Canon EOS C300. Cinematographic evaluation

By Alfonso Parra AEC

In this article we are going to show the study about the Canon EOS C300 camera. According to the manufacturer, the camera is designed to digital film making, in other words, story-telling in motion over digital hardware. The introduction of the camera was highly celebrated last year in Los Angeles, and Cameraman covered the event. In the article we published at that time we described the main features of the camera, so, we are not going to speak about them again. A lot of aspects of the EOS C300 regarding menus agree with the ones of the XF305 camera. We have already made an extensive test about this latter one, therefore we refer to it for those who might need deeper details of certain contents.

For test purposes, we have preferred to use the new gamma curve of Canon Log. We have kept other parameters in preset, for example, we have applied neither the noise reduction nor changed the sharpness values.

As usual, we have used, among others resolution charts like Putora or ISO 12332, color charts like the ChromaDuMonde, Macbeth or Spyderchekr, all of them analyzed through programs as Imatest o ImageJ. For lighting adjustment and evaluation of recorded images, we have used a HD Cinetal monitor, as well as a waveform monitor/vectorscope, the Sekonic L558/Cine lightmeter, and the Minolta Color meter IIIF, all of them suitably calibrated. In postproduction, we have worked with Color and Davinci Resolve 9. Moreover, we have used two lenses; the Canon EF 24-70 f/2.8 zoom and the EF 85mm f/1.2, both from the L serie.

This time, we have shot our outdoor locations in Madrid (Spain), in addition we have had the opportunity to shoot the Paralelo dance by the Lokomania Company, choreographed by Rubén Nsue.

I should point out here my gratefulness for Canon for its excellent work documents (White papers), which gave us a lot of useful information to understand much better the camera operation.

Article images are from original frames, although converted into the CMYK space, therefore, they have to be used as a comparative reference.

EVALUATION OF THE NOMINAL/EFFECTIVE EXPOSURE INDEX (EI)

As usual in our tests, we have looked for the nominal exposure index in order to use it as our starting point. We have got the nominal EI according to the standards set by both manufacturers and associations of professional. We have used the formule proposed by CIPA DC-X004-2004 (http://www.cipa.jp/english/index.html); then we have compared with the formule proposed by Kodak in its note App MTD/PS-0234, based on the base saturation.

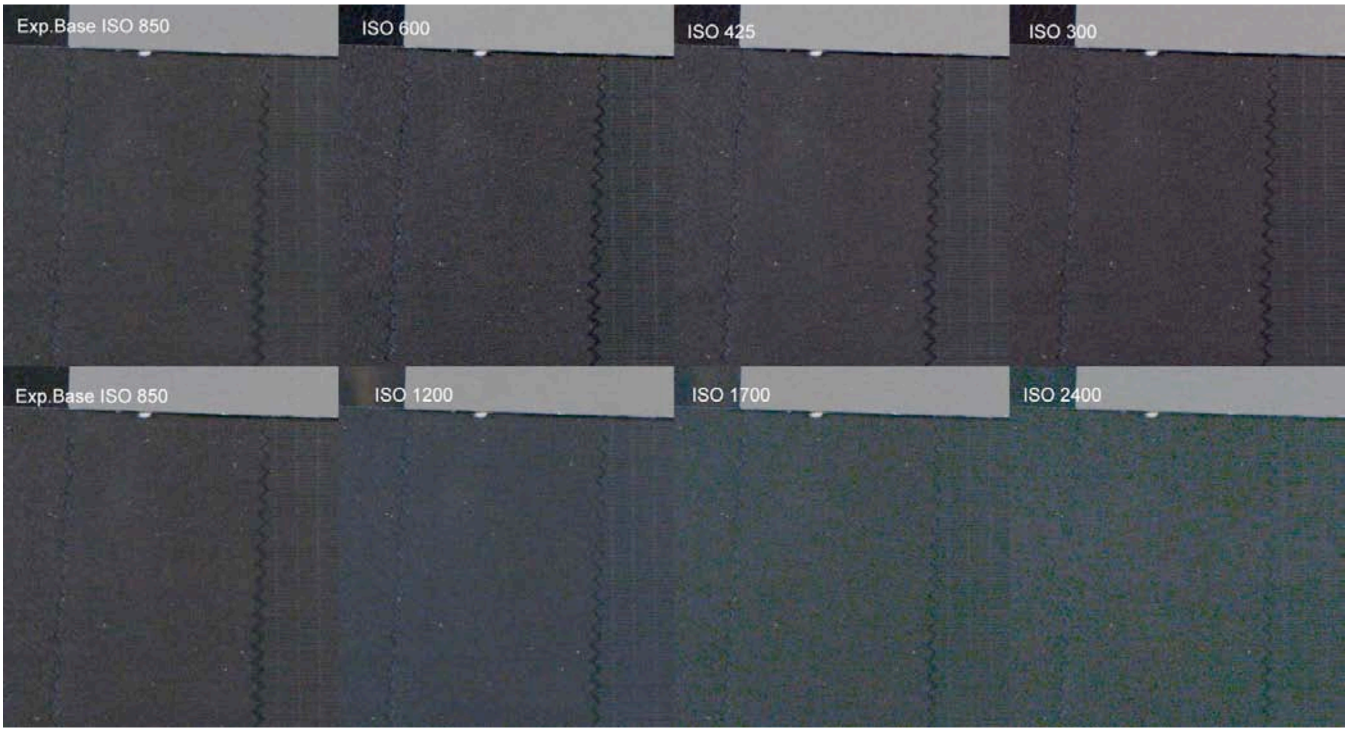
$$ISO = \frac{15.4 \cdot f\#^2}{L \cdot t}$$

15.4 value is a constant which depends on, for example, the lens tramitance or the vigneting factor. *f,* value is our diaphragme squared, *L* is the value of the reflected light by the 18% gray chart in cd/m^2, and finally, *t* is the exposure time in *sec*.

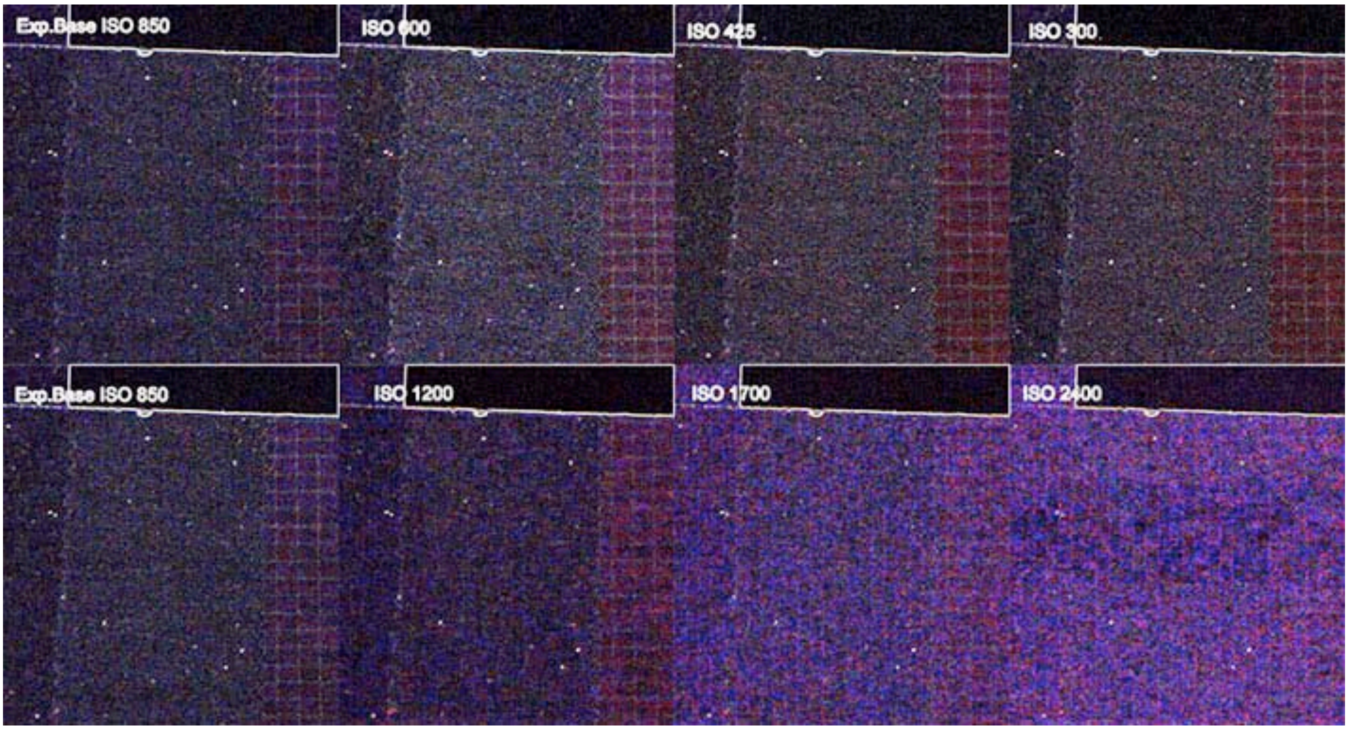
Although these assesments of the camera sensitivity are suggested for digital sensors of still image, we believe that they can be also applied for video cameras if we consider a gamma 2.2 and a space of color YCbCr (sRGB). So, the ISO value is around 600 to 25 fps, with a shutter of 180º (1/50 sec). This sensitivity is considerably high, and undoubtedly, it is related to both the pixel size (6.4 micra) and its associated microlens, as well as to the new structure of the sensor.

The Canon's document *Sensitometric Characteristics Of The Eos C300 Digital Cine Camera* states that the ISO value for the camera to 0dB is 640; this value agrees approximately with the theoretic one. The manufacturer recommends the 850 ISO value as reference of sensitivity; it means to apply an increase of +2.5 dB regarding the 0 dB value. Below, we will see how the choice of certain ISO affects the distribution of the dynamic range.

Next, we are going to determine which is the effective sensitivity that allows us to work. As we have already pointed out in other articles, the sensitivity is currently very flexible because cameras make an excellent work with the noise. As we have studied our fabrics charts, more concretely the samples of black fabrics, we have focused on the noise, detail and sharpness that show with the different exposures.

