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# Bokeh 101

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by Brani Srnec



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# Pronunciation and Definition



bo·keh

/bō'kā/

There are two syllables pronounced without noticeable pause between them:

the bo (as in boat) and a short ke (as in kettle)

Definition

the visual quality of the out-of-focus areas of a photographic image, especially as rendered by a particular lens.

"a quick, visual survey of the foreground and background bokeh of a variety of lenses"

Not about quantity: There is no more or less bokeh.

It's all about quality: Soft edges - smooth/creamy/calming

Hard edges – harsh/busy/nervous/crunchy

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# Why is this important to us?

Experienced photographers realize the background has a significant psychological impact in setting the mood of a shot.

In a practical sense

*good bokeh* = complements subject or gives it a “pop”

*bad bokeh* = distracts from subject

*Trivia: The word Bokeh* first appeared as a term relating to photography in recent history when Mike Johnston introduced it in an 1977 issue of *Photo Techniques* magazine.

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## Bokeh (quality of blur) $\neq$ DoF (quantity of blur)



*Nikon 50mm f1.4 D*



*Nikon 105mm f1.4*

While both images taken at f1.4 with razor thin DoF, the background in the left exhibits harsh bokeh due to rendering hard edges in the trees.

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# Why is this important to us?

**Bokeh** is displayed through **specular highlights in out of focus areas** (very often we use *small light sources in the background eg Street or Christmas lights, light filtering through tree leaves...*)

Bokeh is dependent on depth of field but depth of field is in no way dependent on the bokeh.

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# Bokeh is a Function of the Lens Design

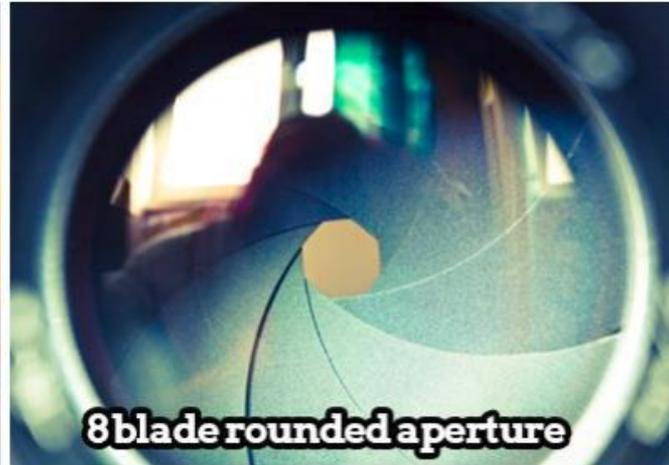
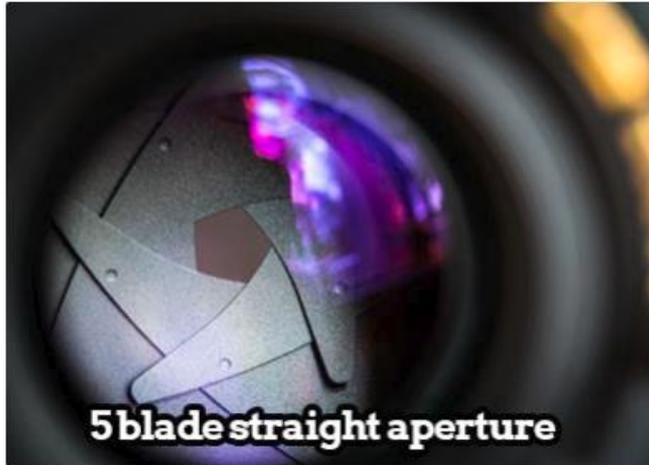
Bokeh depends on how the lenses (glass) are molded, polished, and placed.

**Design and number of the aperture blades** are one of the main things responsible for the way bokeh is rendered in an image.

It is most common to see 5 or 7 blades in an aperture, and in more professional lenses it is more common to see 9 blades or even 14 blades.

