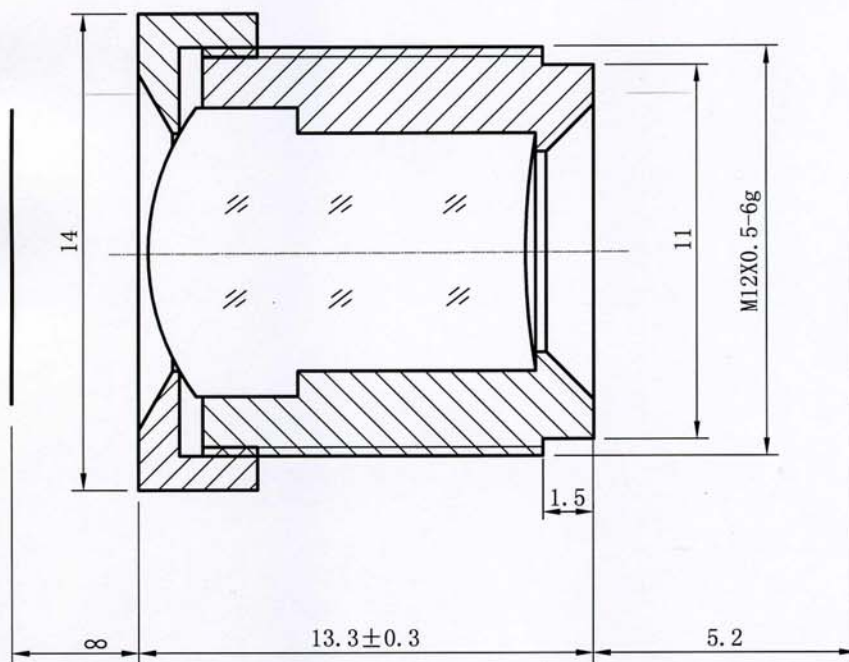
- 6.1. Do not store in the dirty area.
- 6.2. Do not store in the moisture or rusty area.
- 6.3. Do not touch the surface of lens element.
- 6.4. Do not immerse in or spread a liquid which is melt a plastic material and do not use a wet cotton with a solvent and a paper for cleaning.

7. Product drawing

# Sharpen Vision Technology Corp.

## Model:SVCL031200D

Model No.	SVCL031200D	Dimension	14X13.3
Focal Length	12	Senser size	1/3"CCD
F-Number	2.0	Entrance Pupil Diameter	7
Back Focal Length	7.2	Exit Pupil Diameter	5.9
Focus	400-∞	Lens Construction	4G
Angle of view	28° H=22.8° V=17.1°	Application	CCTV



## 8. Reliability test

	Parameter	Condition	Sample size
Test parameter and conditions	High Temperature & High Humidity	Temperature degrees Centigrade : $55\pm 2$ Relative humidity % : 90-95 Expose time h : 6	100pcs
	High Temperature	Test the case (The room) temperature degrees Centigrade : $70\pm 2$ Relative humidity % : <40 Expose time h : 6	100pcs
	Low Temperature	Test the case (The room) temperature degrees Centigrade : $-25\pm 3$ Expose time h : 16	100pcs
	Heat shock	Test the case (The room) temperature degrees Centigrade : $63\pm 2$ Relative humidity % : <40 Displacement mm : 0.15 Acceleration m/s <sup>2</sup> : 19.6 Acceleration g : 2 Frequency cycle counts 1000Hz on each axis which is used in each frequency band : 10	100pcs

- Parameter evaluated(after reliability test)

Pass: Micro crack whose a lens is satisfied with a transmission spec

A lens must be satisfied with resolution, transmission, and appearance specifications.