

1.1. Subject

Technical Application Note (TAN2007002): Sony® ICX445 CCD image sensor specifications.

1.2. Applicable Product(s)

- *Dragonfly2 DR2-13S2M/C-CS*

1.3. Application Note Description

The purpose of this Technical Application Note is to document some of the key specifications of the Sony ICX445 CCD. With the exception of spectral sensitivity characteristics, this information applies to both the ICX445AL (monochrome) and ICX445AQ (color) models.



The information included in this document was obtained from the Sony datasheet, which at the time of this writing, has not been officially released. Point Grey Research is not able to provide any further information beyond what is included in this document.

1.3.1. Sensor Overview

The ICX445 is a diagonal 6.0mm (Type 1/3) interline CCD solid-state image sensor with a square pixel array and 1.25M effective pixels. The sensitivity and smear are improved drastically through the adoption of EXview HAD CCD™ technology.

1.3.2. Features

- Horizontal drive frequency: 36.0MHz, 29.0MHz
- R, G, B primary color filters on chip (ICX445AQ model)
- High resolution, high sensitivity, low dark current, low smear
- Excellent anti-blooming characteristics

1.3.3. Element Structure

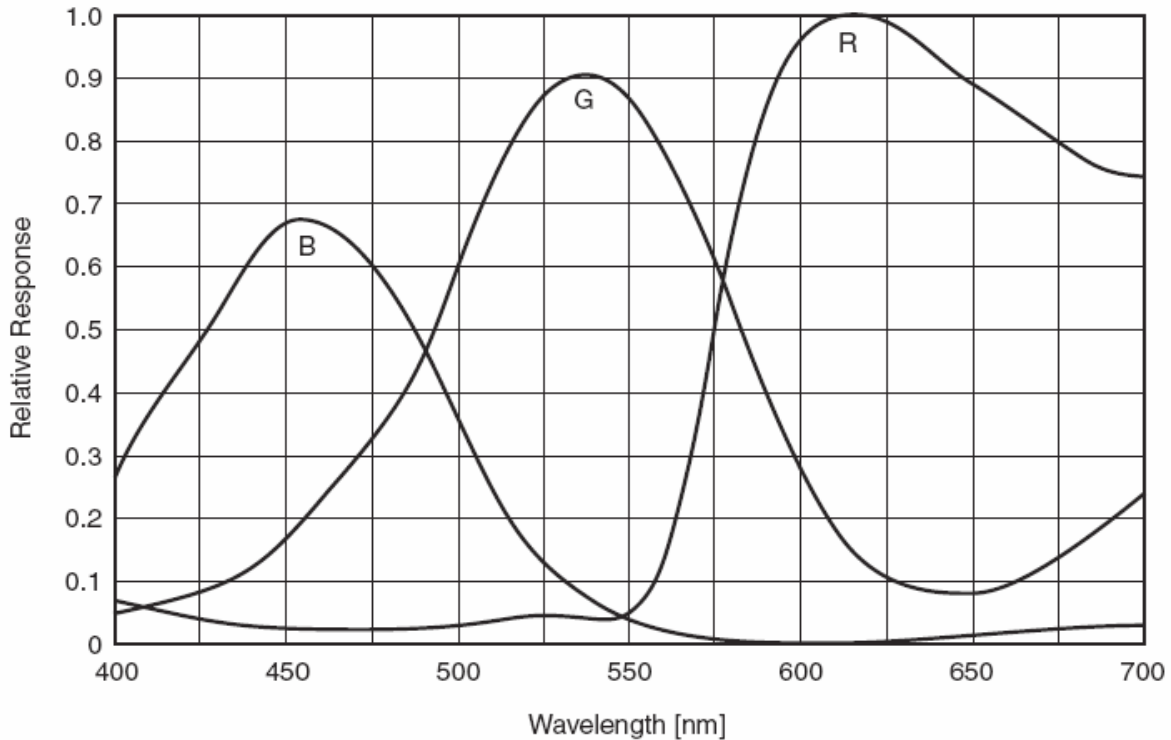
- Interline CCD image sensor
- Image size:
Diagonal 6.0mm (Type 1/3)

- Total number of pixels
1348(H) x 976(V) approx. 1.32M pixels
- Number of effective pixels
1296(H) x 966(V) approx. 1.25M pixels
- Number of active pixels
1280(H) x 960(V) approx. 1.23M pixels
- Chip size
6.26mm(H) x 5.01mm(V)
- Unit cell size
3.75 μ m(H) x 3.75 μ m(V)

1.4. ICX445AQ Characteristics

1.4.1. Spectral Sensitivity

This excludes lens characteristics and light source characteristics.



