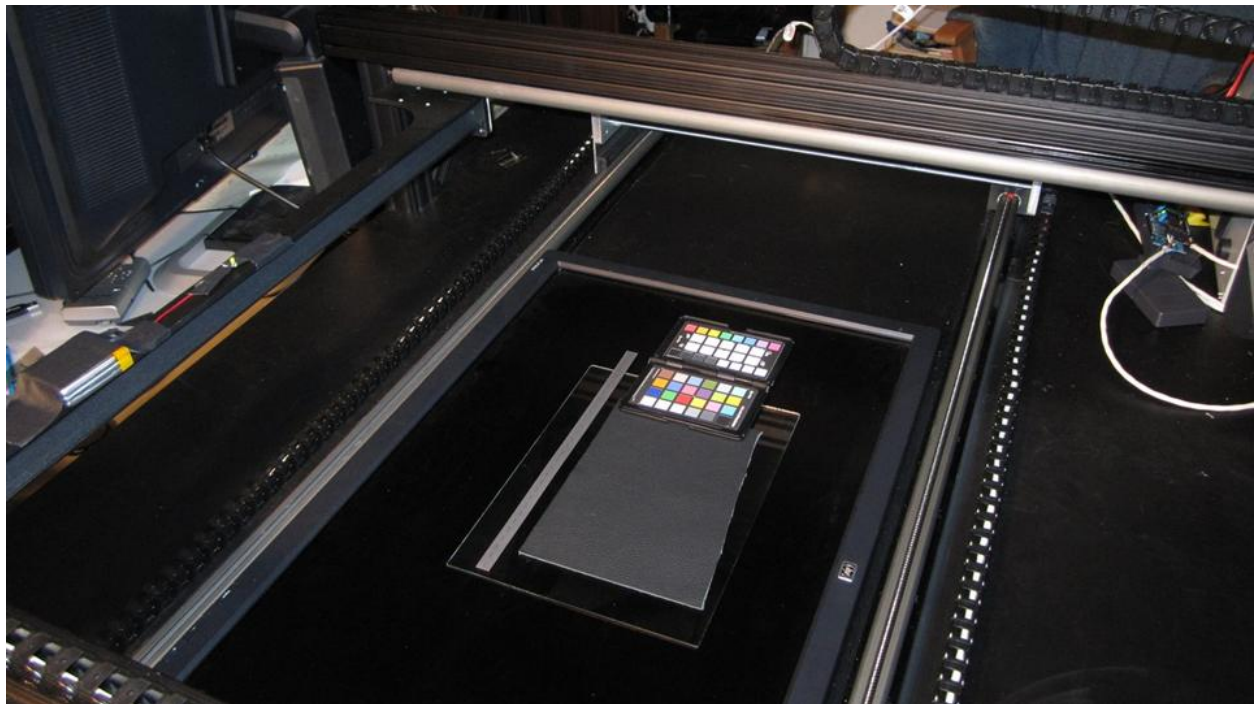
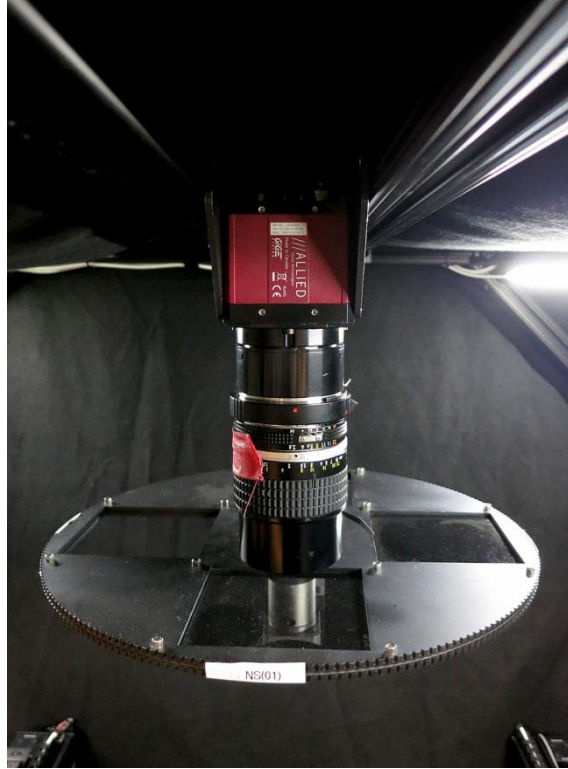


