

ARCTIC 416 SERIES PRODUCT DATASHEET



Overview

The SMIA-compliant ARCTIC 416 Series of liquid lens enables camera module and camera phone manufacturers to leverage the advent of higher resolution sensors, and provide enhanced mobile imaging user experience, thanks to DSC-like quality pictures.



1 DESCRIPTION

1.1 FEATURES

Responding to the growing market demand for small, reliable and inexpensive auto-focus solutions, the ARCTIC 416 Series provides a fast track to market for OEMs and ODMs looking for an easy to integrate, high performance auto-focus solution.

The ARCTIC 416 Series features inherent accuracy and un-matched response time. It allows for much simpler auto-focus strategies that can be applied to obtain sharp, crisp focus in time never reached before, well under 500 ms.

1.2 APPLICATIONS

This product is ideally suited for Mobile Phone applications, and is the perfect fit for low footprint camera modules.

More generally, it can be used in any 2 to 3 Mega Pixels, ¼” optical system, such as:

- Mobile Phones,
- PDAs,
- Webcams,
- BarCode Readers,

where its small size, large dynamic range and low wave front distortion will deliver outstanding performance, even in low light conditions.



2 SPECIFICATIONS

2.1.1 FUNCTIONAL SPECIFICATIONS

@ 25°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
<i>Electro-Optical</i>					
– ARCTIC 416 & 416 SL V2					
Low optical power	P _L		-5		m ⁻¹
Voltage for P _L	V _L	28	33	38	V
High optical power	P _H		+13		m ⁻¹
Voltage for P _H	V _H	41	46	51	V
– ARCTIC 416 SL V3					
Low optical power	P _L		-5		m ⁻¹
Voltage for P _L	V _L	32	37	42	V
High optical power	P _H		+13		m ⁻¹
Voltage for P _H	V _H	48	54	58	V
<i>Optical</i>					
Wave Front Distortion, rms	WFE		60	250	nm
Transmission @ 587nm	T ₅₈₇		97		%
<i>Electrical</i>					
Driving frequency	f		1		kHz
Capacitance	C		150		pF
Power consumption	I _{Max}			200	μA
<i>Mechanical</i>					
Height ⁽¹⁾	h		1.6		mm
Total height - 416 Designs	H		2.45		mm
Total height - 416SL Designs	H		2.00		mm
External diameter	D		7.75	7.8	mm
Top aperture ⁽²⁾			3		mm
Bottom aperture ⁽²⁾			2.3		mm

⁽¹⁾ From back of rear window to front of lens

⁽²⁾ Guaranteed optical aperture

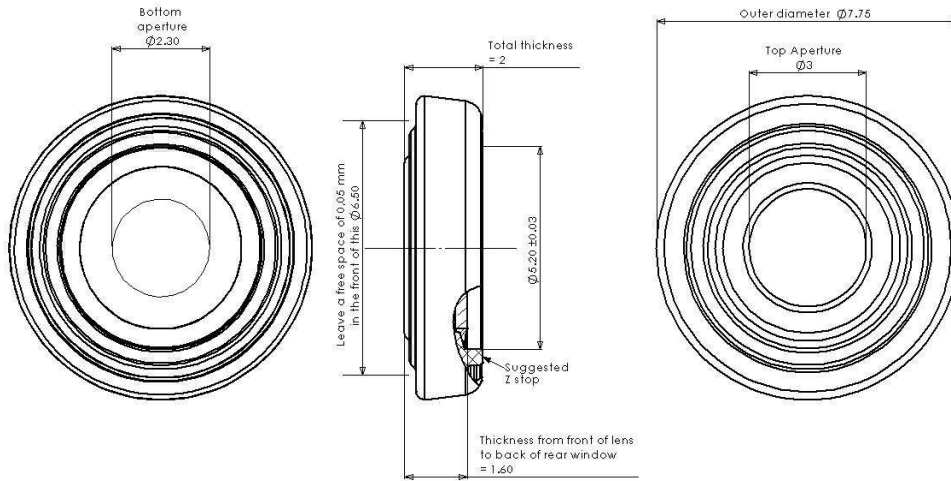
2.1.2 ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Maximum Voltage <i>AC, rms</i>	V _{Max}			60	V
Storage Temperature	-	-40	..	85	°C
Operating Temperature	-	-20	..	60	°C

