

11/04/04

1/5

Matlab

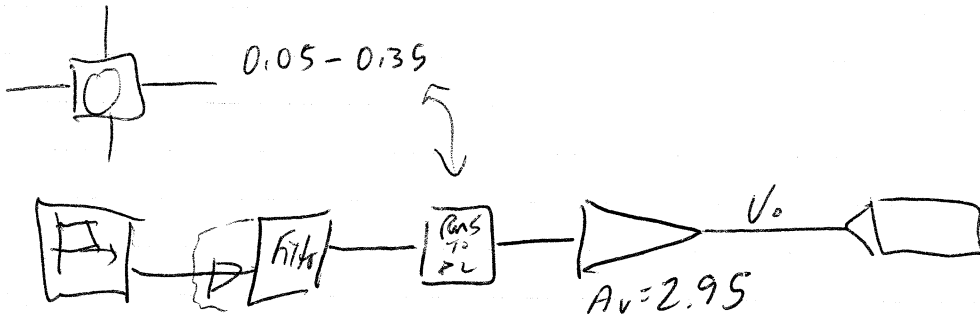
QD Ver 3d

Read QDGAQ.m → Run

ESP-UTIL

enable 1 & 2

center up laser ch 1, 2, 3, 4 all read same



0.65 0.65

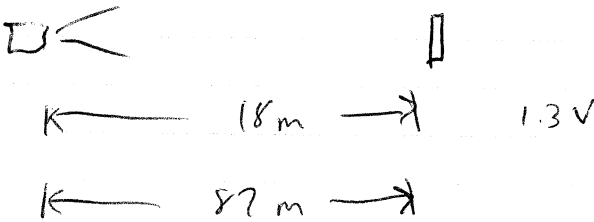
$$V_L + V_R = 0.35 \times 2.95$$

↓

1.3

should be $V_L + V_R \sim 1.0V$

use iris to adj, chans to $\sim 0.5V$



$$A = \pi r^2$$

$$A_0 = \pi \left(\frac{2.125}{2} \right)^2 = 230 \text{ mm}^2$$

(mm)
54/2

reduce radius by $\frac{18}{87} = 0.206$

$$2.125 \times 0.206 = 0.44 \text{ in}$$

Put ~0.5" iris in front of det
now all chans are ~0.040V

Now, $V_o = 0.08V$

we want 1.00V

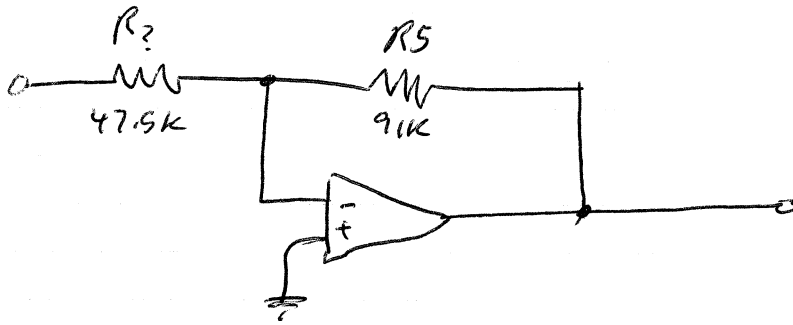
$A_v = A_{v0} * 12.5$

From ckt $\rightarrow A_v = -\frac{91}{47.5} = -1.92$

want $A_v = -1.92 * 12.5 = -23.9$

$-23.9 = \frac{R_5}{47.5k} \rightarrow R_5 = \underline{1.14M\Omega}$

-or
 $-23.9 = \frac{91k}{R_2} \rightarrow R_2 = \underline{3.8k\Omega}$



$$A_v = -\frac{91}{47.5} = -1.92$$

$$\text{we want } A_v = 12.5 \times 1.92 = -23.9$$

$$-23.9 = -\frac{R_5}{47.5} \rightarrow R_5 = 1.14 \text{ M}\Omega$$

$$-23.9 = \frac{91}{R_2} \rightarrow R_2 = 3.8 \text{ k}$$

used 3.83k

Now seeing all channels $\sim 0.42\text{V}$ when centered up.

QD CAL SETUP

Thermocouples - one on focus sleeve
 one for ^{int.} air temp of GDAE Box

Illuminator characteristics

look across TPC & TP2 w/ 2 probes, inv, add...

AC coupled \rightarrow 0.4 V P-P

DC coupled \rightarrow offset \sim 0.6 V

so

$$\boxed{\text{modulation} = 0.6 + 0.2 \sin \omega t \text{ (A)}}$$

CAL SETUP

~~Z~~ → +15.0 mm

X → -46.0 mm

← ZERO POINT

Now, open matlab & run metlabcal.m

hint - how long of sample = 40 @ 10 Hz → 4 sec