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60 SET-UP STYLE PHOTOGRAPHY

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Back in 2006, when I started doing intra-oral dental photography, I used a DSLR Canon 400D with a Sigma ring flash and a Sigma 17-70 macro lens. After 3 years of testing and doing dental photography I started lecturing about dental photography in Romania, having till now more than 900 dentists as students. The big advantage for myself and for the following students was the chance to test many DSLR photo cameras: the ones that students brought during the workshops. After this kind of experience and expertise, I can say that I have tested almost all the most usual cameras, macro lenses and flashes that are now on the market. Also brackets, bouncers, continuous light and other dental accessories were in my hands to test the results. My main goal was to find a very simple set-up with a nice balance of the light and to use it in my daily work in a predictable way. It's been longer than 4 years that I started using this set-up and I couldn't find a single reason to change it. The set-up is a Nikon D7100, a Nikon 60 mm lens and a Nikon R1 twin flash. One of the advantages of this set up is that you have a twin flash effect without using any bracket on it. Other advantages are: light lens, small distance to the subject, nice portraits, quick focus. To test this I was doing an experiment with this system: the twin flash effect is achieved when the light is falling from sides (around the transition lines) and going inside the tooth. The twin flash effect gives a 3D perspective of the tooth and a very nicely textured gingiva. In this experiment I was capturing the way the light spreads flashing from R1 Nikon twin flash with and without bouncers. The twin flash effect is obtained if the subject is placed BEFORE the light intersects. After that point the result of the flash is changed into a ring flash effect because the light is going perpendicular to the subject.



Img. 1 - The 60 Set-up photography.



Img. 2 - For this experiment I took into consideration 3 main macro flashes from Nikon. Nikon 60 mm, Nikon 85 mm and Nikon 105 mm. I measured the minimum distance from the lens to the subject using the formula from the image.



Img. 3 - From the minimum distance the subject has a twin flash effect



Img. 4 - From 10 cm still twin flash effect.



Img. 5 - Using the Nikon R1 flash directly on the lens (placed on the ring) the light is intersecting around 13 cm from the lens. At 1:3 magnification ratio the effect is as when using a ring flash.



Img. 6



Img. 7



Img. 8 - In the last 3 images I was testing the light when the flashes are angled at 60 degrees. This way the lights intersect around 8 cm from the lens surface. The ring flash effect appears on the last two images.



Img. 9



Img. 10



Img. 11 - When the flash is inclined at 45 degrees the twin flash effect is achieved before the 6 cm span. After that point there is full light on the subject.



Img. 12



Img. 13



Img. 14 - When the flashes are at 90 degrees and a bouncer is placed on the flashes, the light is crossing after 22 cm. So at 1:1, 1:2 and 1:3 magnification ratio the twin flash effect is achieved.



Img. 15 - All the results compared.

THE EFFECT OF NAKED TWIN FLASH - ON THE LENS 90 DEGREES

Magnification ratio	1:1	1:2	1:3	
Nikon 60	5	10	15	Distance to the subject
Nikon 85	14,5	29	43,5	Distance to the subject
Nikon 105	14,8	29,6	44,4	Distance to the subject

CROP FACTOR 1,6

twin flash on lens - 12,5 cm intersection of the light

Img. 16 - Only with 60 mm lens and R1 naked placed on the lens you can get the twin flash effect. To get the same effect with other two lenses you need to use brackets for flashes to enhance the distance between the flashes.

THE EFFECT OF VTWIN FLASH WITH BOUNCERS - ON THE LENS 90 DEGREES

Magnification ratio	1;1	1;2	1;3	
Nikon 60	5	10	15	Distance to the subject
Nikon 85	14,5	29	43,5	Distance to the subject
Nikon 105	14,8	29,6	44,4	Distance to the subject

CROP FACTOR 1,6

twin flash on ring with bouncers- 22 cm limit

Img. 17 - When using bouncers, the twin flash effect is achieved with 60 mm 100% and with 85 and 105 at maximum of 1:2 magnification ratio.

The 60 mm Nikon lens is a good choice for dental photography and features some advantages

1. The dentist can stand during the intraoral photography
2. The light weight of the full system makes it possible to take the pictures with one hand, also for the ladies
3. The twin effect of light could be obtained with this lens without using photo brackets

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DOCUMENTATION VERSUS ARTISTIC PHOTOGRAPHY

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