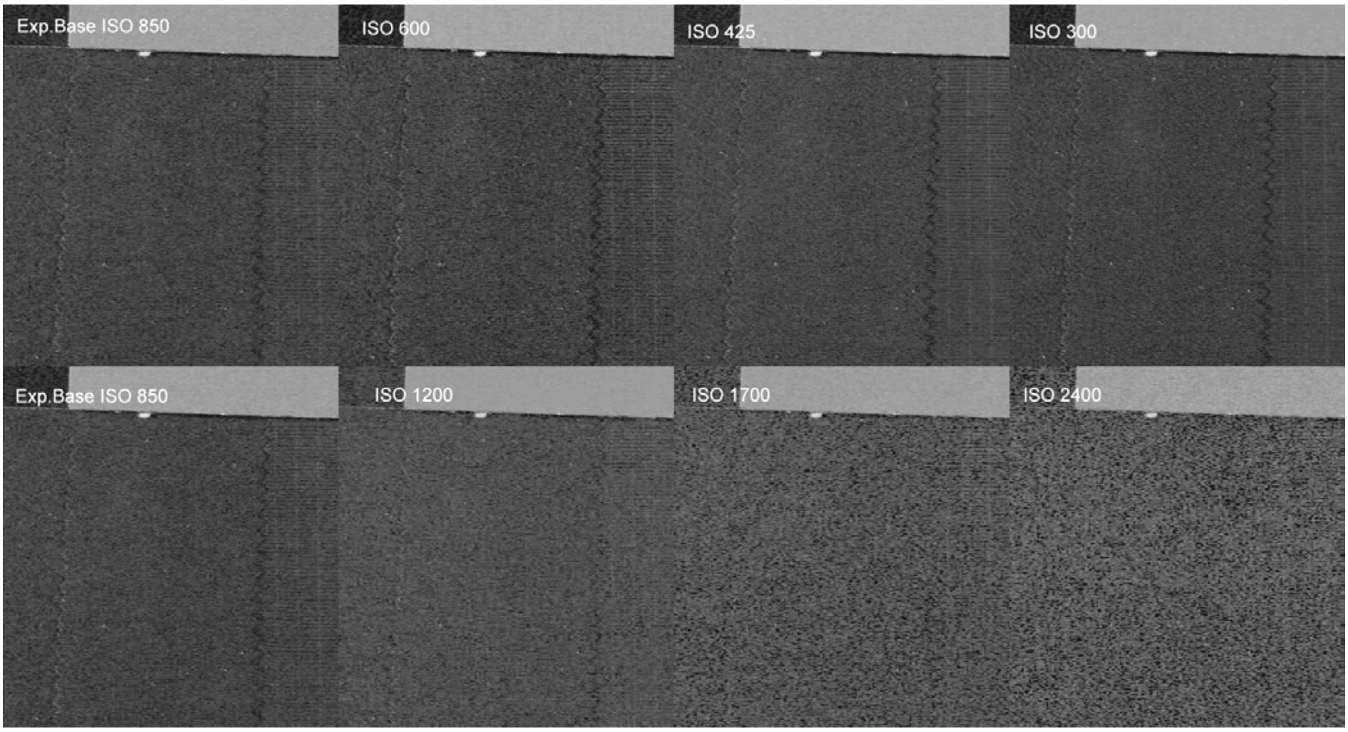


Starting from the ISO value suggested by the manufacturer, upper row shows the detail of the overexposed fabrics, and next row shows the detail of the underexposed. Below, we can appreciate the same image passed through the edge detector, where we can see better the sharpness, and how it is affected by the noise.



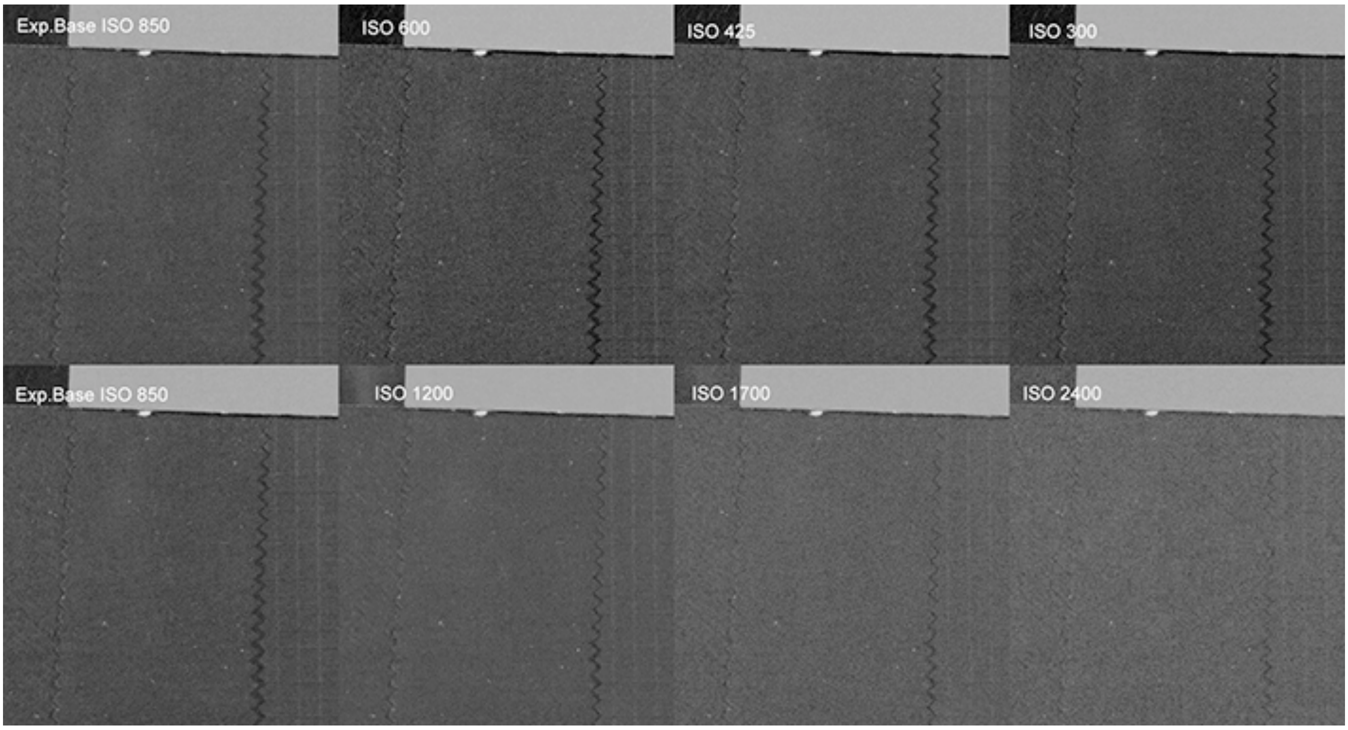
With an ISO value of 600, the sharpness and detail are very good, and the noise is low. This sharpness is a bit lower than 850, although it is still more than enough. With 1200 ISO we can see the noise, although sharpness keeps acceptably well, but with less texture. With 1700 ISO, texture has practically disappeared.

Let us see the same sample through the blue channel, as we already know, it is the channel which contributes more to the noise.



Blue channel

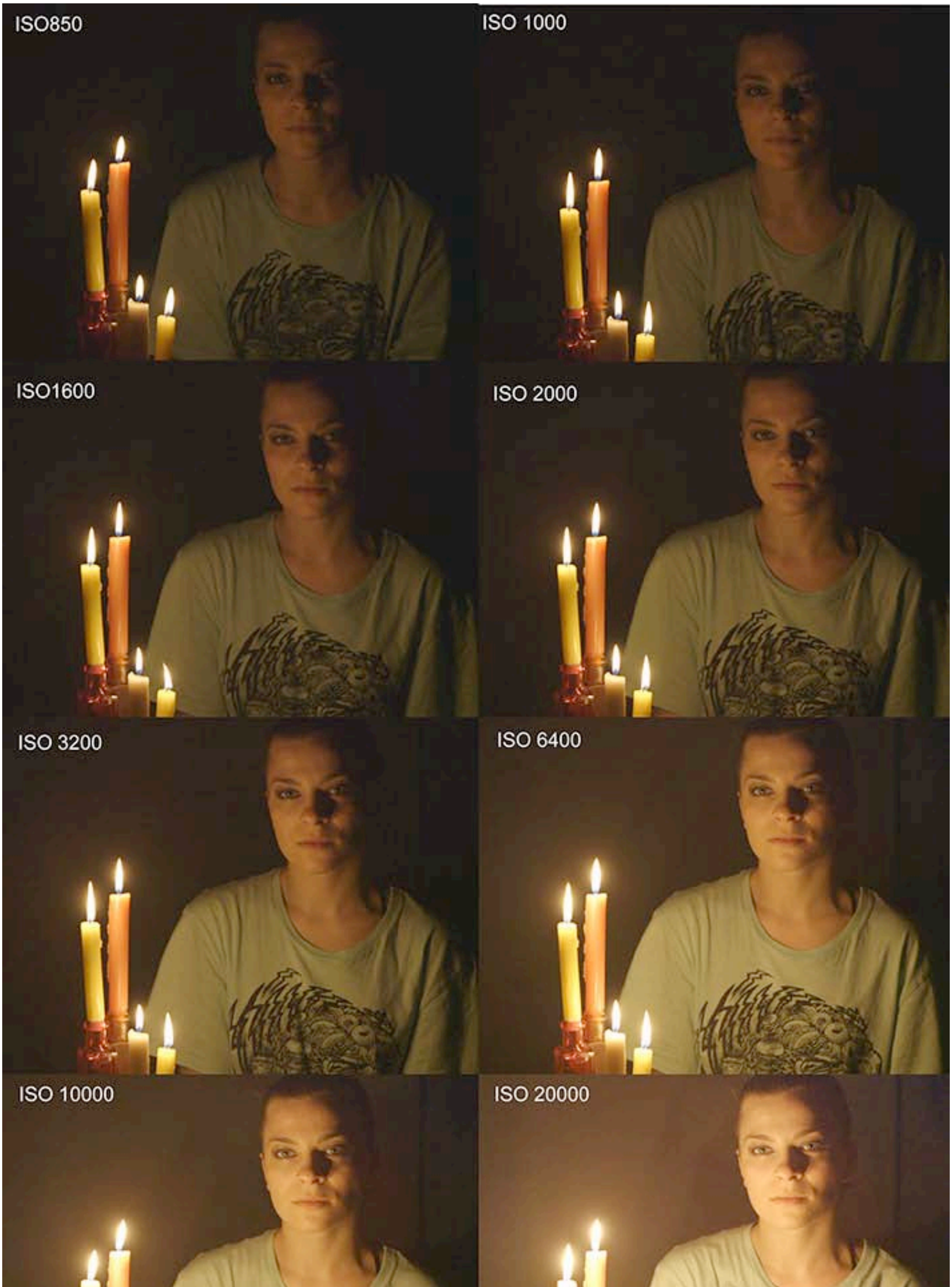
At the blue channel, exposure at ISO 425 shows totally clean, it shows lot of texture and sharpness; up to ISO 1200 we can see the division among fabrics. The difference with the green channel (next image) is significant since this channel is built with two mosaics of green photosensors. It shows double in gaining than the other two channels, that is, around 6 dB, with a minimum increase of noise.



Green channel

From the observation of our charts, it may be concluded that the effective EI is between ISO 400 and 1200. It does not mean that we are not able to use greater sensitivities if we accept a certain degree of noise. It should be pointed out that the noise of the camera does not have the usual appearance of the electronic cameras with the same rank. The thing is that its distribution is not uniform, so it gives a more analogic appearance.

Let us see some circumstances as we have used another EIs in real situations. Let us observe our wake, as well as its two channels, red and blue.