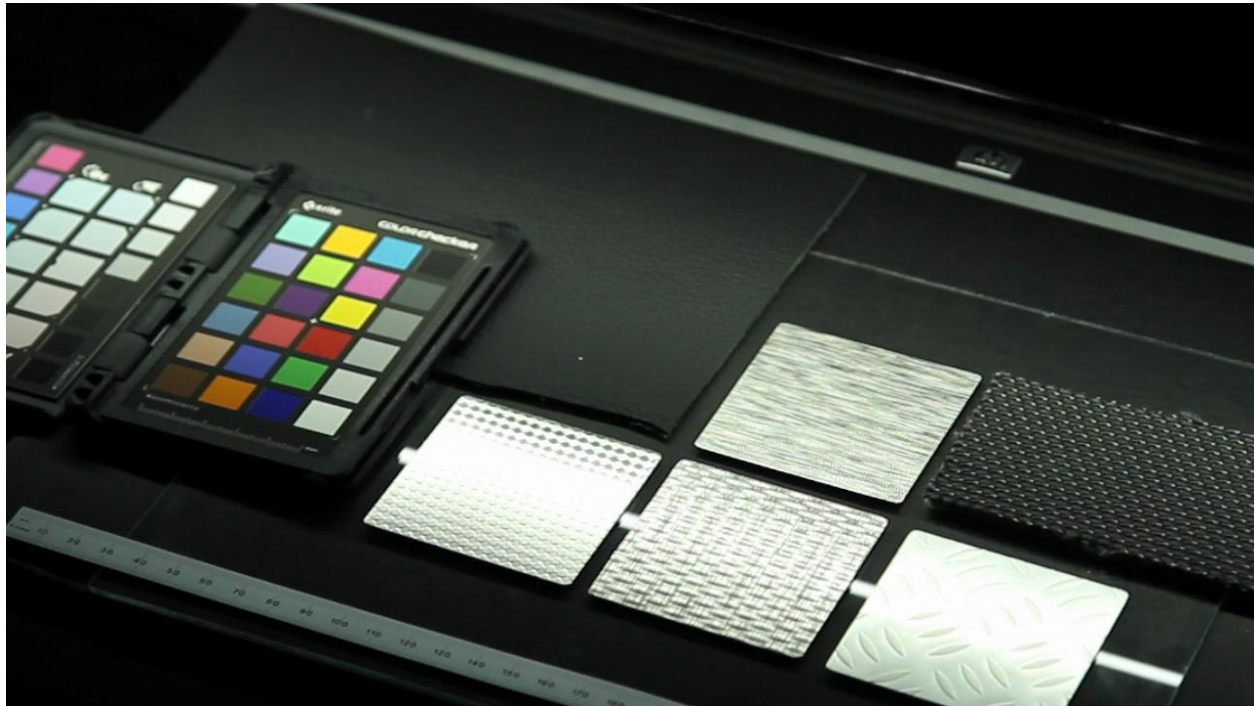
Improved Linear Light Source Scanner in operation



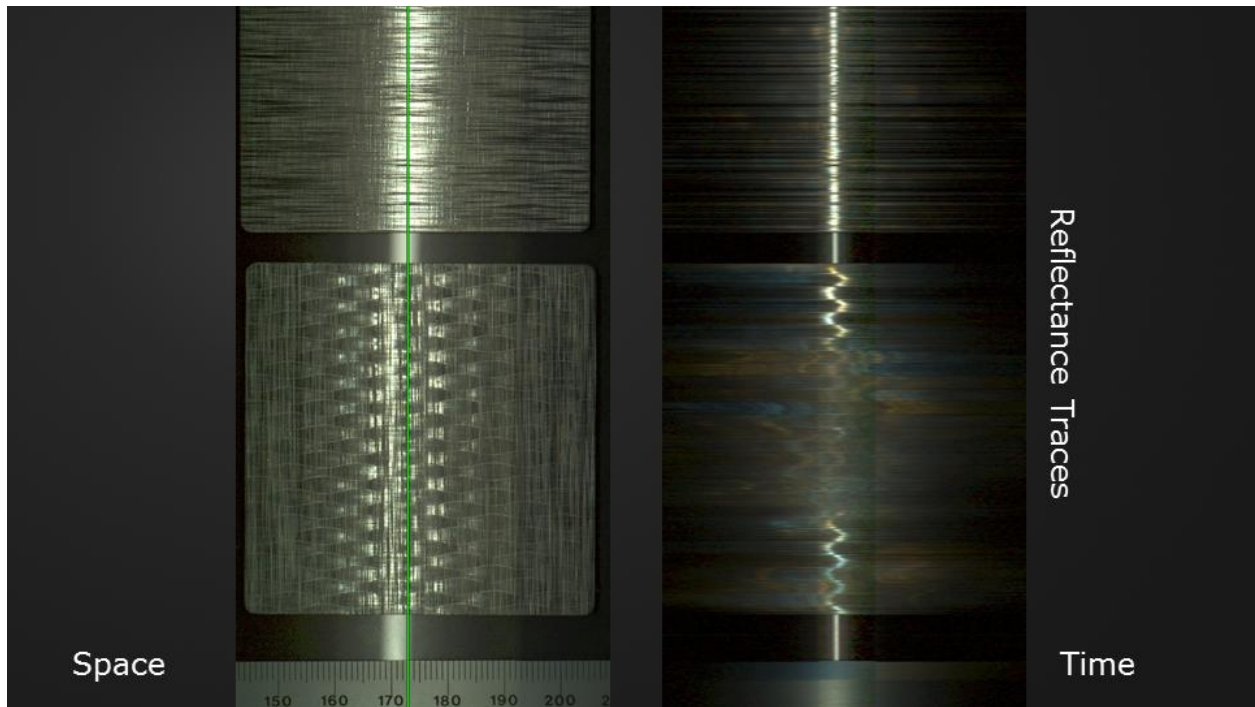
Dark leather material in scanner, with X-Rite ColorChecker™ calibration chart



