

Supplementary Figure 1. Percent correct obtained by the SVM-based computational observer plotted against illumination change  $\Delta E$  in the blue direction, for one 1.1 °x 1.1° patch for Modeled Experiment 1 with a noise factor of 4x. Results are plotted for the full 19258-dimensional AB/BA training/test vectors and for various choices of PCA-reduced dimensionality as indicated in the legend. Percent correct for each point show was computed using 10-fold cross-validation on data sets consisting of 1000 concatenated response vectors, 500 AB and 500 BA (see main text). For each fold, instances were used for training and 100 for testing, The plotted points represent the mean cross-validated performance, with error bars showing +/- 1 SEM.