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# Bokeh is a Function of the Lens Design



THE LENS ON THE RIGHT WITH MORE BLADES, WHICH ARE ROUNDED, IS GENERALLY PREFERRED AMONG PHOTOGRAPHERS.



# When buying a lens check the specs

## Nikon AF NIKKOR 50mm f/1.8D Lens B&H # NI5018DAF • MFR # 2137



### In Stock

Order **now** to ship **tomorrow**

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**Shipping Restriction:** No shipping to CANADA ⓘ

### Product Highlights

- F-Mount Lens/FX Format
- Aperture Range: f/1.8 to f/22
- Super Integrated Coating
- Rounded 7-Blade Diaphragm

★★★★★ [Reviews 2128](#) | [107 Questions, 219 Answers](#)

Style: **New**

Refurbished

New

**USD \$131.95**  
**CAD \$176.39**

OVERVIEW

**SPECS**

QUICK COMPARE

REVIEWS 2128

Focal Length	50mm
Maximum Aperture	f/1.8
Minimum Aperture	f/22
Lens Mount	Nikon F
Format Compatibility	Full-Frame
Angle of View	46°
Maximum Magnification	0.15x
Minimum Focus Distance	1.48' / 45 cm
Optical Design	6 Elements in 5 Groups
Diaphragm Blades	7, Rounded

# When buying a lens check the specs

## Nikon AF-S NIKKOR 58mm f/1.4G Lens B&H # NI5814 • MFR # 2210



### In Stock

Order **now** to ship **tomorrow**

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**Shipping Restriction:** No shipping to CANADA ⓘ

### Product Highlights

- F-Mount Lens/FX Format
- Aperture Range: f/1.4 to f/16
- Two Aspherical Lens Elements
- Nano Crystal & Super Integrated Coatings

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★★★★★ [Reviews 55](#) | [2 Questions, 6 Answers](#)

**USD \$1,596.95**  
**CAD \$2,134.80**

OVERVIEW

**SPECS**

QUICK COMPARE

REVIEWS 55

Focal Length	58mm
Maximum Aperture	f/1.4
Minimum Aperture	f/16
Lens Mount	Nikon F
Format Compatibility	Full-Frame
Angle of View	40° 50'
Maximum Magnification	0.13x
Minimum Focus Distance	1.9' / 58 cm
Optical Design	9 Elements in 6 Groups
Diaphragm Blades	9, Rounded

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# Does bokeh just happen?

**Do lens manufacturers design lenses with bokeh in mind?**

Tokina says,

“The primary concerns are sharpness, contrast, and low chromatic aberration. So bokeh is a secondary consideration that is usually handled in the mechanics/aperture of the lens.”

However, some lenses were built with bokeh as a design consideration.

Some examples are Lensbaby lenses; Mamiya with its leaf-shutter lenses or the recent Sigma 105mm f1.4 which they nicknamed as the “Bokehmaster”

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# How to feature bokeh?

Bokeh is featured via shallow DoF:

1. Camera sensor size – the bigger the sensors the shallower DoF
  2. Maximum aperture – use the smallest f-stop (f2.8, f2.0, f1.8, f1.4...)
  3. Focal length\* – use the longest focal length (if you use zoom lens, zoom in)
  4. Distance between camera and subject – the shorter the distance, the shallower DoF
  5. Distance between subject and background – the greater the distance, the shallower DoF
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# Bokeh 102

If you want to learn more about things like

- “onion-ring” bokeh
- lenses with adjustable bokeh
- removing ugly spots from bokeh balls
- DIY bokeh shapes
- And bunch a technical stuff

check this website:

<https://www.bhphotovideo.com/explora/photography/tips-and-solutions/understanding-bokeh>

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# Sources

- Title image <http://sfwallpaper.com/image-post/2214-camera-wallpaper-20.jpg.html>
  - <https://improvephotography.com/29529/aperture-blades-many-best/>
  - <https://www.bhphotovideo.com/explora/photography/tips-and-solutions/understanding-bokeh>
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