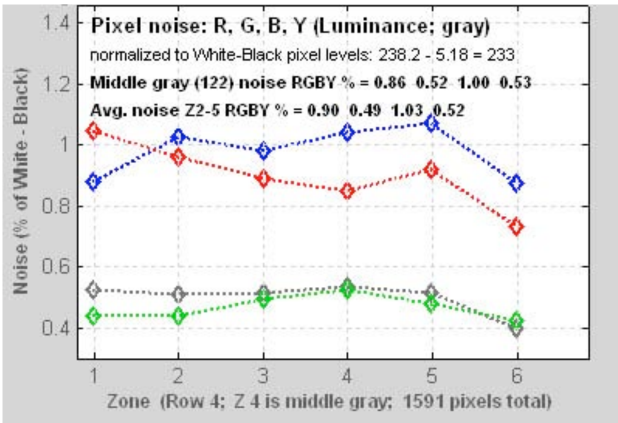

ISO850
ISO 1000
ISO1600
ISO 2000
ISO 3200
ISO 6400
ISO 10000
ISO 20000

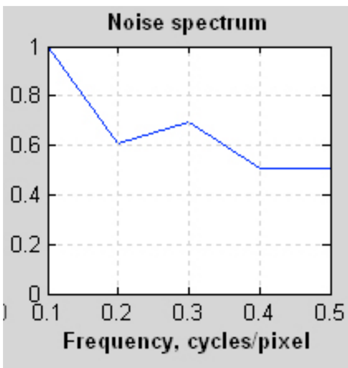
Red channel

Blue channel

If we pay attention to the image, we can see how the noise is not even annoying with ISO 20000, although it is already very visible. With ISO 3200, we can see the noise, although it is totally acceptable, and it stands up to a value of 5000 ISO, where the noise level is between –32 and –33dB.*

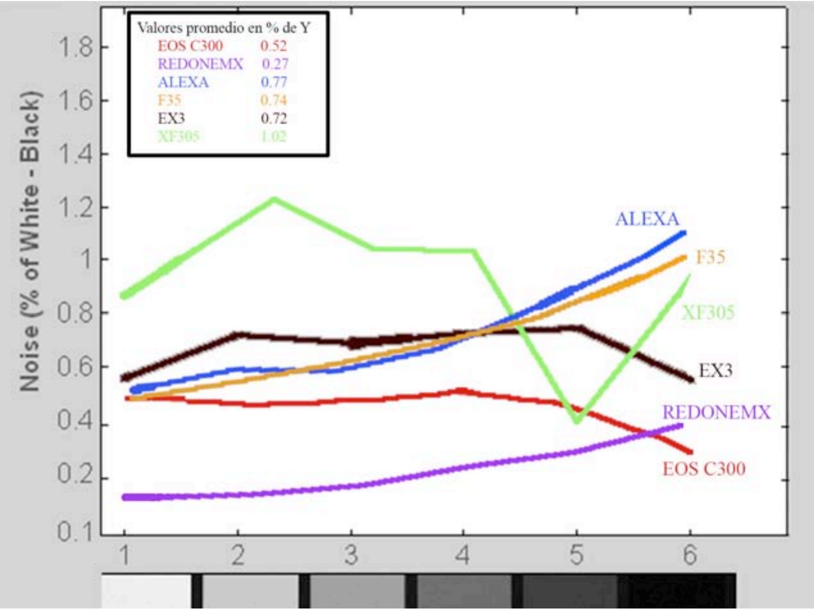
We have analyzed the noise with the Macbetht chart through Imatest. It shows also its excellent behavior. Noise keeps constant throughout different middle tones for the average Y value; it is slightly greater for high lights in the red channel; and it keeps constant for middle tones in the blue one. As usual, this last channel shows a higher noise level. Both the blue and the red channels are a lot noisier than the green one. As we can see on the graph, the green channel gives an average of 0.49 as opposed to 0.90 and 1.03 from the red and blue ones respectively. As we have stated above, we can clearly see these differences if we pay attention to the green channel only for our fabrics charts. There, we can see the textures of the fabrics, at least up to ISO 2400.





We can see on the graph of the noise spectrum that the camera noise does not conceal excessively the finest details, in addition it shows a lot of sharpness for high frequencies. It means that the camera has a moderate correction of noise. However, we can switch on the circuit of noise reduction in the camera menu. To know how it works we refer to the test we have made of the XF305.

** Colorimetric and Resolution requirements of cameras.Alan Roberts.ADDENDUM 70 : tests and settings on a Canon EOS C300*



Comparing the noise values to Y from the five gray samples of the Macbeth chart

To understand better which is the noise level of the camera, we have made the graph that shows the noise from different cameras, averaged in % for Y; for example, the EOS C300's value is 0.52 as opposed to ALEXA's 0.77 or X3F05's 1.02. This last one is the camera that gives more noise, and the RedOneMX is the one that gives less.

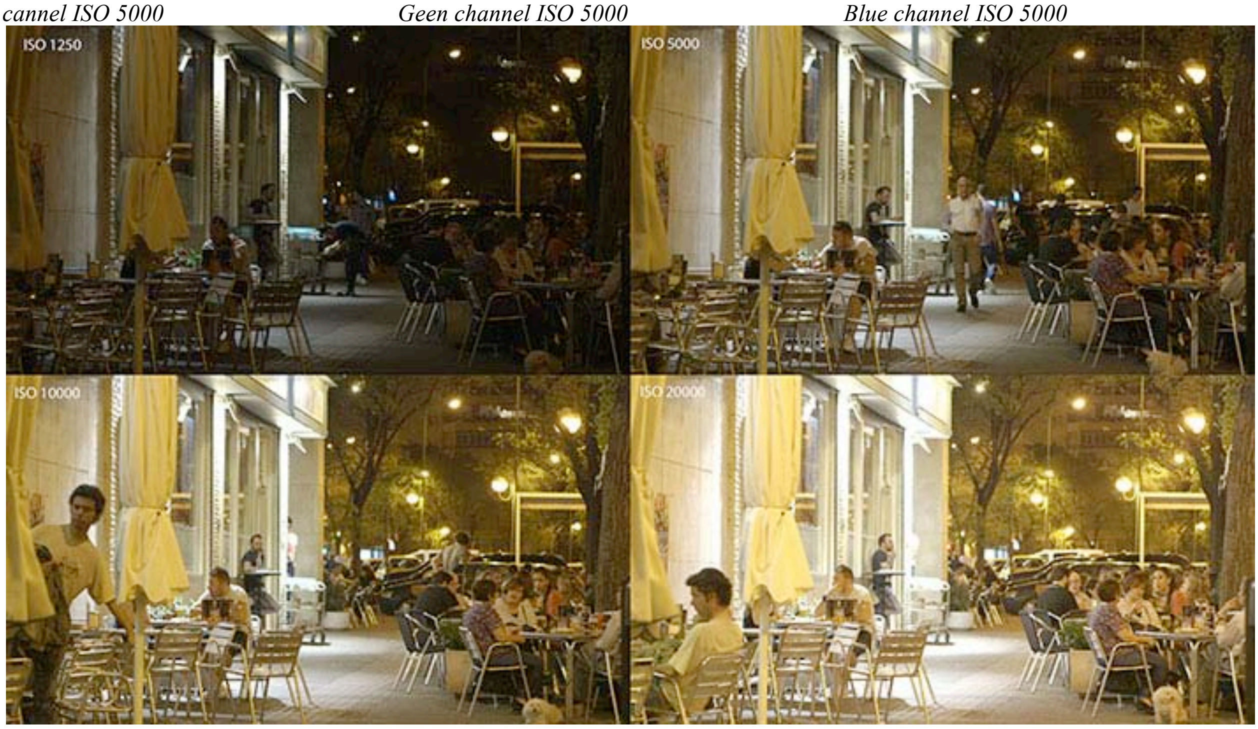
Indeed, not only were we surprised at the noise level for high ISO values (an increase of 6dB, that is, 1 stop, which means an increase of just 3dB in the noise level) but also at the texture and its distribution.

Finally, we show a night scene with different ISO values. It seems to us that the most suitable is the one that was shot with ISO 5000; although we can see the noise, it hides aggressively neither sharpness nor resolution.

Red cannel ISO 5000

Geen channel ISO 5000

Blue channel ISO 5000



Originals from camera. Canon Log curve.Lens 70mm .T 2.8 .3500ºK .Shutter180º

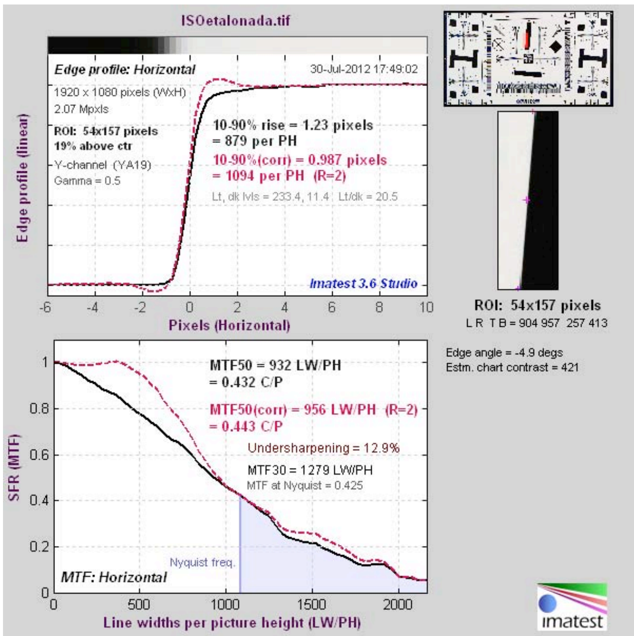
It may be concluded that the nominal EI is around ISO 600, and the effective EI is between ISO 400 and 1600. However, it should be pointed out that we can use higher ISO values, at least up to ISO 5000, since we can see the noise but it is not really aggressive.

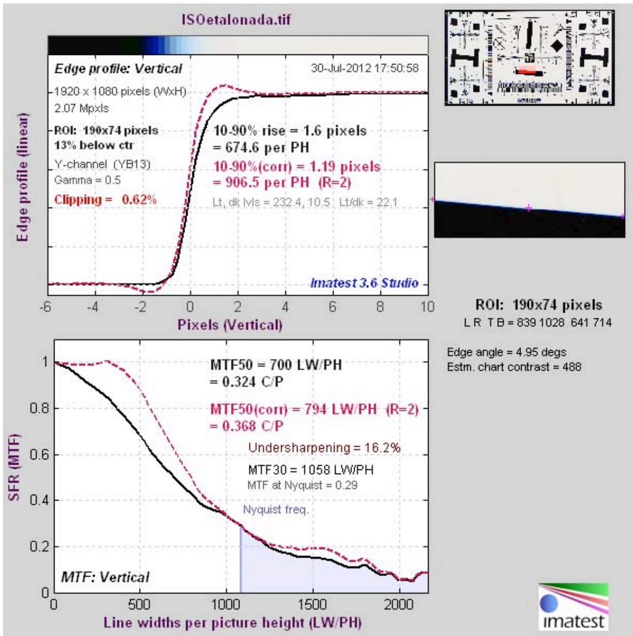
For everyday shooting I chose the suggested ISO by the manufacturer, ISO 850 for the camera, and I arrange my lightmeter at 800. Throughout clip shooting, as far as possible I try to overexpose slightly, up to 1/3 stop, in order to get a bit cleaner blacks and with more detail.

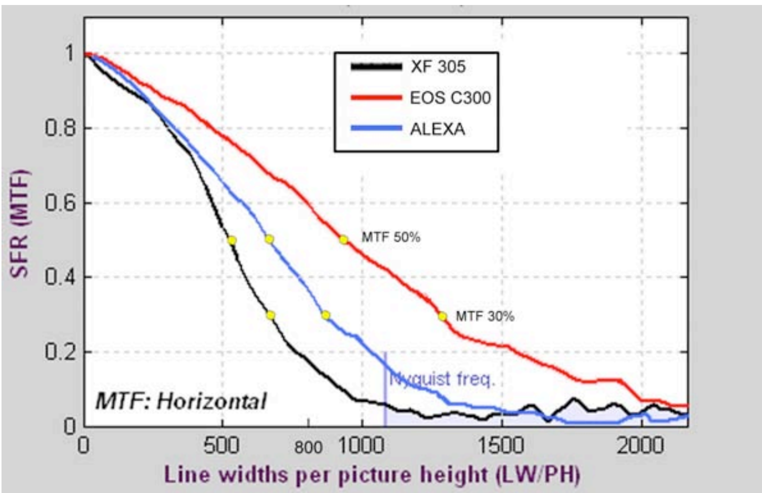
Just we would like to add that the camera has a high sensitivity and *discreet* noise, and the noise texture is close to be *tender*.