3 DRAWINGS AND MECHANICAL DESIGNS

3.1 ARCTIC 416 SL DESIGN

Valid for 416 SL V2 and 416 SL V3

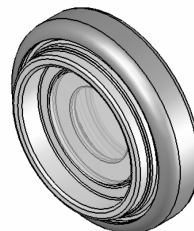
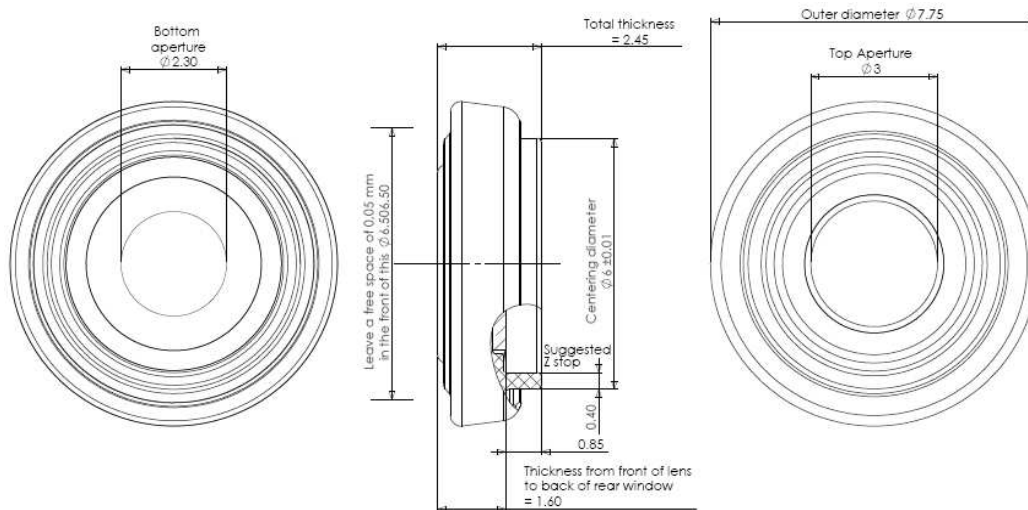