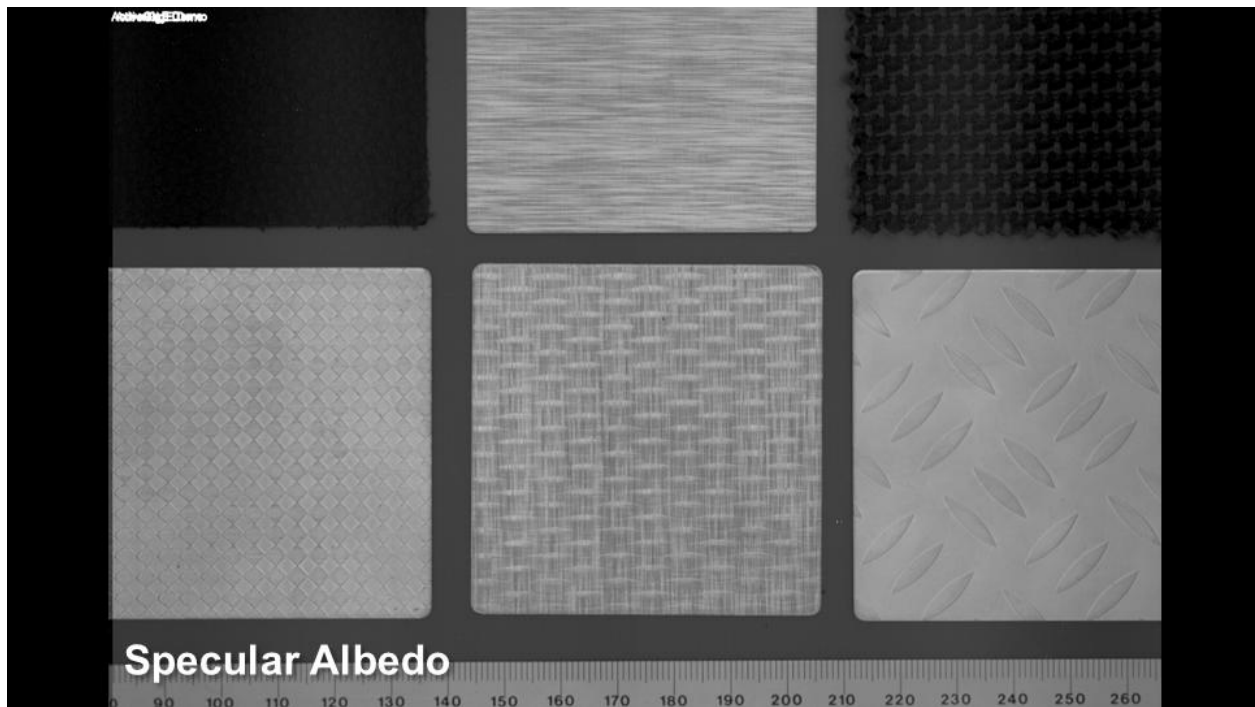
Camera with Polarizer Filter Wheel



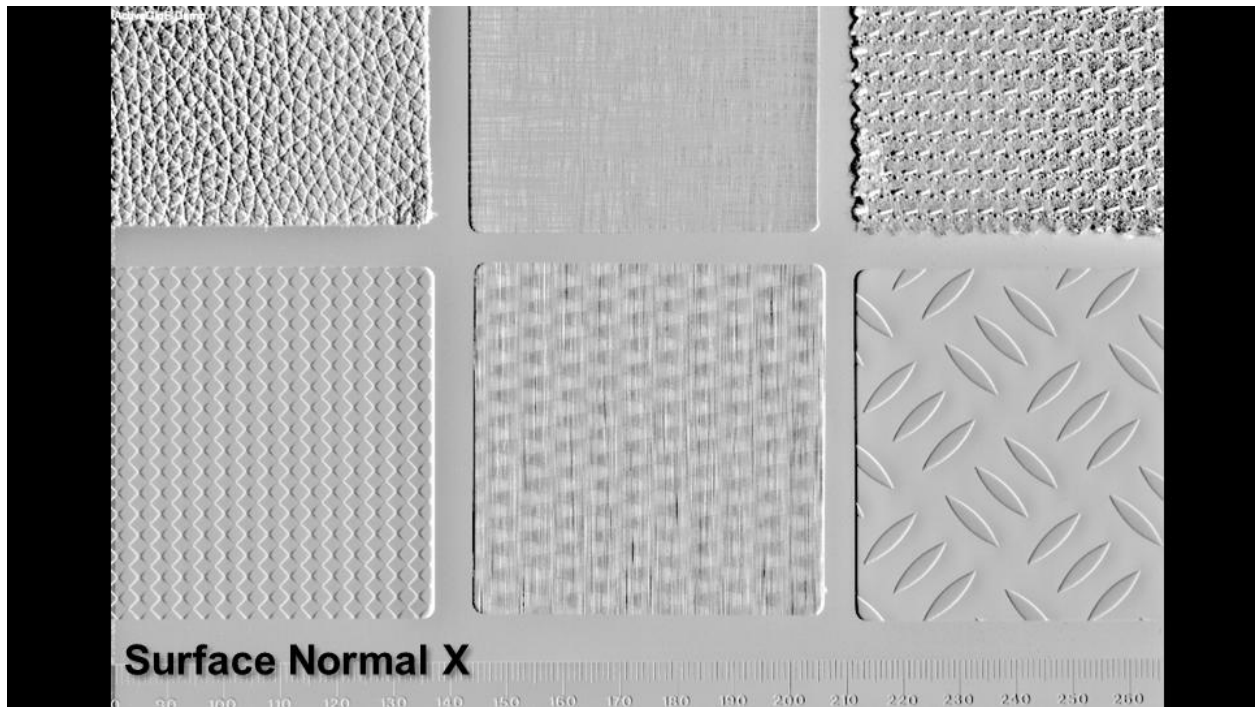
Metal materials in scanner; the reflection of a direct linear light source intersects three of the samples.



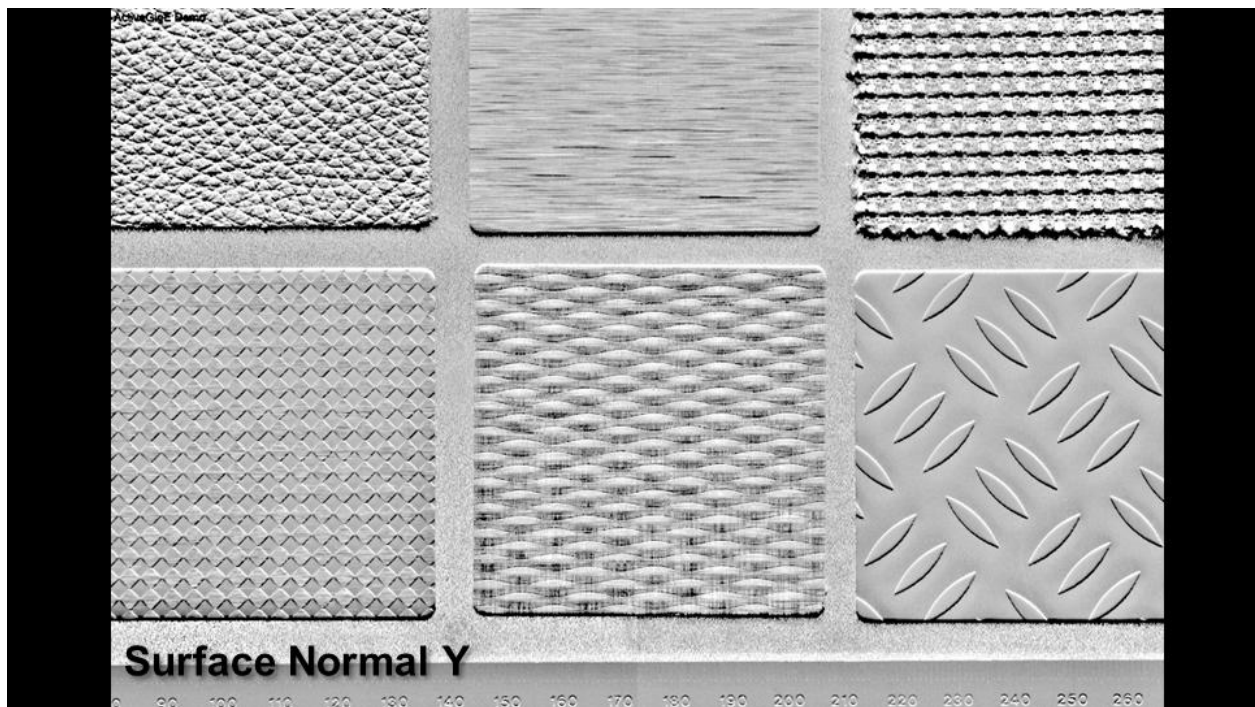
(Left) Material samples seen from above by capture camera, illuminated by the “virtual” LLS directly above.
 (Right) Reflectance traces for the sample points indicated by the green line in the left image. The integral (sum), centroid (mean), and standard deviation of the traces yield estimates of albedo, normal, and roughness.