RESOLUTION/SHARPNESS

In addition to the sensitivity and noise of the camera, we were specially surprised at its resolution and extraordinary sharpness. The camera provides different formats and resolutions; they are the same that we have already analyzed in the article about the XF305. For test purposes, we have directly chosen the greatest resolution possible, 1920x1018 at 50 Mbps, we have shot images on camera cards at 8 bits, 4:2:2 MPEG-2. We have got the MTF curve through Imatest program, then we have compared it with resolutions that we have obtained with other cameras. This excellent sharpness is caused by the new CMOS sensor which has 4206 x 2340 photosensors, with 3840 x 2160 active that do not need to interpolate since it has, in fact, 1920 x 1080 in the blue and red channels, whereas the green channel is built with two mosaics of 1920 x 1080 each one. It means that sensor releases an image of 1920x1080 4:4:4. Using two green mosaics in order to form the green channel has the advantage of having less Moire, moreover it increases both the dynamic range and the effective level of saturation on its video output.







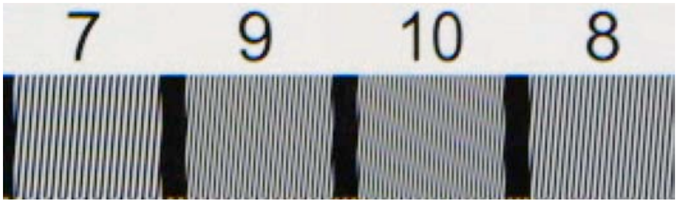
Comparing horizontal resolution of the three cameras

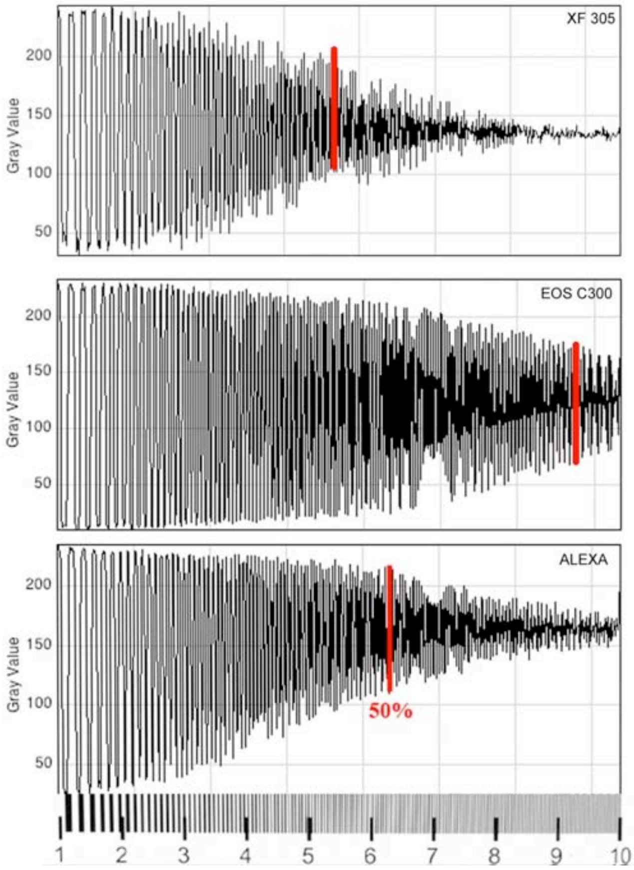
Rolling Shutter test in INFOTV

Again, it should be pointed out that results come from the lens and the recording process that we have used. For horizontal resolution, we have a 932 LW/PH value at 50% , the value is tremendously high for an HD camera. Vertical resolution is quite lower, it is close to 700 LW/PH.

We have made a profile of the resolution lines to see better, then we have compared result with the XF305 (made by the same manufacturer) and the ALEXA, which gives also an 1920x1080 image. Red mark shows approximately the 50% value.

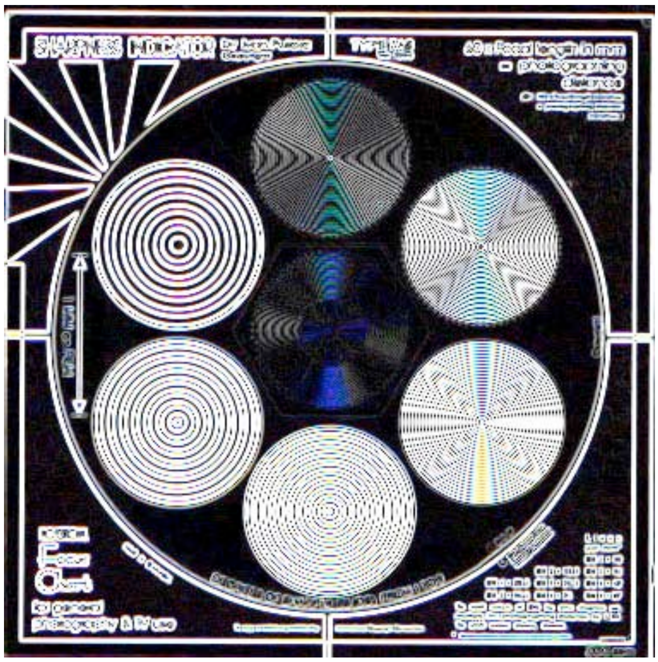
We should not forget that we carry out the standard evaluation of the resolution in HD regarding the 800 TVlines/ph, so the EOS C300's sharpness regarding this value is slightly above 60% (if we consider the influence of the lens). Is is really a high level of sharpness. However, the other side of such sharpness is, on the one hand the Moire of chrome that we have observed, and, on the other hand a less diagonal resolution.





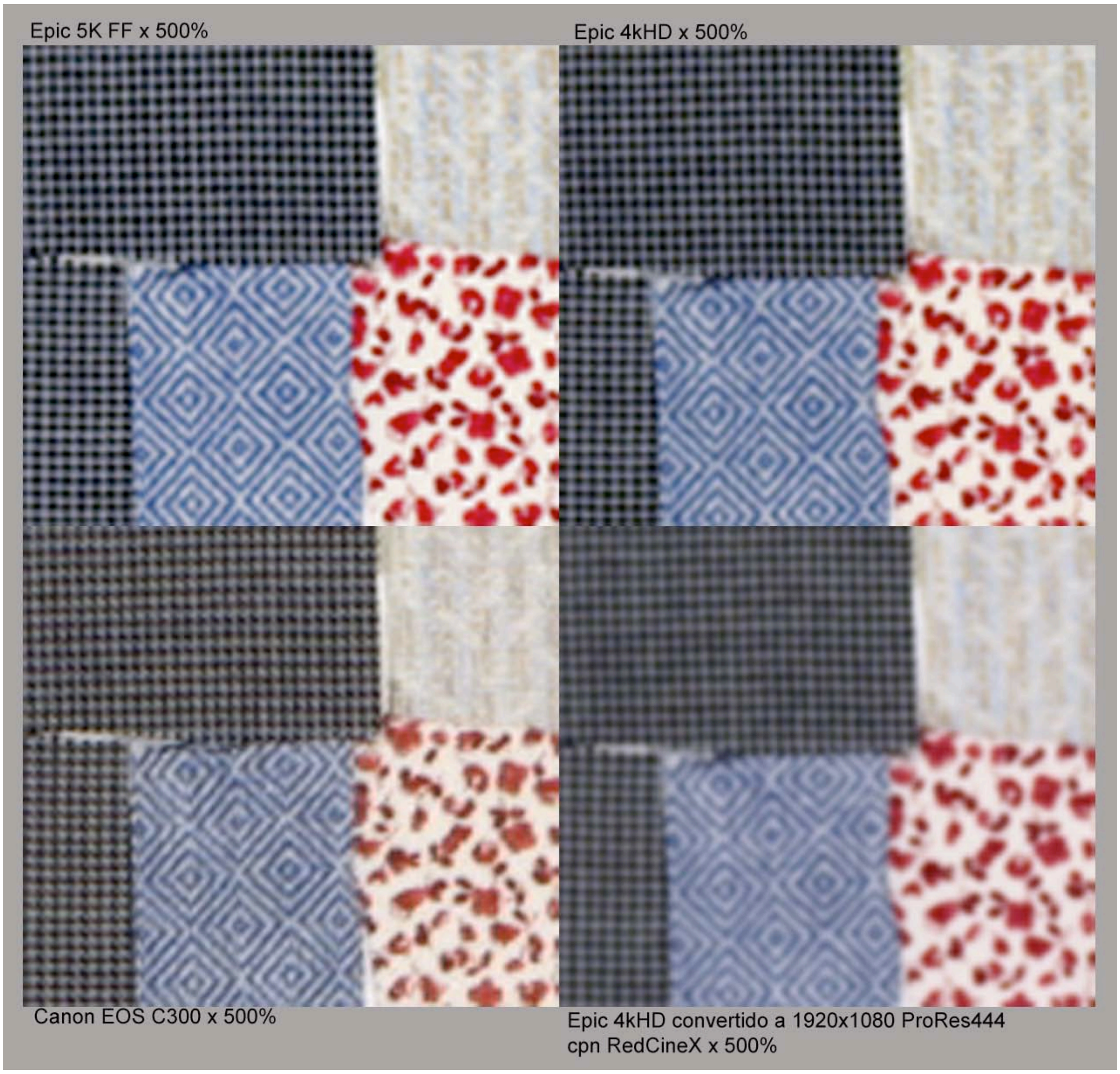
Comparing profiles of resolution lines

We can also see the Moire of chrome on the Putora chart; it is specially visible from 31.3 lpmm. We can also see a sawtoothed edge on the diagonal of the chart.



Regarding the Moire, manufacturer itself has settled that the green channel takes priority. This channel provides practically the luminance (Y) at the expense of an increase of Moire in the red and blue channels, above all for the highest frequencies; since in the real world, beyond the charts, the lack of Moire of luma gives great sharpness to the images.

On the next image, we show the comparison of a cutting of our Prêt-à-Porter chart between the EOS C300 and two formats of RED, as well as another one, in which we have changed the 4KHD format into 1920x1080 ProRes. We can clearly see how the original formats of RED show better sharpness, above all at 5K. Nevertheless, it is still surprising what a good sharpness the EOS C300's has as compared to the RED 4KHD, though we can see differences on the texture between both of them. If we focus on the print fabric with the red flowers, with the 4KHD we can see better its two tones, the background and the flowers than with the Canon. The same happens with the texture of the other fabric (top on the right). However; as we have changed the 4KHD format into a conventional HD, the EOS C300 shows significantly more sharpness.