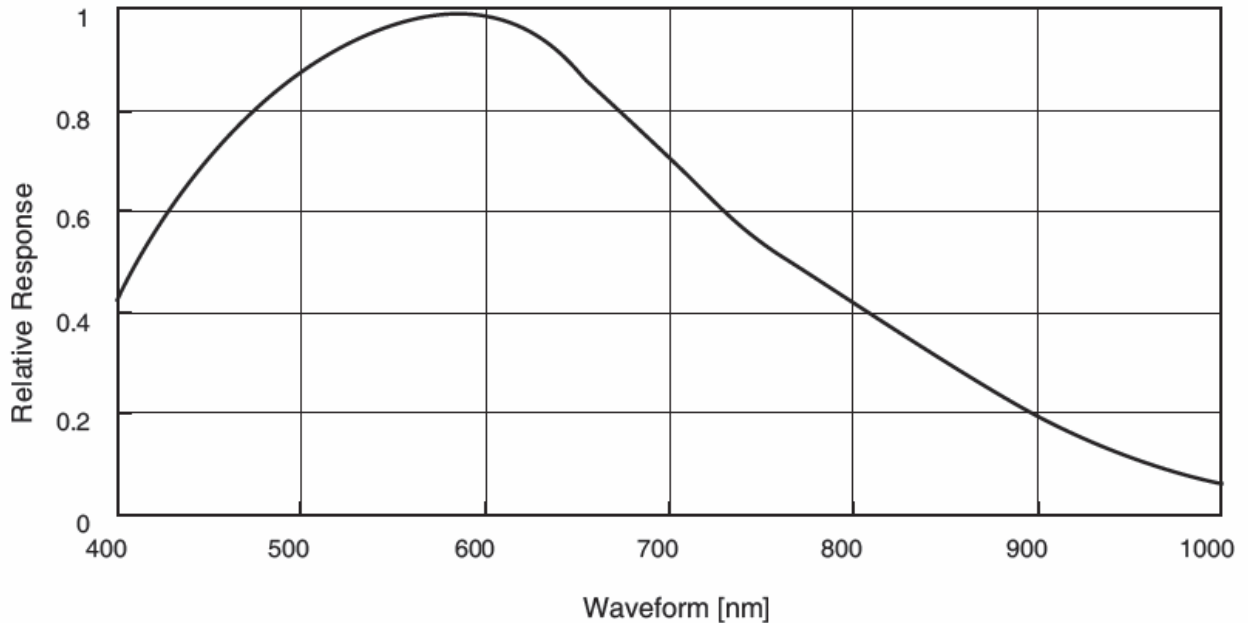
1.4.2. Image Sensor (Center cut-out drive, 30fps)

Item	Symbol	Min.	Typ.	Max.	Unit	Measurement method	Remarks
G sensitivity	Sg	300	380		mV	1	1/30s accumulation
Sensitivity ratio R	Rr	0.55		0.81		1	
Sensitivity ratio B	Rb	0.23		0.49		1	
Smear	Sm		-104	-96	dB	3	

1.5. ICX445AL Characteristics

1.5.1. Spectral Sensitivity

This excludes lens characteristics and light source characteristics.



1.5.2. Image Sensor (Center cut-out drive, 30fps)

Item	Symbol	Min.	Typ.	Max.	Unit	Measurement method	Remarks
Sensitivity 1	S1	300	380		mV	1	1/30s accumulation
Sensitivity 2	S2	1000	1500		mV	2	1/30s accumulation
Saturation signal	Vsat	350			mV	3	Ta = 60°C
Smear	Sm		-104	-96	dB	4	

1.6. Additional Downloads and Support

Access more Technical Application Notes on the web at www.ptgrey.com/support/downloads.

Point Grey Research Inc. endeavors to provide the highest level of technical support possible to our customers. Most support resources can be accessed through the Product Support section of our website: www.ptgrey.com/support.

Creating a Customer Login Account

The first step in accessing our technical support resources is to obtain a Customer Login Account. This requires a valid name, e-mail address, and camera serial number. To apply for a Customer Login Account go to www.ptgrey.com/support/downloads/.

Knowledge Base

Our on-line knowledge base at www.ptgrey.com/support/kb/ contains answers to some of the most common support questions. It is constantly updated, expanded, and refined to ensure that our customers have access to the latest information.

Product Downloads

Customers with a Customer Login Account can access the latest software and firmware for their cameras from our downloads site at www.ptgrey.com/support/downloads. We encourage our customers to keep their software and firmware up-to-date by downloading and installing the latest versions.

Contacting Technical Support

Before contacting Technical Support, have you:

1. *Read the product documentation and user manual?*
2. *Searched the Knowledge Base?*
3. *Downloaded and installed the latest version of software and/or firmware?*

If you have done all the above and still can't find an answer to your question, contact our Technical Support team at www.ptgrey.com/support/contact/.