```
% Linear calibration of ASUS258 - located in DDPI-mk2 room.
% NVIDIA parameters determined from previous calibration on same
% model in DPI room.
% Data collected by JI/RL on June 25, 2021. Minolta CS 100 was placed
 0.85 m
% from monitor, handheld.
% Monitor settings: Contrast 0, Brightness 0.
% NVIDIA color corrections: RGB - 2.10, 2.17, 2.58, Contrast 0,
 Brightness 0.
% ---- NVIDIA opened and set AFTER eyeris is powered on. ----
% TO DO: Refine linearization when serial port support is available in
% EyeRIS.

pixel = [0:30:240, 255];
lum = [....
    .10, .10, .11;... % 0
    4.10, 4.08, 4.17;... %30
    6.84, 7.01, 6.87;... % 60
    9.78, 9.59, 9.76;... %90
    12.4, 12.1, 12.5;... % 120
    15.6, 15.5, 15.2;... % 150
    17.9, 17.8, 18.1;... % 180
    20.3, 20.8, 20.7;... % 210
    23.1, 23.0, 23.3;... % 240
    25.1, 25.0, 25.0;... % 255
    ];

red = [...
    .13, .11, .12;... % 0
    .84, .83, .87;... % 30
    1.40, 1.46, 1.44;... % 60
    2.00, 2.03, 2.05;... % 90
    2.63, 2.70, 2.54;... % 120
    3.13, 3.18, 3.11;... % 150
    3.66, 3.57, 3.62;... % 180
    4.14, 4.10, 4.07;... % 210
    4.71, 4.79, 4.63;... % 240
    4.88, 5.06, 4.98;... % 255
    ];

green = [...
    .11, .11, .13;... % 0
    2.75, 2.63, 2.69;... % 30
    4.52, 4.55, 4.58;... % 60
    6.51, 6.44, 6.52;... % 90
    8.28, 8.14, 8.10;... % 120
    9.87, 9.77, 9.98;... % 150
    11.7, 11.8, 11.7;... % 180
    13.7, 13.6, 13.7;... % 210
    15.3, 15.4, 15.3;... % 240
    16.4, 16.4, 16.5;... % 255
    ];
```

```matlab
blue = [...
    .11, .11, .10;... % 0
    .38, .39, .37;... % 30
    .54, .56, .57;... % 60
    .69, .70, .72;... % 90
    .80, .82, .82;... % 120
    .97, .97, .94;... % 150
    1.09, 1.12, 1.11;... % 180
    1.21, 1.24, 1.23;... % 210
    1.35, 1.37, 1.35;... % 240
    1.40, 1.43, 1.44;... % 255
    ];

data = {lum, red, green, blue};
cols = 'krgb';

slopes = nan(size(data));

figure(1); clf; hold on;
for ii = 1:length(data)

    m = mean(data{ii}, 2);
    s = std(data{ii}, [], 2);

    % force intercept to go through our measured 0
    lm = fitlm(pixel, m - m(1), 'y~x1-1');
    slope = lm.Coefficients{1, 1};
    b = m(1);


    % free intercept parameter
%    lm = fitlm(pixel, m);
%    slope = lm.Coefficients{2, 1};
%    b = lm.Coefficients{1, 1};

    slopes(ii) = slope;

    plot(pixel, pixel * slope + b, '-', 'Color', cols(ii));
    errorbar(pixel, m, s, 'o', ...
        'Color', cols(ii), 'MarkerFaceColor', cols(ii), 'CapSize',
 14);
    text(1, 25 - ii*2, sprintf('L = %1.4f g + %1.4f', slope,
 b), 'Color', cols(ii),...
        'FontSize', 14);
end
xlim([-1, 256]);
ylim([0, 28]);
grid on;

title('ASUS 258 (DDPI-MK2 room), June 25, 2021 Measurements');

xlabel('pixel gray');
ylabel('luminance (cd/m^2)');
set(gca, 'FontSize', 14);
```
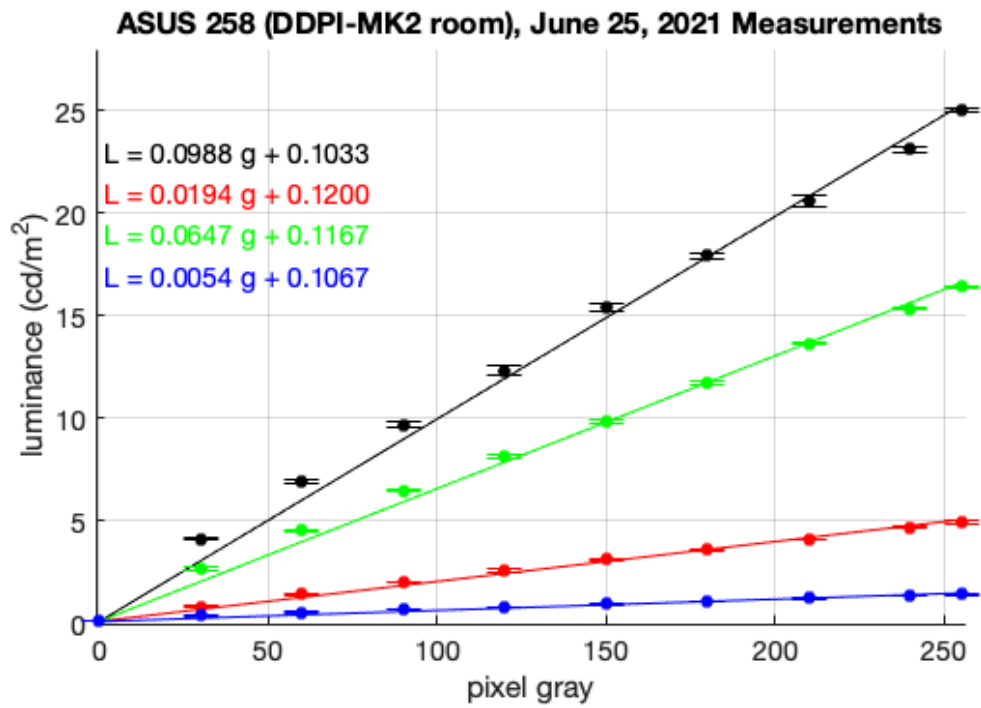
```
hold off;
```

```
fprintf('R to B: %1.2f\n', slopes(2) / slopes(4));
fprintf('G to B: %1.2f\n', slopes(3) / slopes(4));
```

R to B: 3.57
G to B: 11.90

ASUS 258 (DDPI-MK2 room), June 25, 2021 Measurements

$L = 0.0988\ g + 0.1033$
$L = 0.0194\ g + 0.1200$
$L = 0.0647\ g + 0.1167$
$L = 0.0054\ g + 0.1067$

luminance (cd/m^2)

pixel gray

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