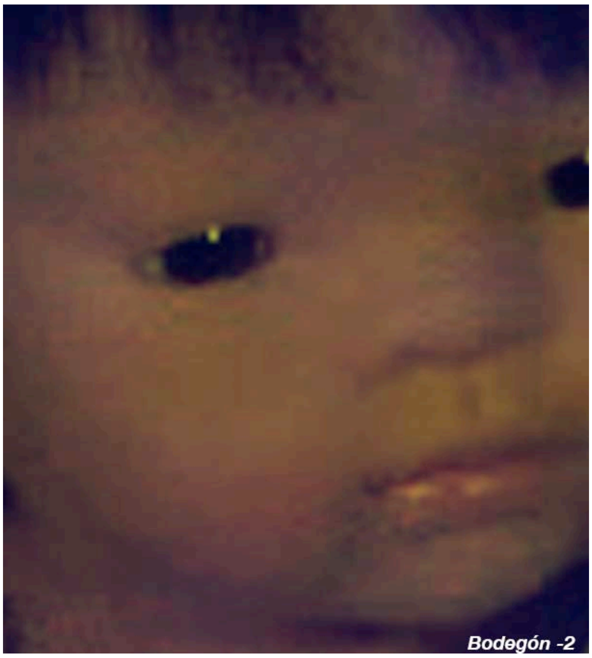
Next, we show other comparison with the Panasonic AF100 camera. With no doubt, both sharpness and texture are much higher with the Canon camera.

On the other hand, we have seen some artifacts on the charts, which are caused by the compression. We could verify them on the images of still-lifes. On the right, we show the face of our doll 璐娜, enlarged 800 times, and underexposed –2 stops. We can clearly see the artifacts.

We have also seen Moire in some fabrics of the still-life.

Despite of the excellent work that Canon does with its compression system, we believe that an 8 bits recording system at MPEG-2 is not enough for a sensor with such features.

Let us see some images from outdoor locations, then let us check their general appearance regarding sharpness and resolution. So, we have taken some frames from the clip shot in the mountains of Madrid, near to Boca del Asno, as well as in the Juan Carlos I Park, in the city of Madrid, both in Spain.



Zoom Canon 24-70. Lens 50mm. T 5.Ggamma curve Canon Log. ISO 850.5600ºK 25 fps. Shutter 180º. Filter ND2

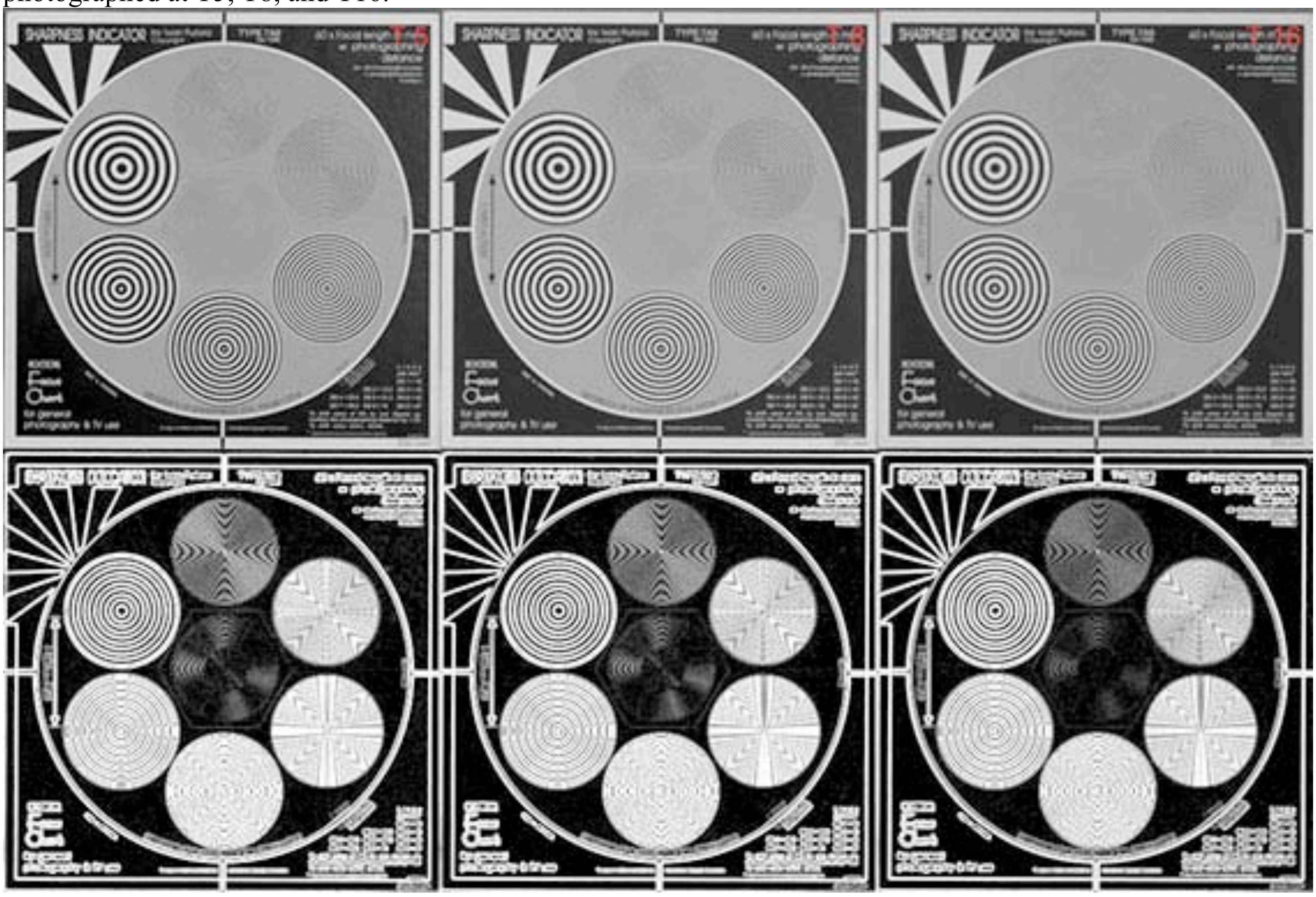
In this frame of the park, we can see the excellent texture and sharpness of the lawn; grass is not in a flat mass, but we can see the blades. Soft clouds which cover the sky, show also a beautiful texture.

Finally, we show a frame in which we can see the sharpness of trees, as well as the texture of stones, although it should be pointed out that we have seen artifacts on the pine barks owing to the compression.

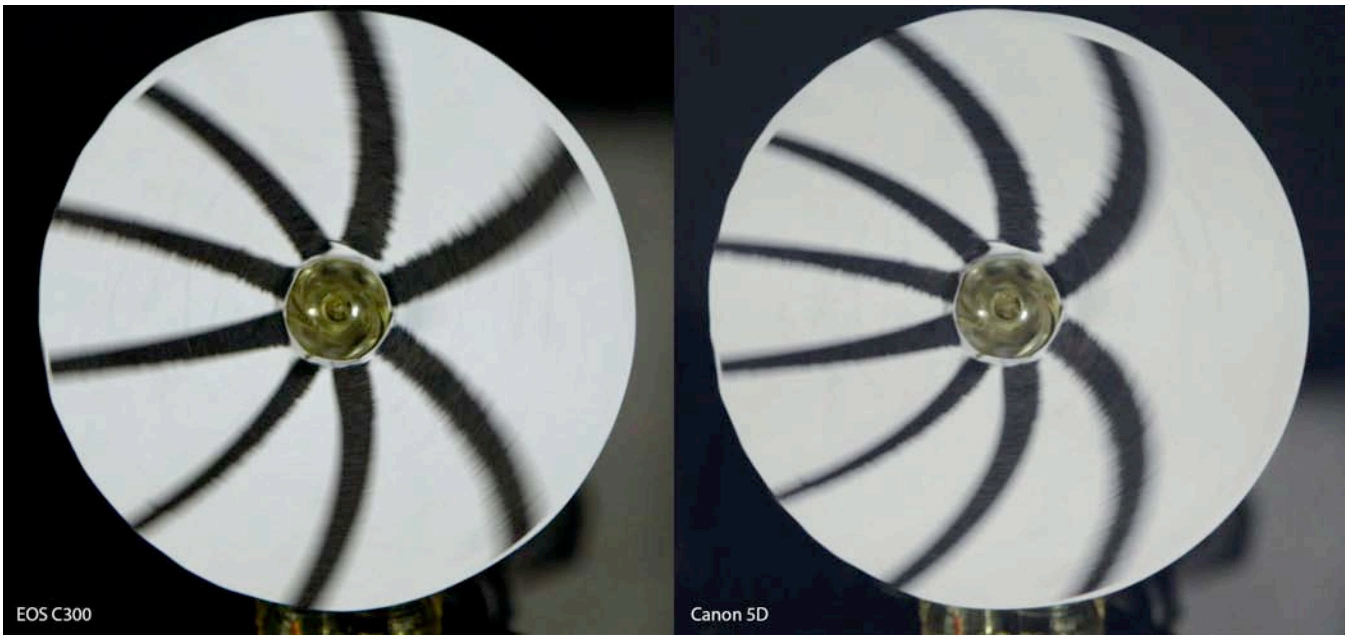
Artistic and technical crew of "Paralelo"

Zoom Canon 24-70. Lens 24mm. T 5. Gamma curve Canon Log. ISO 850.5600ºK 25 fps. Shutter 180º. Filter ND1

With regard to the diffraction effect, we can say that we can hardly see it, as we show it with the Putora chart, photographed at T5, T8, and T16.

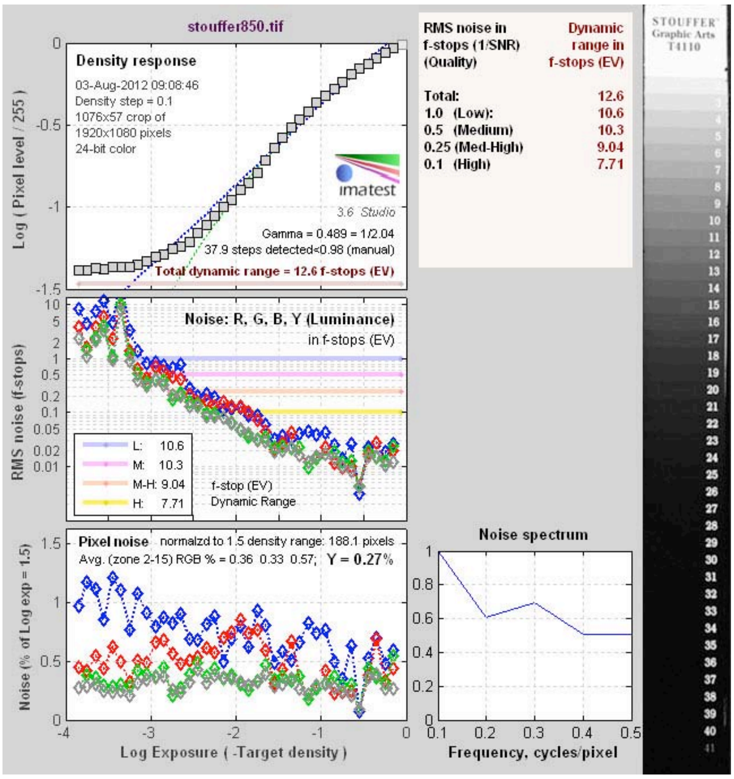


Finally, we should point out that the camera has substantially reduced the Rolling shutter effect. Despite of still being visible, it is not really significant on normal images, that is, far from charts and rotating things. On the next image, we show the shutter effect compared with the 5D, camera made by the same manufacturer. The greater is the artifact built by the shutter, the more bended look the lines of the disc.



