

A study on the development of large and medium format cameras in digital image technology

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Abstract:

Professional photographers face some problems as a result of using small format cameras such as perspective defects and the appearance of the photographed subject being not sharp in all its details when the subject is tilted at an angle in front of the lens, and some other problems, so the research problem of this study is the need to know the developments that have occurred to large and medium format cameras, and the main objective that it's necessary to know the features and characteristics that distinguish these cameras from small format cameras, so the significance of the study is that the professional photographer can choose what suits him to obtain the highest possible quality of the digital image, the researcher followed the descriptive and analytical approach to study the evolution occurred to these cameras and the advantages that distinguish these cameras from a small camera. Where the manufacturer of large and medium format cameras developed those cameras and because those cameras have structural characteristics that distinguish them from small cameras where they can do many movements such as rise and fall, tilting, shifting and swinging movement, these movements make them able to make perspective adjustments and choose the focal plane, control the depth of field and the level of sharpness, those movements also make those cameras able to apply Scheimpflug law which allows the subject to appear sharp in all its details even if it is tilted at an angle in front of the lens. The manufacturers have also developed sensitive sensors where it became digital backs which are attached to the cameras, this is so that features of these cameras can be combined with modern digital technology, The manufacturers also increase the size of sensitive sensors to increase the amount of light recorded in each pixel and the dynamic range increases, the manufacturers have also developed the technologies of these sensitive sensors as they inventing multi-exposure systems these systems allow recording of full-colour information at each point of the image without the need of interpolation to guess the missing colours and thus the accuracy of colour registration increases, one of the most important search results is that the photographer prefers these types of cameras to achieve the highest possible quality of the digital image.

Keywords:

Digital photography, large format camera, Medium format camera, Perspective correction, the plane of sharp focus, Multishot

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