

# Control

Stepping motor

and

Displacement sensor

and

Actuators

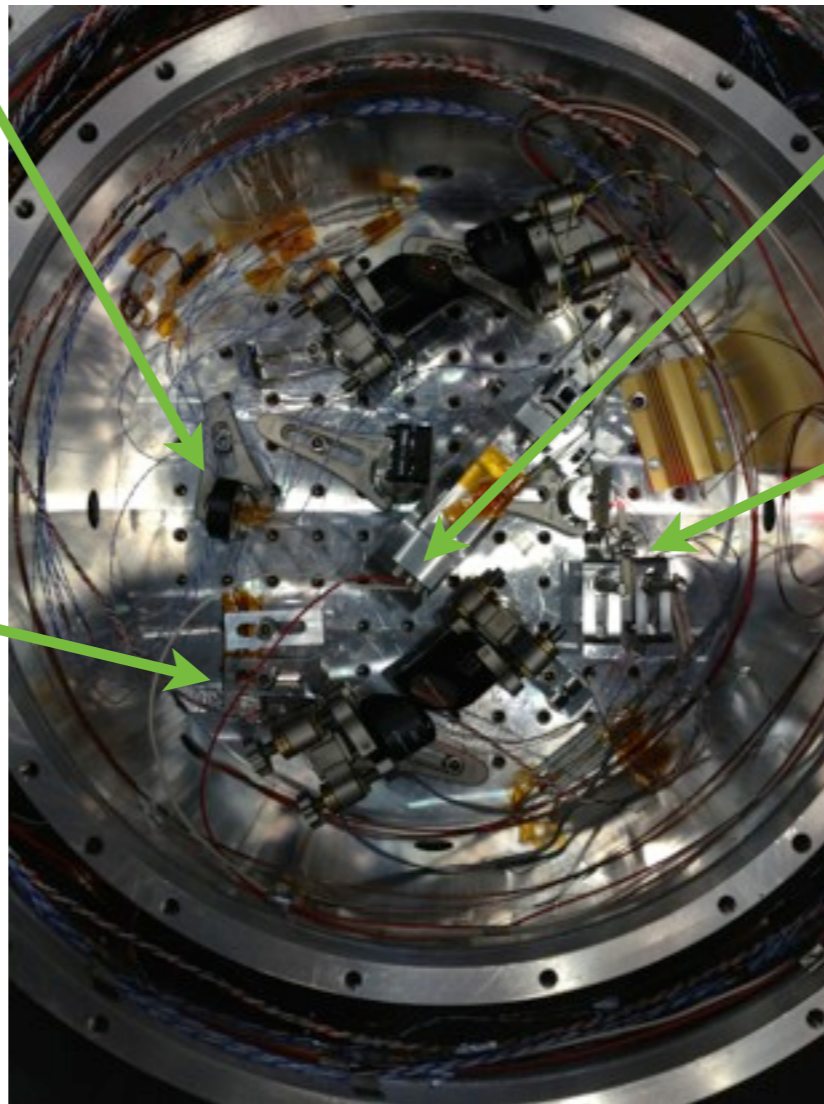
Dan Chen

2014/1/28 Cryo-payload meeting

# 4 experiments in the mid-cryostat. The chamber is open now.

Efficiency and noise  
measurement of a PD(FDG03)

Efficiency and noise measurement  
of a LD(ML925B45F)

