

RICOM

产品规格书

Product Specification

Model No.

IR02812FB.IR(2MP)

福建福光股份有限公司
Fujian Forecam Optics Co., Ltd.

修订履历

Version	Date	Reviser	Approved	Comments
V1.00	2016/06/23	Riming Jiang	Shizhong Zhang	First edition
V1.01	2016/08/18	Wei Jiang	Shizhong Zhang	Revised FOV, View Point

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4 概述 Outline

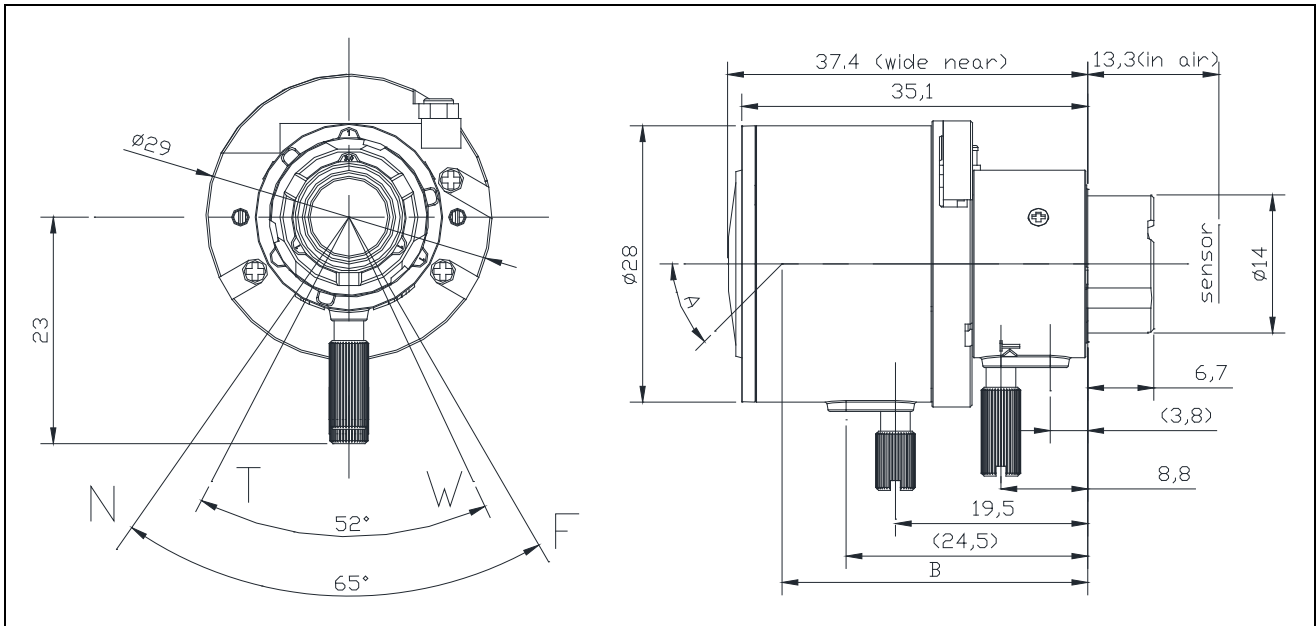
5 主要参数 Main Items
5.1 光学规格 Optical Specifications

	项目	Items	Description				Tolerances
1	焦距	Focal length	2.8mm (W) ~ 12mm (T)				±5%
2	相对孔径	Aperture (D/f')	F1.4 (W) ~ F2.8 (T)				±5%
3	成像靶面	Image Circle	1/2.7"				φ≥6.9mm
4	成像范围	Focus range	0.3m~INF				/
5	TV 畸变	TV distortion	-12% (1/2.8" 4:3) -15% (1/2.8" 16:9)				/
6	主光角	Chief ray angle	< 7°				/
7	视场角 (极限)	FOV (M.O.D)	CMOS	D	H	V	±5%
			OV2715 AR0237	128~38°	107~33°	57~19°	
			IMX290	122~36°	103~32°	54~18°	
			IMX323	117~35°	99~31°	53~18°	
8	视场角 (固定后焦)	FOV (Focus on INF)	CMOS	D	H	V	±5%
			OV2715 AR0237	122~39°	102~34°	54~20°	
			IMX290	116~38°	98~33°	51~19°	
			IMX323	111~36°	94~32°	50~18°	
			IMX225	107~35°	84~29°	60~22°	

5.2 机械规格 Mechanical Specification

	项目	Items	Description		Tolerances
1	接口	Mount	φ14		±0.02mm
2	光学构成	Lens structure	6 groups, 9 elements		*
3	光学总长	Total track length	50.7mm (W)		±0.1
4	法兰后焦	Flange focal length	13.1mm (W) ~ 13.8mm (T)		±0.1
5	机械后焦	Back focal length	6.6mm		±0.1
6	重量	Weight	20g		±10%
7	操作方式	Operation	变倍 Zoom 聚焦 Focus 光圈 Iris	手动 Manual 手动 Manual 固定 Fixed	*

5.3 结构图 Drawing



公差 Tolerance(mm)		0~10 ±0.05	10~30 ±0.10	30-120 ±0.30	Angle ±2°
视点 View Point (M.O.D)	Item	AR0237 OV2715	IMX290	IMX323	IMX225
	A	64°	61°	58.5°	56.5°
	B	30.9mm	30.5mm	30.2mm	30.0mm

5.4 环境规格 Environment Specifications

	项目	Items	Description
1	工作温度	Working environment	-20℃~60℃; 10~90%RH
2	储存温度	Storage environment	-30℃~70℃; 10~90%RH
3	环保	HSF	RoHS

6 测试 Test

6.1 光学性能 Optical Performance

	项目	Items	Description
1	分辨率测试	Resolution Test (lp/mm)	Center φ4.5 φ6 Φ8 1080p ≥160 ≥125 ≥100 /
2	测试方法	Test Method	<ul style="list-style-type: none"> • 0.6m of projection distance (W) • 1.5m of projection distance (T) • At max aperture. Focus on center, and then check edges.

