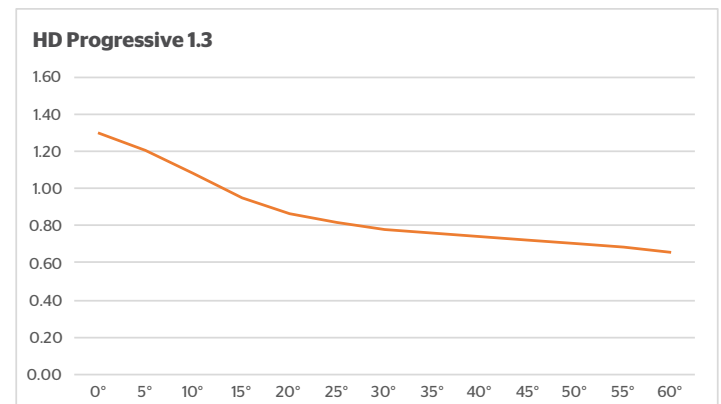
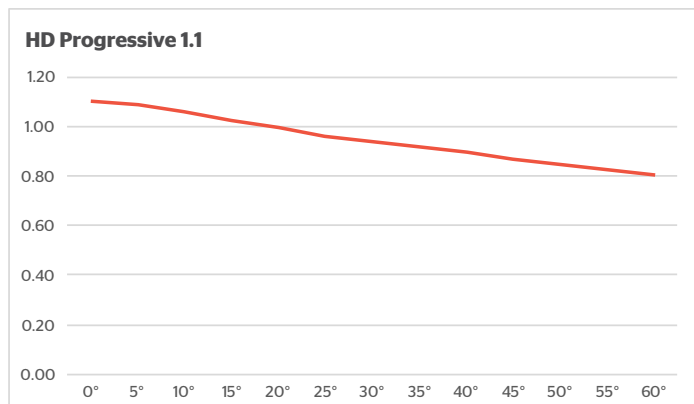
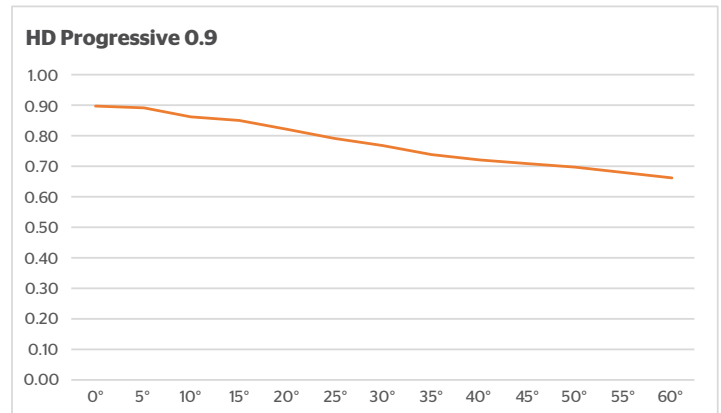
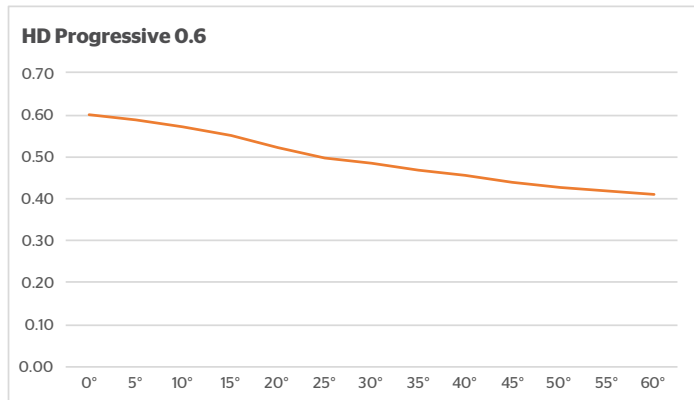


HD Progressive Spec Sheet



SURFACE	GAIN	HALF ANGLE	GLOSS (AT 75°)	COLOR SHIFT (CCT AT 60°)	CONTRAST RATIO
HD 0.6	0.60	85°	18	1%	55:1
HD 0.9	0.90	85°	21	1.5%	50:1
HD 1.1	1.10	85°	24	3%	48:1
HD 1.3	1.30	75°	27	3%	48:1





Contrast

Based on ANSI/INFOCOMM 3M-2011 issued 6/30/2011, a 1 degree spot luminance meter - Minolta Luminance Meter LS-100 was used to measure the light passing through each sample when a computer graphic generated 4 x 4 checkerboard image was projected from a 1080P Epson ProLite Pro Cinema projector. Each rectangle had an aspect ratio of approximately 1.33:1 (width:height). The total image size was 800 pixels by 600 pixels; 8" wide and 6" tall when projected on the sample. The projector, displayed image and light meter were axially aligned with the sample midway between and 28" from both the image source and the luminance meter. The projector was warmed up at least 30 minutes before readings were taken. Measurements were made in a darkened room with ambient lux < 1. The projector's full white output was measured between 2000 and 2500 lux and full black image was between 3 and 5 lux. Readings were taken from the center of each rectangle by pivoting and rotating the meter at a fixed stationary point. Contrast ratio was computed as: $CR = \text{White Average} / \text{Black Average}$, where White Average = / 8, and Black Average = / 8



Gloss

Surface gloss is the reflection measured using a BYK Microgloss 75° gloss meter.



Color Shift

A front projection sample was illuminated with a 6500K full white image which was 3600 - 4000 Lux incident brightness at the center. Proper axial alignment between the projector, sample, and meter was assumed. The center point of the sample was measured using a spectrophotometer from 18" away to determine the color temperature (CCT, K) of the coating both on-axis and off-axis at 60°. A ratio of the two readings represents the percent shift in color temperature. $\text{Color Shift} = 1 - \text{CCT}_{60^\circ} / \text{CCT}_{0^\circ}$



Gain /Half Angle

Gain was determined by comparing the luminance of a front-projected sample to the luminance of a white lambertian reflectance standard (ie. Magnesium Carbonate). Minimal ambient lighting and proper axial alignment between the diffuse light source, sample (or standard), and luminance meter were assumed. The distance between the meter and sample and between the light source and sample should be held constant for optimal accuracy. Half Angle is the off-axis viewing angle at which the measured brightness of the sample's center point is 50% of the peak on-axis reading.



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