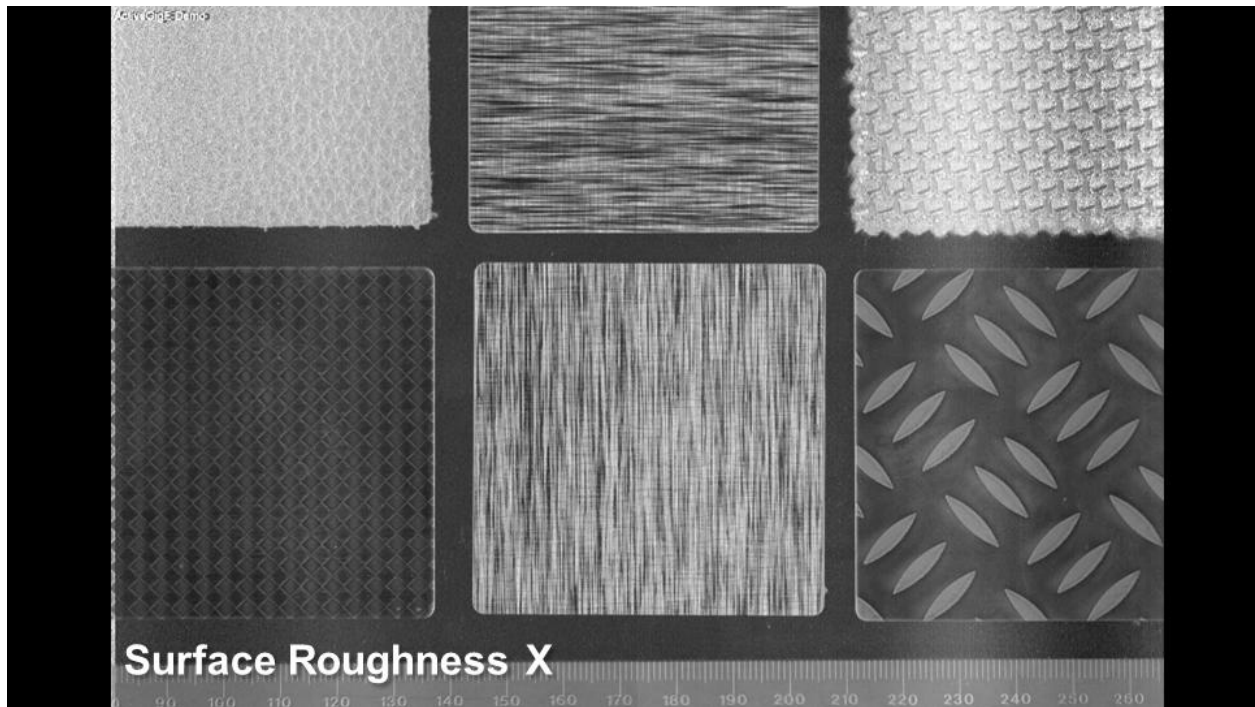
Specular albedo parameter map for the metal samples, derived from the integral of the horizontal and vertical reflectance traces.