Top view



Bottom view

3.2 ARCTIC 416 DESIGN (OBSOLETE)



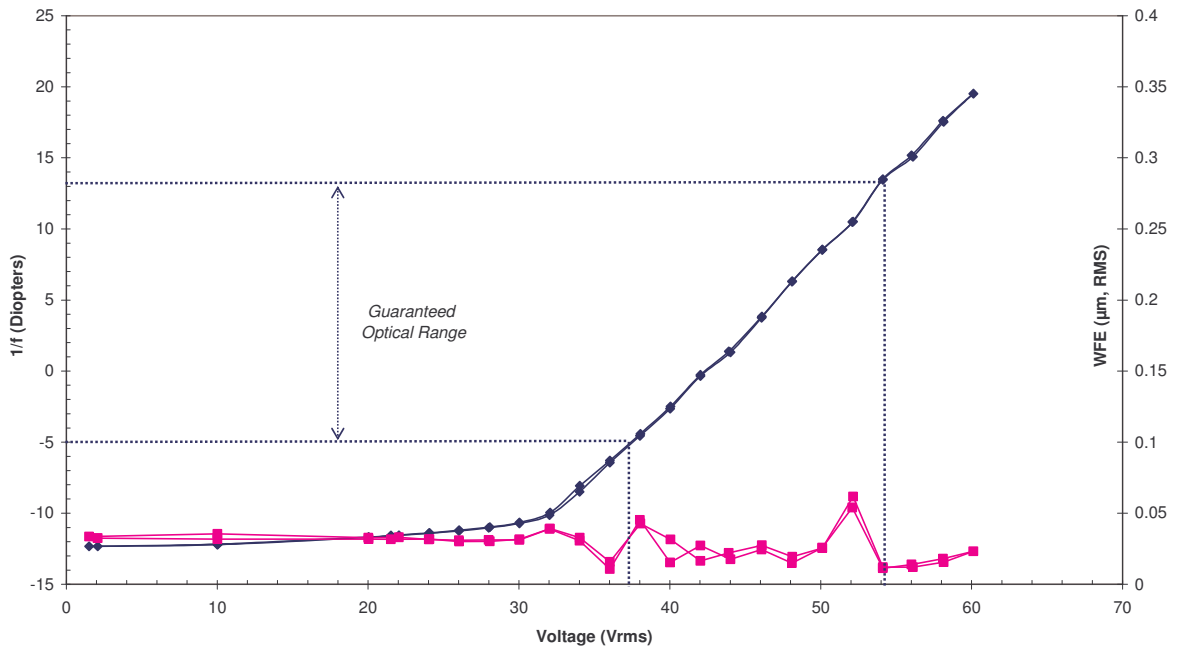
Top view

Bottom view

4 CHARACTERIZATION

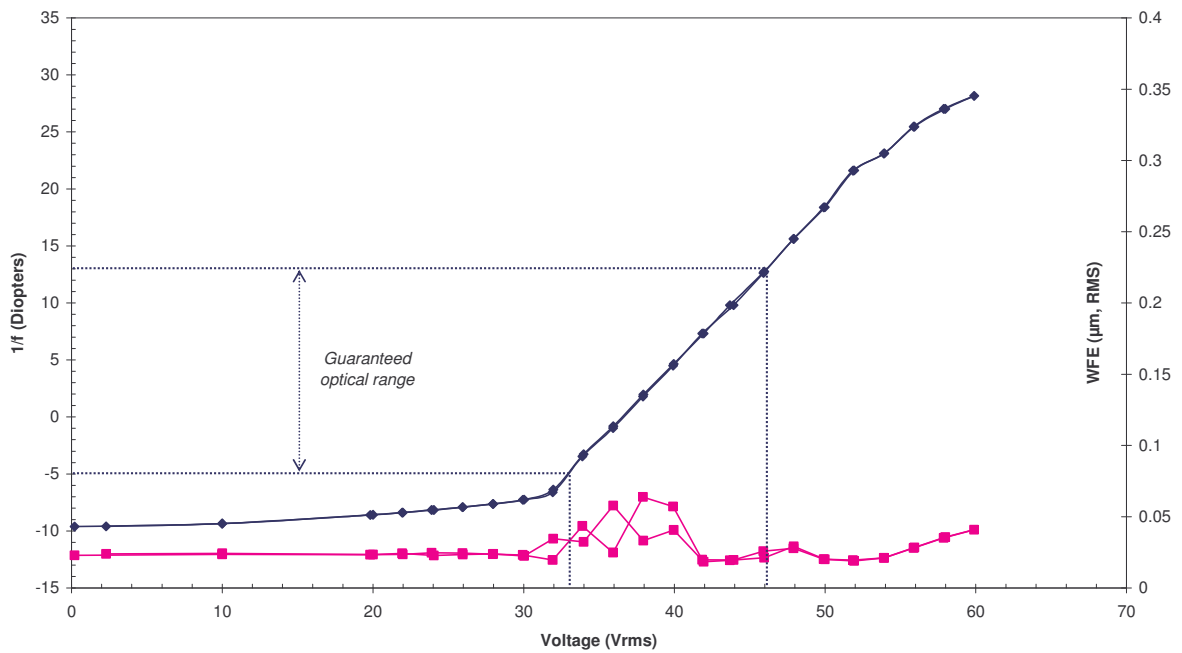
4.1 ARCTIC 416 SL V3

1/f and WFE RMS versus Voltage



4.2 ARCTIC 416 AND 416 SL V2

1/f and WFE RMS versus Voltage



5 ORDERING INFORMATION

Product Status and Ordering Information:

Part Number	Feature/Improvement	Product Status
ARCTIC 416	Original Design	Obsolete
ARCTIC 416 SL V2	Reduced Mechanical Height	Not Recommended for New Design
ARCTIC 416 SL V3	Fast Response Time	MP