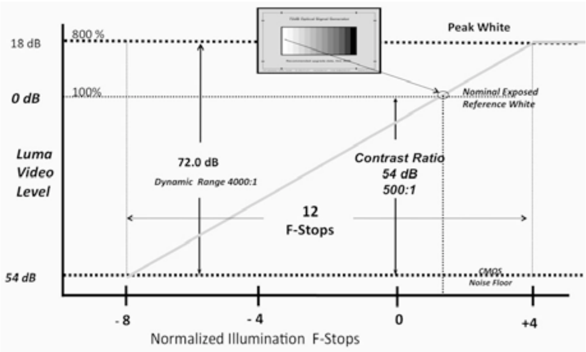
To put an end to this section, our conclusion is, that regarding sharpness and resolution, Canon seems to have improved significantly the HD format. Resolution is really amazing, much higher than with other cameras which release the same format. It is even higher compared to those cameras which are more expensive, although this resolution is a bit “tarnished” by the Moire of chrome, as well as by the artifacts made by the compression.

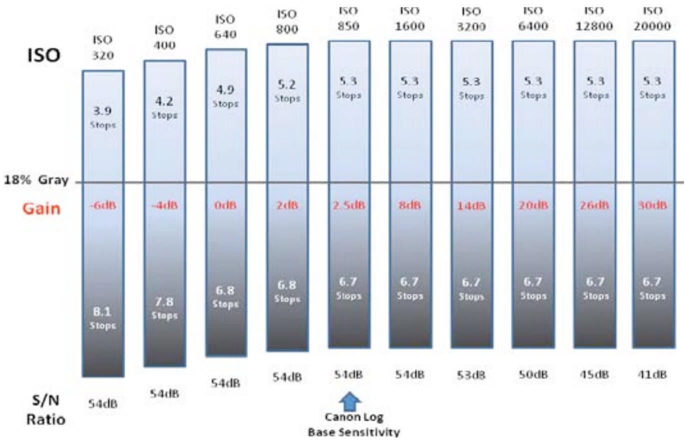
DYNAMIC RANGE



We have only worked with the Canon’s Log curve to settle the dynamic range, since we have already done a long study about the rest of curves in the test about the XF305. The new release of the EOS C300 is that we can use a logarithmic curve which extends, according to the manufacturer, as far as 12 stops. So, we can take advantages of the capabilities of the CMOS sensor, which is 800%. It should be pointed out that we have to apply +2.5dB to depict the 800%, that is, with ISO 850. As we have already shown, the dynamic range distribution regarding the middle gray 18% depends on the applied gain, in other words, on the chosen ISO.

Manufacturer itself, in its document *Sensitometric Characteristics Of The Eos C300 Digital Cine Camera* states that the 12 stops of DR match the green channel (73.5dB), and regarding the noise in comparison with the emulsion of Kodak’s 35mm (*A Comparison of Color negative Films and HDTV Cameras for Television Program Production*), the signal-to-noise ratio is 54dB, that is, around 10 stops. In its document, the manufacturer distinguishes between the dynamic range, which is for us the total dynamic range (latitude), and the effective dynamic range which names the contrast relation, that we know as tonal range at analogic system. The distribution of the dynamic range and tonal range (contrast relation) is clearly explained with the next graph provided by Canon.



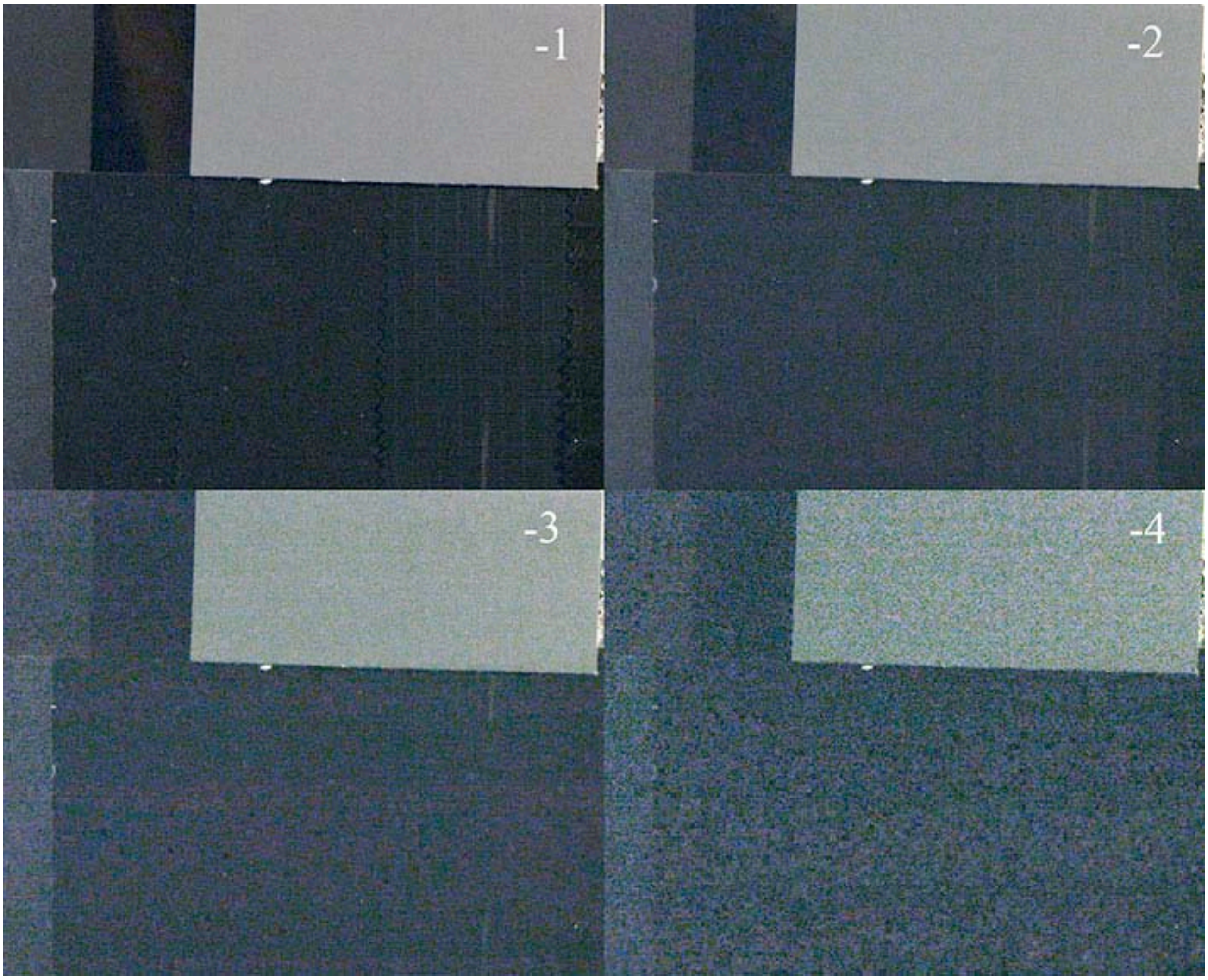


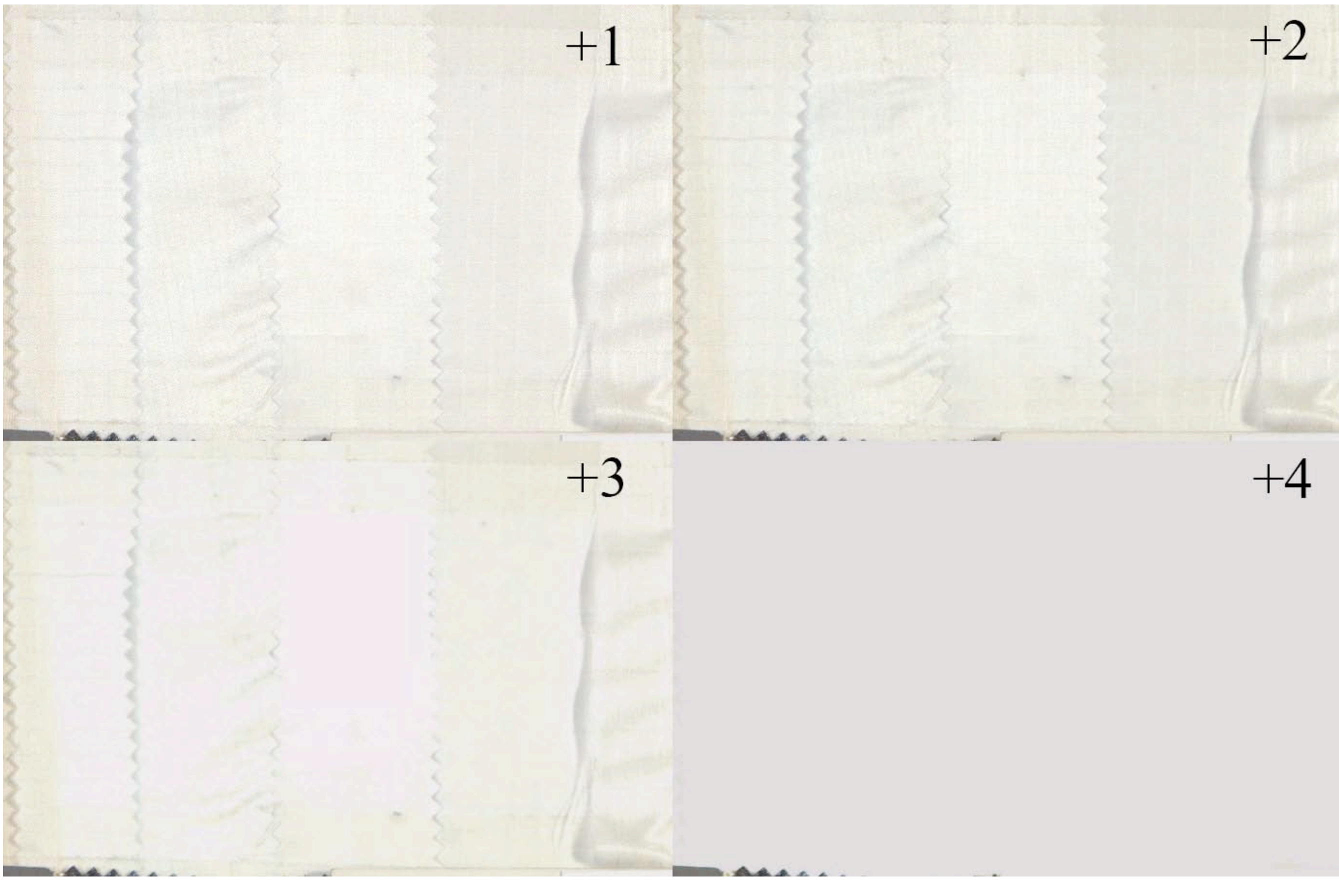
Indeed, we have approximately got the same result with the analysis of the Stouffer strip through Imatest. The total DR regardless the noise is 12.6 stops. If we bear in mind our experience about the evaluation of other cameras, we can consider that the DR is finally between Medium and Medium High values, which represent 0.5 and 0.25 f-stops respectively. Before checking this DR through our charts, still-lifes and frames from outdoor locations, let us see the distribution of the dynamic range according to the used ISO values from the graph provided by the manufacturer.

The signal-to-noise ratio keeps constant up to ISO 1600, then decreases until 41dB with the highest ISO value. The 0 dB value matches ISO 640, and here the distribution of the total dynamic range is 4.9 stops above the middle gray, and 6.8 stops below.

However, manufacturer suggests the 850 ISO value to work with the Log curve, which gives a distribution of the dynamic range of 5.2 stops above the gray and 8.7 below. We have chosen this last ISO value as reference to evaluate the range.