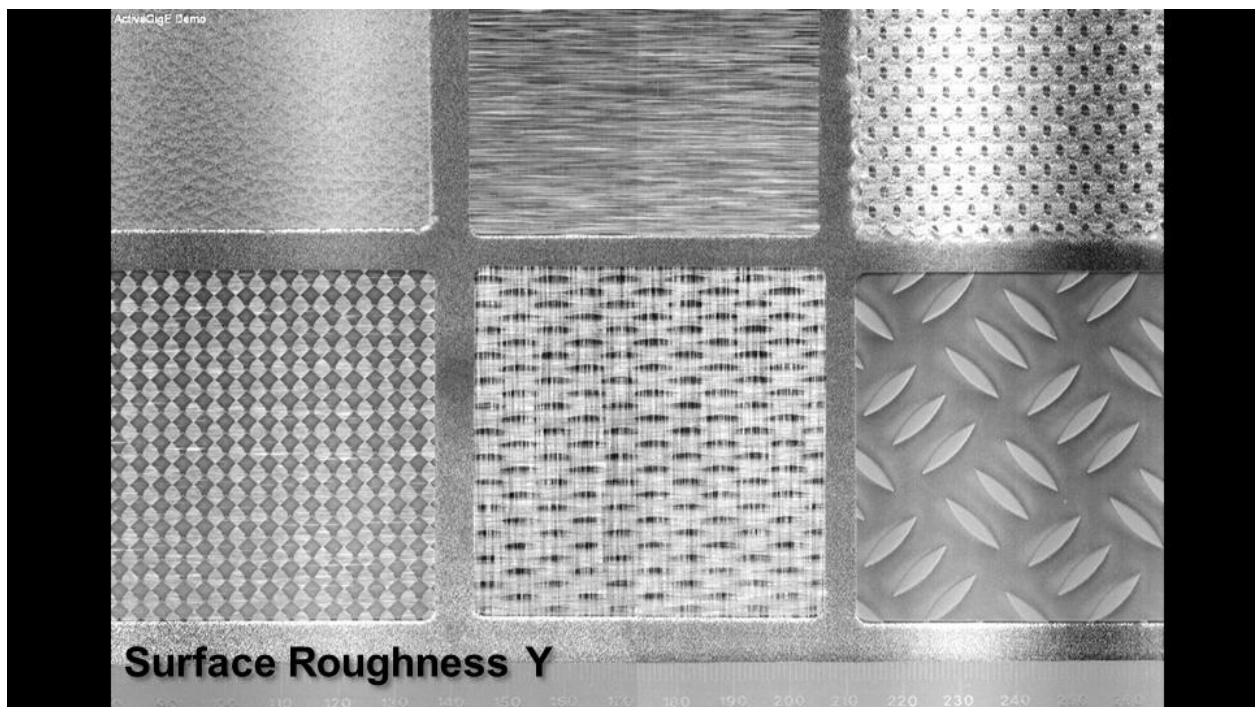
X-component of the recovered surface normal map, derived from the mean of the horizontal reflectance traces.



X-component of the recovered surface normal map, derived from the mean of the vertical reflectance traces.



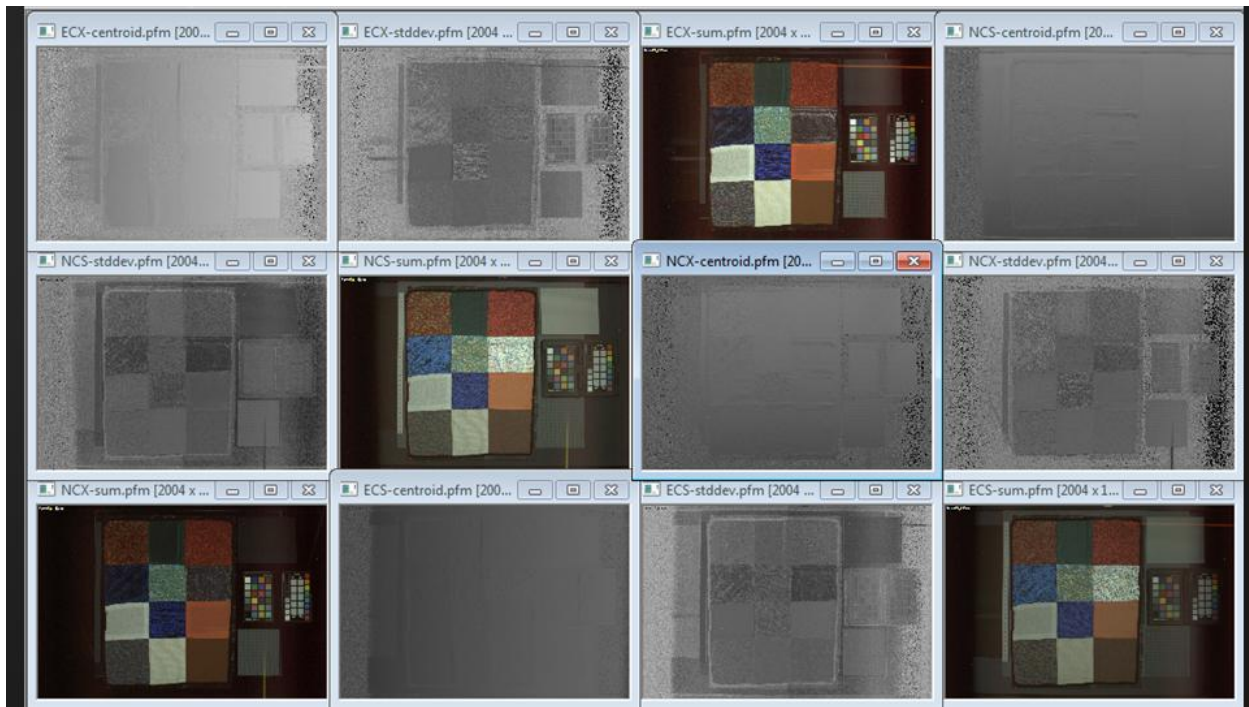
X-component of the recovered anisotropic specular roughness map, derived from the standard deviation of the horizontal reflectance traces.



