Physics of digital photography

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lumen (unit) luminance luminance (relative) luminosity function luminous efficacy luminous exitance luminous exposure luminous flux luminous intensity Luther-Ives condition lux (unit) MacAdam's diagram macrocontrast magnetic field magnification magnification (pupil) Malus' law manual mode Marechal criterion marginal ray Maxwell's equations medium cone (eye) meridional direction meridional plane metal-oxide semiconductor metamer metameric error metamerism metamerism index meter calibration metering modes Michelson equation microcontrast middle grey modulation depth modulation transfer function monitor profile monochrome MTF MTF (aperture diffraction) MTF (detector-aperture) MTF (four-spot filter) MTF (optical-low pass filter) MTF (polychromatic)

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MTF (system) MTF area (metric) MTF50 (metric)

natural vignetting nearest-neighbour interpolation nodal point noise noise (dark-current shot) noise (fixed-pattern) noise (photon shot) noise (read) noise (temporal) noise-equivalent exposure noise floor noise measurement noise models noise power noise reduction numerical aperture Nyquist frequency (sensor) Nyquist rate

object plane object space observer resolving power optical axis optical frequency optical intensity optical low-pass filter optical low-pass filter PSF optical low-pass filter MTF optical path difference optical quality factor optical transfer function optical transfer function (system) opto-electronic conversion function output-referred colour space output-referred units

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perceived image quality perceived resolution perceptual (rendering intent) phase transformation function phase transfer function photo-response non-uniformity photodiode photoelectron photoelectron count photoelement photogate photographic constant photographic dynamic range photographic exposure photographic stop photometric exposure photometry photometry (average) photon photon shot noise photopic vision $Photoshop^{\textcircled{R}}$ (software) photosite picture height pixel count pixel pitch pixel-response non-uniformity pixels per inch (unit) Planck's constant Planck's law Planckian locus plane of polarisation point spread function Poisson distribution polarisation polarising filter polarising filter (circular) polychromatic illumination polychromatic MTF polychromatic OTF polychromatic PSF posterisation pre-filtering primary (colour) primary (imaginary)

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primary (raw) principal plane principal point printer profile printer resolution profile (ICC) profile (display) profile (printer) profile connection space program mode programmable gain amplifier ProPhoto RGB colour space PSF PSF (amplitude) PSF (aperture diffraction) PSF (detector aperture) PSF (four-spot filter) PSF (optical low-pass filter) PSF (polychromatic) PSF (system) pupil function pupil magnification pure spectrum colour quantum efficiency radial spatial frequency radiance radiant exposure radiant flux radiant intensity radiometry radius of curvature read noise read noise measurement raw channel raw colour space raw dynamic range raw pixel vector raw primary raw value raw white-balance multipliers ray tangent slope Rayleigh quarter-wave limit Rayleigh scattering

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