Next, let us see the multiexposures of our fabric charts.

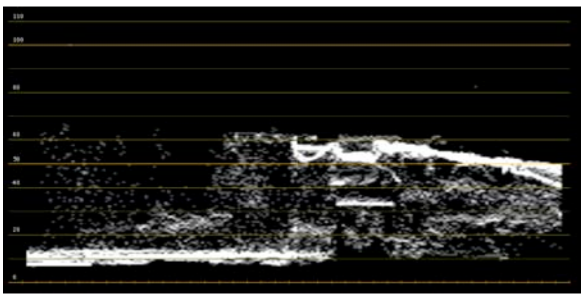


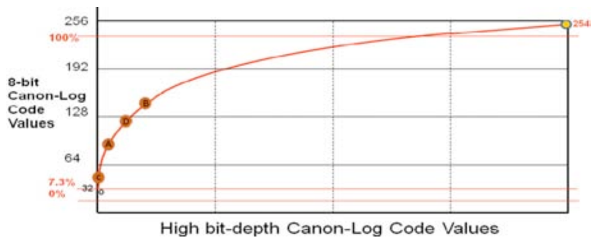


With regard to underexposures, with –2 stops, we can still see the different fabrics and some of their textures, fabrics are at –4 ½ regarding the middle gray for reference; with –3, blacks are at –5 ½ , we cannot see anything but noise. Therefore, we believe that the effective dynamic range will be around 5 stops below gray, although in my case, and to keep the best texture, I will adjust it around 4 ½.

With regard to overexposures; with +2, we can still see the whole texture of the fabrics, which are around 4 ½ stops above middle gray; with +3, detail of whites are a bit clipped, however with +2.5, fabrics have the whole detail. Therefore, I will leave the limit above gray around 5 stops, but I will use 4 2/3 to keep the whole detail. The whole of the effective dynamic range will be from 9 ½ to 10 stops. Now, let us check this range with our still-life.

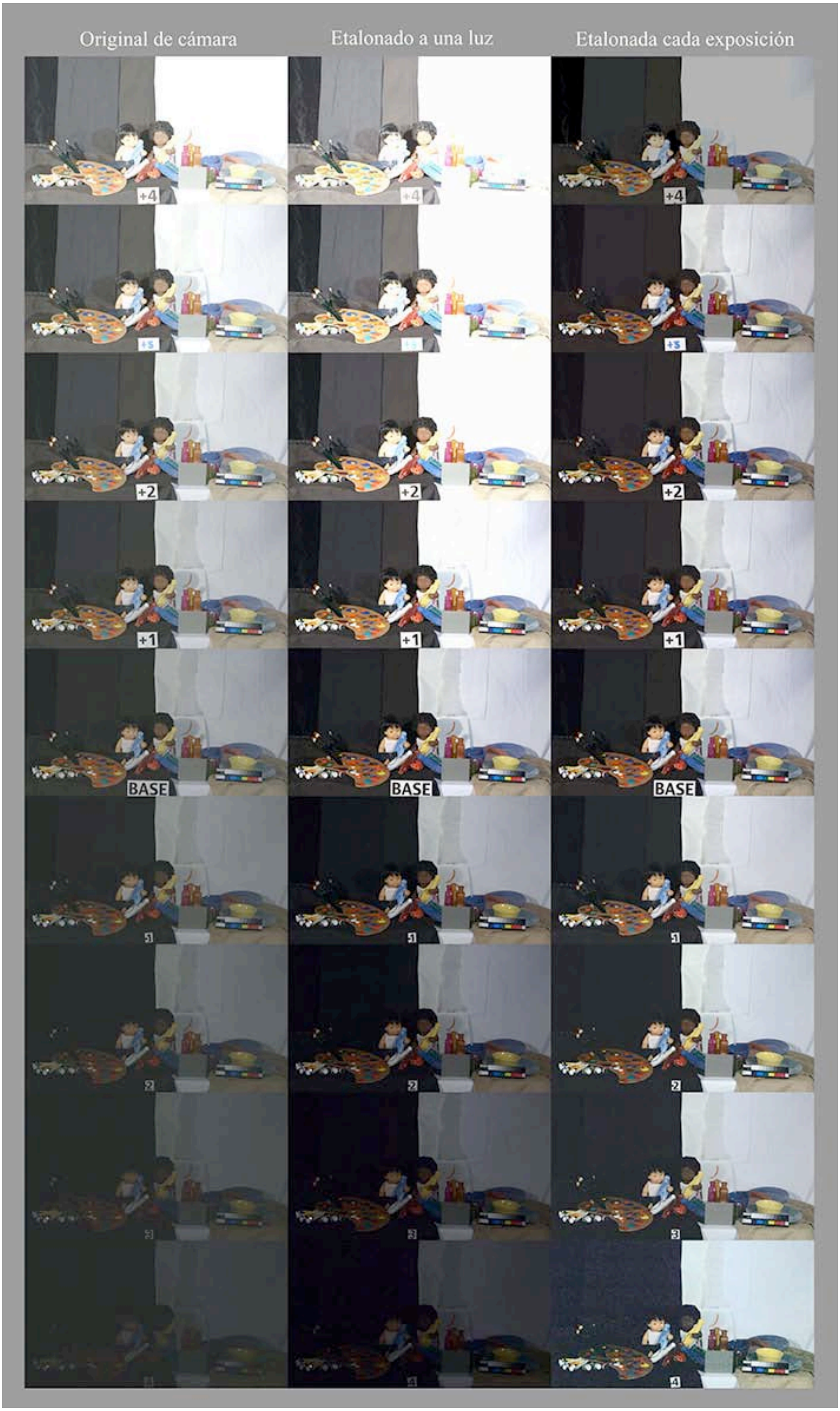
Reference frame of the base exposure. Zoom Canon 24-70. Lens 35mm. T 5.6. Gamma curve Canon Log ISO850..3200ºK 25 fps. Shutter 180º





On the left, we show the still-life with the T stops values regarding the 18% gray. We have also marked four values over the Log gamma curve provided by the manufacturer. Next, we show the luma signal in the waveform monitor. It should be pointed out that the middle gray value is around 33%, and maximum white is a bit above 55%. Black velvet, that is, the darkest area, is a bit below 10%. With these arrangements, the camera can collect the whole tonal range of the scene.

Next, we show the exposure strip.



At one Light

With the base exposure, we can see all of the textures without problems, for both high lights and shadows. In these last ones, the darkest velvet is at –4 ½ stops, we see some texture but with a bit of noise.

With +1, we can see the whole texture of the velvet and all of the black fabrics. We can see a bit of Moire on some of them. Whites are already clipped.

With –1, we can still see the texture of the velvet, which is now at –5.

With –2, we cannot see the texture of the fabric in the center; here, noise is quite visible. We have also seen artifacts of compression, as we have stated in the section about resolution.

With –3, noise is very high. The textures of black fabrics have disappeared, although we can still see the difference among them, above all with the velvet. We can still see the texture of the plastic over the face of the black doll, but with noise.

With –4, the face of the black doll disappears, as well as all of the black fabrics together with their differences.

As we observe the shadow, we consider that we can underexpose until –2 tops. Here, values between –3 and –4 stops keep a good balance and a darkness degree quite clean and deep. As we can see on the dark blue raffia or the plates, color tones keep well, they do not become gray-like too much.

Grading each exposure

With +1 and +2 overexposures, we can recover the whole detail of the white fabrics without problem.

With +3, we can still recover the texture of the white fabrics, even the plastic one. They are at 4 2/3 stops above the middle gray value.

With +4, we cannot already recover anything from the fabrics.

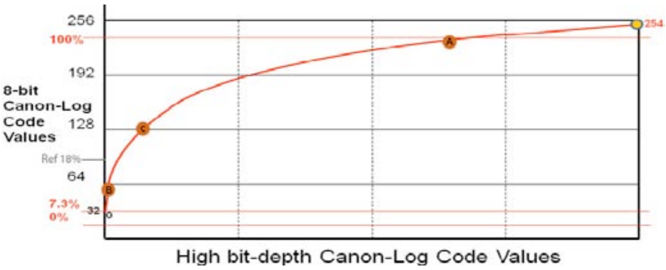
With –1, we can still see the texture of the fabrics, even in case of the velvet, which is now at –5 ½ and it is in its limit, since the noise is quite visible, although it does not cloak totally the fabric. However, we should call the attention that that we can see noise at shadows.

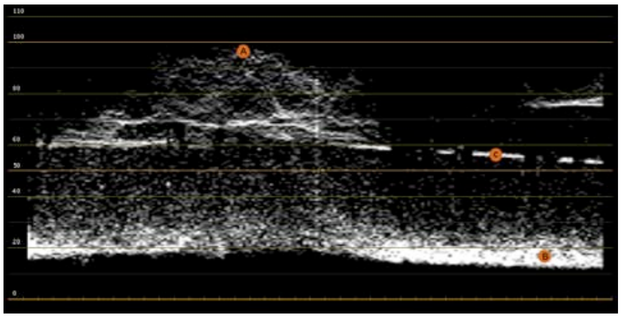
With –2, we cannot see the texture of the velvet, but we can see the difference of brightness on the other black fabrics.

With –3 and –4, noise is very significant.

Let us see an image from outdoor location.

Original from camera .Lens 85mm. T 13. Gamma curve Canon Log. ISO 850.5600ºK 25 fps. Shutter 180º. Filter ND





The camera covers the tonal range of the frame. We show the original image with the representation of its luminance value on the waveform monitor, as well as three characteristic values over the Log curve. Point **A** is the area of greatest luminance, that is, the outlines of the clouds lighted by the sun at dusk. This white is around 5 stops above middle gray. Zone **B** is the darkest area, that is, the trees. They are a bit more than 4 stops below. Point **C** is the value of gray slightly above middle gray, it is around 1 stop. We exposed to keep detail for high lights; they are slightly below the 100% limit.

Previous frame graded

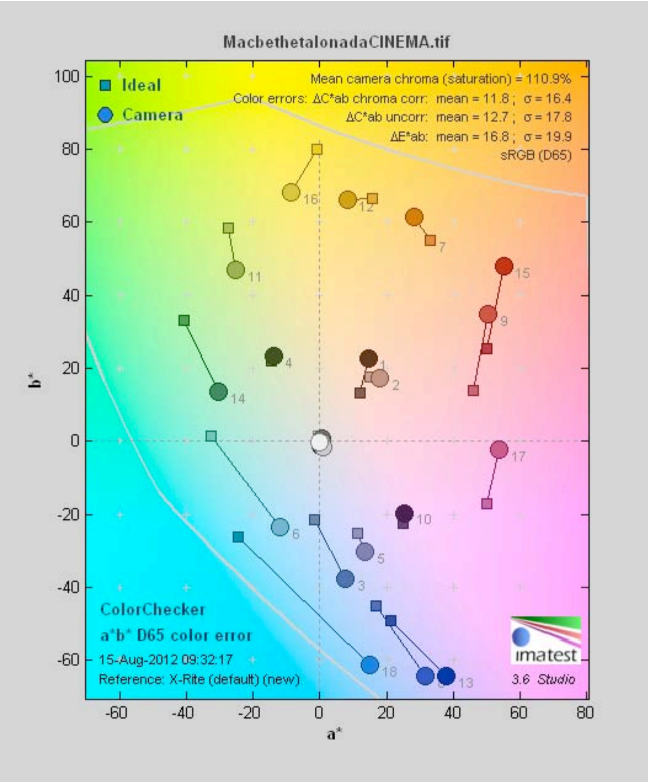
Therefore, from the above study, it may be concluded that the effective dynamic range is around 10 stops. 5 stops below and 5 stops above middle gray. However; as we have already stated, I use a value a bit lower to keep the greatest possible detail without showing lot of noise. So, I use a range, which is between 4 2/3 stops above and 4 ½ stops below our reference, in other words, the whole range is around 9 ½ stops.

