Supporting Information Captions

S2 Figure. Collection of 3 figures used in performance characterization of various digital colposcopy systems. Luminance contour plots for the for each digital colposcope system are plotted with intensity normalized from 0 to 1, with scale bars = 10 mm (**S2 Fig A**), with (from left to right) Leisegang Optik 2, POCkeT Colposcope 5MP (labeled here as 5.0MP TVDC), POCkeT Colposcope 2MP (labeled here as 2.0MP TVDC), Canon SX50HS, and Apple iPhone 5S. Representative images captured of checkerboard targets used to quantify level of distortion are shown in (**S2 Fig B**), with (from left to right) Leisegang Optik 2, POCkeT Colposcope 5MP (labeled here as 5.0MP TVDC), POCkeT Colposcope 2MP (labeled here as 2.0MP TVDC), Canon SX50HS, and Apple iPhone 5S. Representative images captured of a Thorlabs's USAF1951 resolution target (R3L3S1N) used to determine field of view and resolving power are shown in (**S2 Fig C**), (from left to right) Leisegang Optik 2, POCkeT Colposcope 5MP (labeled here as 5.0MP TVDC), POCkeT Colposcope 2MP (labeled here as 2.0MP TVDC), Apple iPhone 5S, and Canon SX50HS.

S2 Fig A.tiff

S2 Fig B.tiff

S2 Fig C.tiff

S3 File. Collection of 2 CAD (computer aided design) drawings for the custom PCB (printed circuit boards) used for the POCkeT Colposcope. The design file (*.*pcb) for the concentric illumination ring for white and green SMD (surface mount device) miniature LEDs (light emitting diodes) (**S3 CAD A**) that can be open with ExpressPCB's free circuit design package. A black and white screen capture of the concentric ring design can be seen in (**S3 Fig A**). The design file (*.*pcb) (**S3 CAD B**) for the Arduino microcontroller controlled constant current LED drivers that can be opened with ExpressPCB's free circuit design package. A black and white image of the control board can be seen in (**S3 Fig B**).

S3 CAD A.pcb

S3 CAD B.pcb

S3 Fig A.bmp

S3 Fig B.bmp

S4 File. Collection of five 3 dimensional (3D) CAD (computer aided design) drawings for the custom ABS 3D printed handle for the POCkeT Colposcope and detailed Bill of Material Table. The design file (*.*) for the polarizer and LED mount (**S4 CAD A**) can be opened with most open source 3D CAD packages. The design file (*.*stl) rear-handle left half shell (**S4 CAD B**) and rear-handle right half shell (**S4 CAD C**) can be opened with most open source 3D CAD packages. The design file (*.*stl) front-handle left half shell (**S4 CAD D**) and front-handle right half shell (**S4 CAD E**) can be opened with most open source 3D CAD packages. The build units for all these files **S4 CAD A to E** are in millimeters and were designed on Dassult Systemes' SolidWork 2013. These were rapid prototyped on the Stratasys Dimension 1200es ABS fused deposition modeling (FDM). (**S4 Table A**) is the detailed bill of materials for our prototype build.

S4 CAD A.stl

S4 CAD B.stl

S4 CAD C.stl

S4 CAD D.stl

S4 CAD E.stl

S4 Table A.docx

S5 File. Collection of raw spectra files for all the digital colposcopy illumination systems evaluated. The dark reference repeated measure (n=5) spectra files were captured at 10 ms integration time (**S5 Spectra DA to DE**) and at 100 ms integration time (**S5 Spectra DDA to DDE**) are in (*.*.txt) form with wavelength intensity measured from 178 to 888 nm. The white LED illumination of the Leisegang Optik 2 colposcope's repeated measure (n=5) spectra files were captured at 10 ms integration time (**S5 Spectra LO2-W-A to E**) and at also at 10 ms integration time for the green filter mode of illumination (**S5 Spectra LO2-G-A to E**) are in (*.*.txt) form with wavelength intensity measured from 178 to 888 nm. The white halogen illumination of the Wallach Zoomscope colposcope's repeated measure (n=5) spectra files were captured at 100 ms integration time (**S5 Spectra WZ-W-A to E**) and at also at 100 ms integration time for the green filter mode of illumination (**S5 Spectra WZ-G-A to E**) are in (*.*.txt) form with wavelength intensity measured from 178 to 888 nm. The white LED illumination of the 5MP POCkeT Colposcope's repeated measure (n=5) spectra files were captured at 100 ms integration time (**S5 Spectra PC-FIVE-W-A to E**) and at also at 100 ms integration time for the 5MP POCkeT Colposcope's green LED illumination (**S5 Spectra PC-FIVE-G-A to E**) are in (*.*.txt) form with wavelength

intensity measured from 178 to 888 nm. The white LED illumination of the 2MP POCkeT Colposcope's repeated measure (n=5) spectra files were captured at 100 ms integration time (**S5 Spectra PC-TWO-W-A to E**) . are in (*.*.txt) form with wavelength intensity measured from 178 to 888 nm.

S5 Spectra DDA.txt

S5 Spectra DDB.txt

S5 Spectra DDC.txt

S5 Spectra DDD.txt

S5 Spectra DDE.txt

S5 Spectra DA.txt

S5 Spectra DB.txt

S5 Spectra DC.txt

S5 Spectra DD.txt

S5 Spectra DE.txt

S5 Spectra LO2-G-A.txt

S5 Spectra LO2-G-B.txt

S5 Spectra LO2-G-C.txt

S5 Spectra LO2-G-D.txt

S5 Spectra LO2-G-E.txt

S5 Spectra LO2-W-A.txt

S5 Spectra LO2-W-B.txt

S5 Spectra LO2-W-C.txt

S5 Spectra LO2-W-D.txt

S5 Spectra LO2-W-E.txt

S5 Spectra WZ-G-A.txt

S5 Spectra WZ-G-B.txt

S5 Spectra WZ-G-C.txt

S5 Spectra WZ-G-D.txt

S5 Spectra WZ-G-E.txt

S5 Spectra WZ-W-A.txt

S5 Spectra WZ-W-B.txt

S5 Spectra WZ-W-C.txt

S5 Spectra WZ-W-D.txt

S5 Spectra WZ-W-E.txt

S5 Spectra PC-FIVE-G-A.txt

S5 Spectra PC-FIVE -G-B.txt

S5 Spectra PC-FIVE -G-C.txt

S5 Spectra PC-FIVE -G-D.txt

S5 Spectra PC-FIVE -G-E.txt

S5 Spectra PC-FIVE -W-A.txt

S5 Spectra PC-FIVE -W-B.txt

S5 Spectra PC-FIVE -W-C.txt

S5 Spectra PC-FIVE -W-D.txt

S5 Spectra PC-FIVE -W-E.txt

S5 Spectra PC-TWO-W-A.txt

S5 Spectra PC-TWO-W-B.txt

S5 Spectra PC-TWO-W-C.txt

S5 Spectra PC-TWO-W-D.txt

S5 Spectra PC-TWO-W-E.txt