

Abstract: The thesis is about obtaining absolute radiometric values of a scene using only a digital camera. A further usage of this data to calibrate a screen to perform experimental dark adaptation measurements of the human eye is proposed. To get the radiometric values, or to be exact, radiance values, the camera response function (CRF) of the camera used had to be found first. The CRF determines how the light hitting the camera sensor affects the brightness of the pixel values of the captured image. Using the inverse CRF function we were able to get the radiance from the pixel values. The thesis also contains a description of what factors affect the dark adaptation itself.