6.2 外观测试 Appearance Performance

	项目	Items	Description
1	外观	Appearance	<ul style="list-style-type: none"> • Dust standard: 60-20 • Scratches: Width<60um, Length<D/2 • Spot: φ<200um, 100~200um≤3
2	测试方法	Test Method	<ul style="list-style-type: none"> • Visual inspection

6.3 可靠性测试 Reliability Test
6.3.1 测试方法 Test Method

	项目	Test Item	Specification						
1	高低温测试 (储存)	Temperature test (non-operating)	<ul style="list-style-type: none"> 70°C, normal humidity, 72hours 30°C, normal humidity, 72hours 						
2	温度循环 (储存)	Temperature cycle test (non-operating)	<table border="1"> <tr> <td>2hours</td> <td>2hours</td> <td>2hours</td> </tr> <tr> <td>-30°C</td> <td>70°C</td> <td>-30°C</td> </tr> </table> <ul style="list-style-type: none"> Stay 2 hours each phase, 10 cycles totally 	2hours	2hours	2hours	-30°C	70°C	-30°C
2hours	2hours	2hours							
-30°C	70°C	-30°C							
3	温度循环 (工作)	Temperature cycle test (Operating with camera)	<table border="1"> <tr> <td>2hours</td> <td>2hours</td> <td>2hours</td> </tr> <tr> <td>-20°C</td> <td>60°C</td> <td>-20°C</td> </tr> </table> <ul style="list-style-type: none"> Stay 2 hours each phase, 10 cycles totally 	2hours	2hours	2hours	-20°C	60°C	-20°C
2hours	2hours	2hours							
-20°C	60°C	-20°C							
4	温度循环 (带包装)	Temperature Cycle Test (With package)	<table border="1"> <tr> <td>2hours</td> <td>2hours</td> <td>2hours</td> </tr> <tr> <td>-30°C</td> <td>70°C</td> <td>-30°C</td> </tr> </table> <ul style="list-style-type: none"> Stay 2 hours each phase, 10 cycles totally 	2hours	2hours	2hours	-30°C	70°C	-30°C
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-30°C	70°C	-30°C							
5	冷热冲击 (储存)	Thermal shock test (non-operating)	<table border="1"> <tr> <td>0.5 hours</td> <td>0.5hours</td> <td>0.5hours</td> </tr> <tr> <td>-30°C</td> <td>70°C</td> <td>-30°C</td> </tr> </table> <ul style="list-style-type: none"> Stay 0.5 hours each phase, 10 cycles totally 	0.5 hours	0.5hours	0.5hours	-30°C	70°C	-30°C
0.5 hours	0.5hours	0.5hours							
-30°C	70°C	-30°C							
6	振动测试 (储存)	Vibration test (non-operating)	<ul style="list-style-type: none"> 1.5G, Sine- Wave 10 ~ 450 Hz for 1.0 octave/min; X/Y direction for 0.5 hour; Z direction for 1 hour 						
7	振动测试 (带包装)	Vibration test (With package)	<ul style="list-style-type: none"> 1.5G, Sine- Wave 10 ~ 450 Hz for 1.0 octave/min; X/Y direction for 0.5 hour; Z direction for 1 hour 						
8	跌落测试 (带包装)	Drop test (With package)	<ul style="list-style-type: none"> Drop height: 100 cm Drop position: 1 corner, 3 edges, 6 planes 						

6.3.2 使用寿命测试 Life Test

	项目	Items	Description
1	自动光圈	Auto-Iris	<ul style="list-style-type: none"> Testing condition: Auto-Iris control board, Voltage 3.5V Iris cycle index: at least 300,000 times Iris close →open →close, 1 cycle 4~8 seconds
2	P 光圈	P-Iris	<ul style="list-style-type: none"> Testing condition: P-Iris Control board, Voltage 3.5V P-Iris cycle index: at least 300,000 times Iris close →open →close, 1 cycle 5~10 seconds
3	IR-Cut	IR-Cut	<ul style="list-style-type: none"> Testing condition: IR-Cut control board, Voltage 3.5V IR-Cut close →open →close, 1 cycle 0.5~1 seconds IR-Cut working index: at least 50,000times
4	聚焦/变倍马达	Zoom/focus stepping motor strength test	<ul style="list-style-type: none"> Drive voltage: 5V, 300 PPS Focusing: hit 20 steps →stop 2s →hit 20 steps Zooming: hit 20 steps →stop 2s →hit 20 steps Hit times: about 50,000 times

*All tests are doing under the standard parameter settings of testing machine. Lens will be judged as qualified when the motor can be driven normally without jump, idling, stalling and other anomalies. Testing environment: 27±2°C; 45%±5%RH