Despite of its effective range, the camera can distinguish brightness differences near up to 2 more stops. We can consider that this dynamic range is good regarding the current situation in the development of the cameras. It is normal but nothing exceptional, since it is lower than other cameras of the professional environment.
Nevertheless, Canon increases the useful dynamic range of this camera a bit more than 2 stops regarding its previous model of high series, the XF305.

Camera crew at work

COLOR

We are going to study especially the *matrix* Cinema (Canon Log) in this section. For test purposes, first we have photographed the Macbeth chart, and then it went through Imatest. Here we present the results:



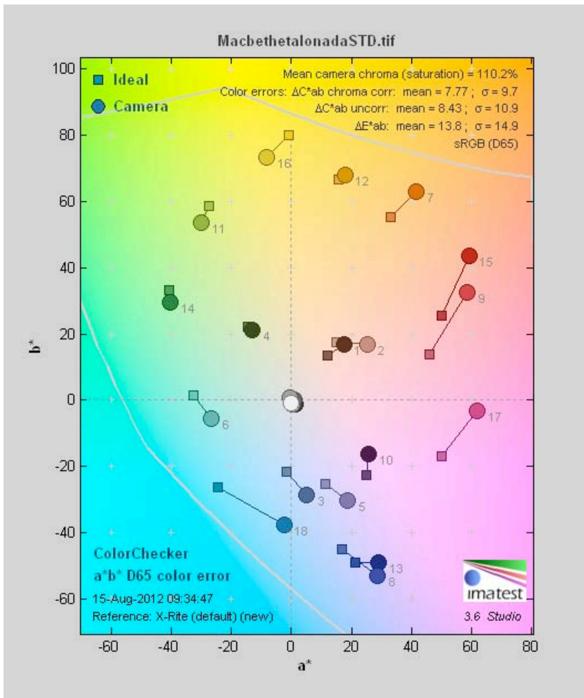
First of all, we can see that colors are saturated, above all reds, near 11%. The deviation value sigma (sigma *(RMS)* is a unit which measures the deviation of photographed colors by the camera regarding the standard values) is 17.8 without correction; the value is really high. And what more significant is that cyan shifts onto blue, considerably significant on samples (6) and (16). The green sample (14) shows a clear deviation into cyan, which can be clearly seen on the right graph. Here the greatest square is the color exactly the way it was photographed, and matches the circles on the left graph. The small squares, in the center of the great one, are the ideal values for colors of the chart, corrected by the luminance of shooting. Finally, the small rectangles are the ideal values for colors without luminance correction. On the same graph, we can clearly see the differences of tones among cyan, for example, samples (6) or (13).

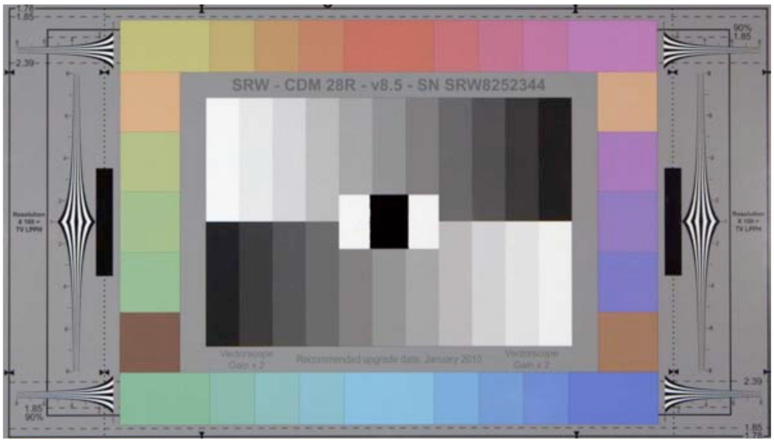
Blue (13) is slightly magenta.

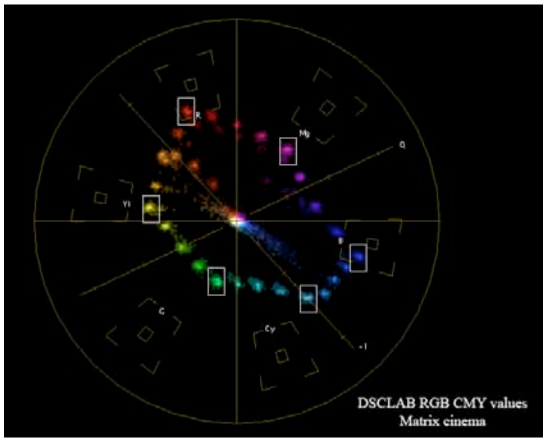
Reds (9) and (15) show a large saturation and a slight deviation into oranges. Significant is the deviation of yellow (16) into green.

Despite of being surprised by color deviations, it does not mean that the camera is not able to reproduce them well, since manufacturer is able to change the process to calculate the color, while seeking certain features, which might improve the color appearance. However, we wanted to compare the *matrix* Cinema with the *matrix* EOS STD, because the last one makes equal the color of the camera with its relatives, the DSLR. The value sigma regarding EOS STD is 9.7, and as we can see, deviation of green and cyan are not so significant.

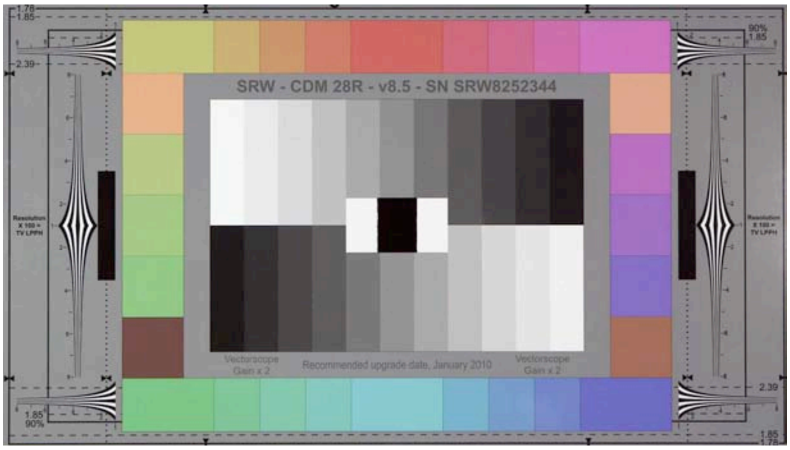
We have also checked deviation from the *matrix* Cinema with the DSCLAB chart, as we can see below.

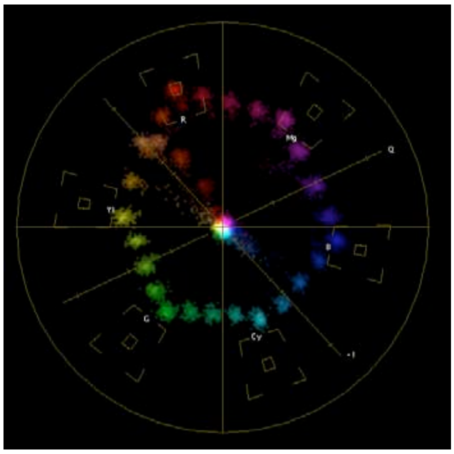






The chart is slightly corrected to get a gray totally neutral. On the vectorscope, we can see deviation of green into cyan, as well as cyan into blue. Now, let us see the difference with the *matrix* EOS STD.



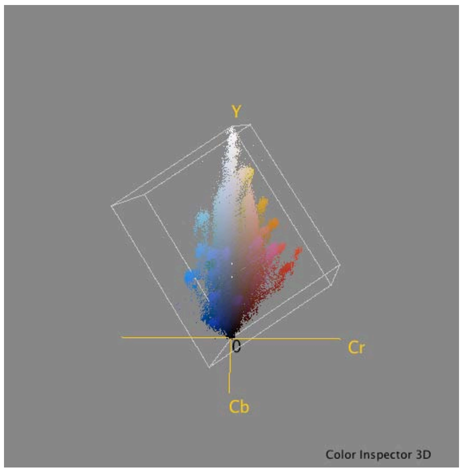


Colors are practically in their places with this last *matrix*. They have their tones according to the HD standard policy.

It seems to us that it should be suitable to apply a bit of general desaturation, and take over the *matrixes* to correct slightly reds, as we have made with the XF305, in other words, we have to change the R-G.

On the other hand, after watching the color of the still-life, we have noticed that high lights shift onto blue with overexposures, and black changes into red-like.

Next, let us see how the skin tones look.

Original from camera. Zoom Canon 24-70. Lens 42mm. T 5.6. Gamma curve Canon Log. ISO 850.3500ºK 25 fps. Shutter 180º. On the right, color representation in the YCbCr color space. We can see the excessive saturation of red and blue tones

Skin tones are saturated with the Spydercheker chart graded to middle gray, they are slightly orange-like, and seem a little artificial. Skin tone does not show lots of shades, is uniform and little natural. It is typical of cameras with insufficient quantifying (let us remind that we are working with images with just 8 bits). To get a better skin tone, we have to desaturate the image through the *gain* from the Color Matrix menu of the camera (we have used –10), in addition we have to change the R-G value; to us, according to Alan Roberts' suggestion, we

Above, images show two frames with different contrast relation over the face. If we pay attention to the 8:1 (3 stops of difference), shadow area shows still natural, with texture and detail. However; to the 32:1, the darkest area of the face shows a lot of noise, no texture, and compression artifacts. In addition, it shows also some posterization effect, as we can see on the cutting in the red channel.

Red cannel 8:1.

Red channel 32:1

Of course, a careful lighting and a correct work in postproduction can improve the appearance of the skin tone to make it look more *natural* and more *organic*.
Next, as we can see on our dancers in outdoor locations, the coldest skin tones are tenderer.

Original from camera. Zoom Canon 24-70.Lens 47mm. T 7.1. Gamma curve Canon Log. ISO 850.5600ºK 25 fps. Shutter 180º

It may be concluded that representation of the color by the camera is within the scope of a space as the YCbCr (4:2:2) to 8 bits, and with a MPEG-2 Long-GoP compression. In other words, color tones are not so fine regarding their shade; they are more saturated in general. They show finally certain texture of *digital video* for my liking.

CONCLUSIONS

Our impression of the camera, broadly speaking, is good, however we feel that it has fallen short if we keep strictly in the photographic field. Despite of its ingenious-designed sensor, which is able to take the 1920x1080 HD format beyond the usual resolution regarding such format, as well as its high sensitivity and a noise level very *analogical*, the final image suffers from both the funnel of 8 bits (very well used) and the MPEG compression and a narrow space of color. As a result, images have still texture of *digital video*, certainly more sophisticated, but they lack both depth of tones and richness of shades that other cameras of higher range show. Of course, among these considerations we are not thinking about where the camera is within the market or what its price is. These are aspects that we leave at the discretion of manufacturer and buyers. We will see how long the EOS C300 lasts, precisely now that Canon releases onto the market a new camera with more resolution and apparently recording to 10 bits.

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