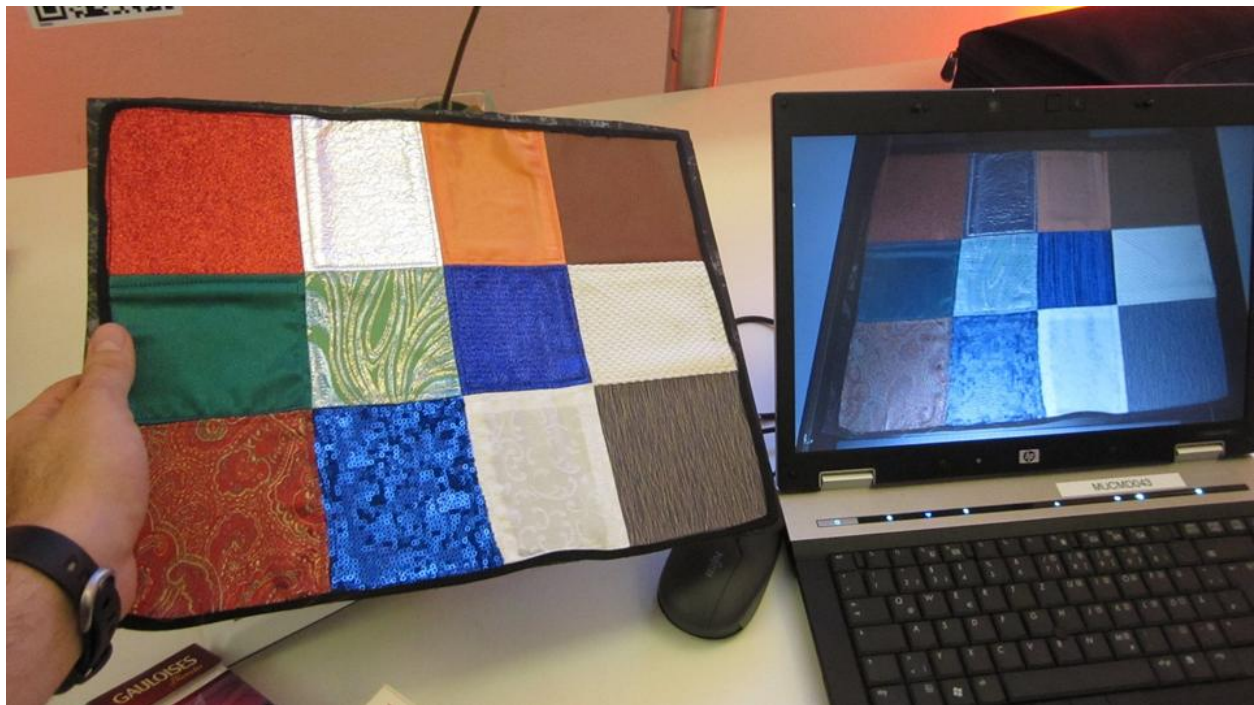
Y-component of the recovered anisotropic specular roughness map, derived from the standard deviation of the vertical reflectance traces. Note the extreme variations from the X-component of roughness for the middle and left samples due to anisotropic surface brushing.



Real-time rendering of part of a virtual car interior using the measured materials.



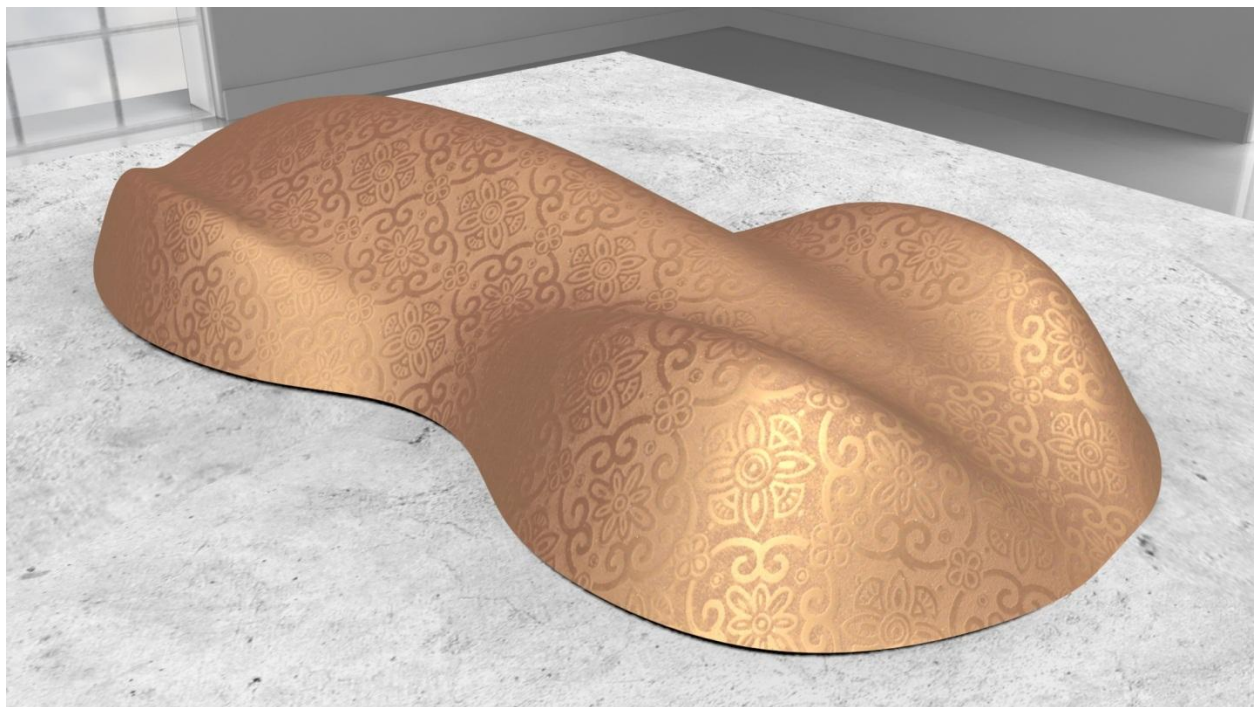
Recovered diffuse and specular maps for a patchwork quilt with highly varying reflectance



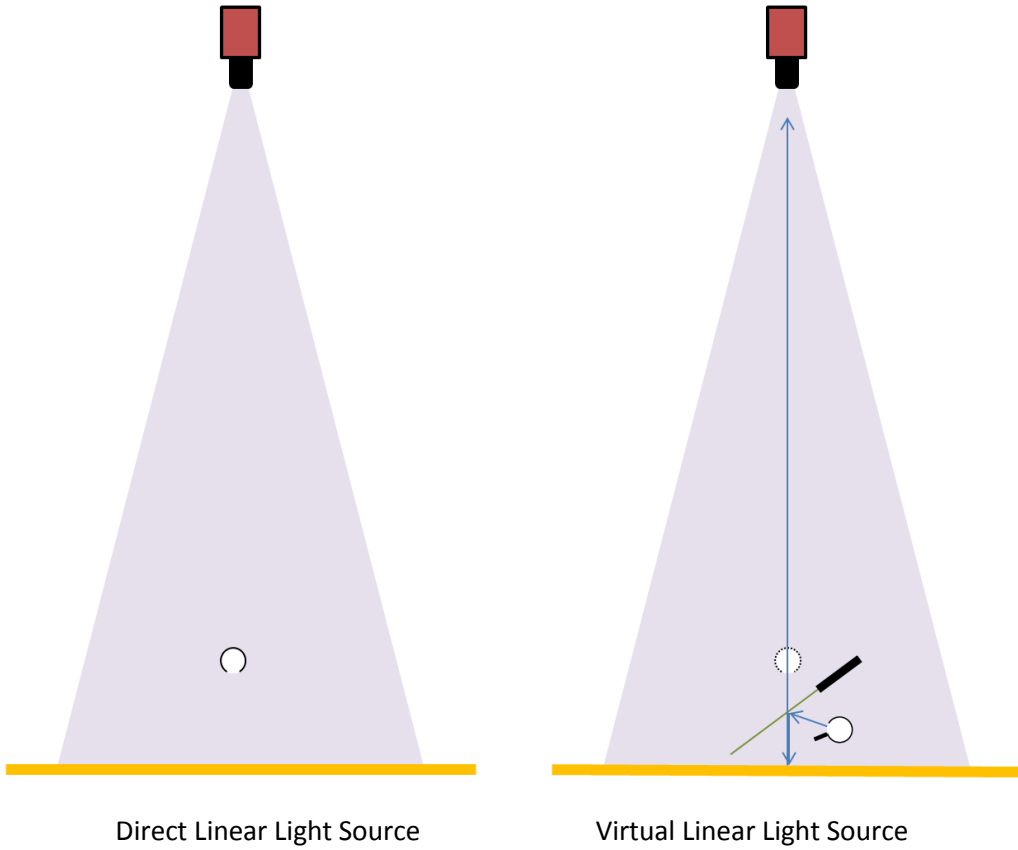
Real patchwork quilt seen next to virtual, real-time, relightable quilt model from the scanner



Another set of materials in the scanner Including (under the ColorChecker chart) a Flower-Gold material with spatially varying specular roughness.



Real-time rendering of a virtual object with the scanned (and color-corrected) “Flower-Gold” material.



Optical paths for the Direct and Virtual Linear Light Sources, co-locating the two lights while each producing complimentary angular ranges of visibility.

3D Car Model Rendered with Five Different Measured Materials for the Seats







3D Car Model Rendered with Four Different Measured Materials for the Steering Wheel





3D Car Model Rendered with Five Different Measured Anisotropic Metal Materials for the Radio Control Panel