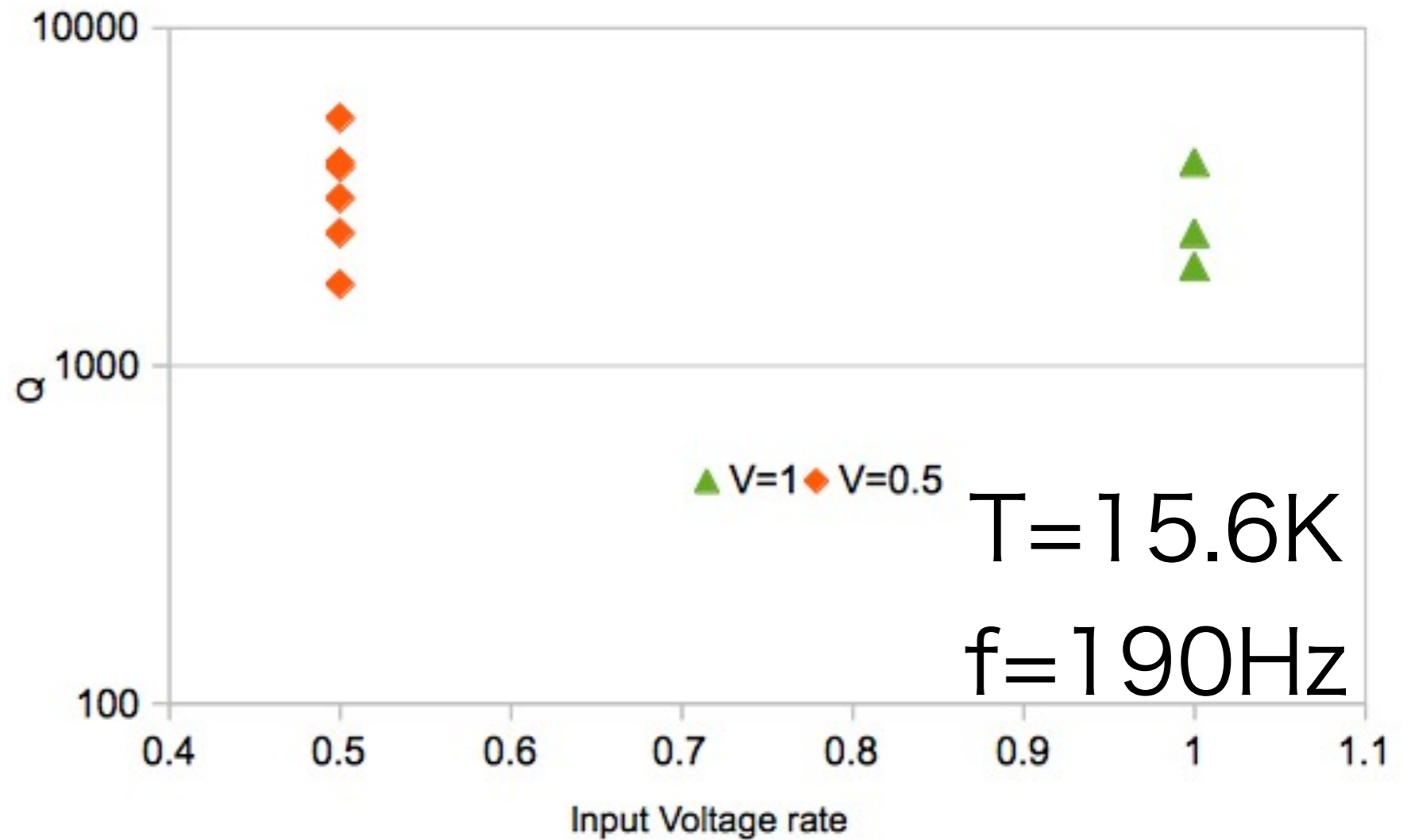
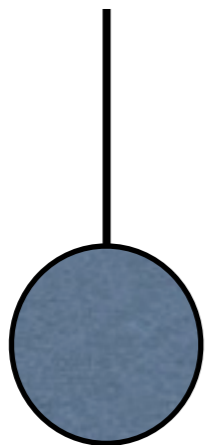


Q measurement of a W  
wire(5N,  $\phi=0.5\text{mm}$ )  
Result: Next page.

Autex motor  
Result: Does't work  
below 60K

# Q measurement

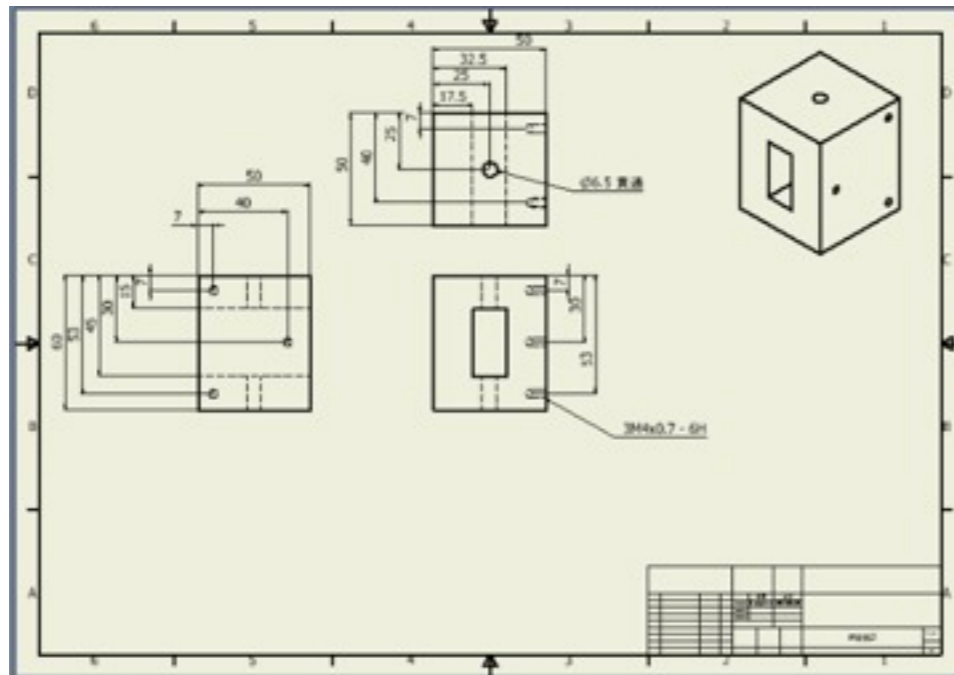
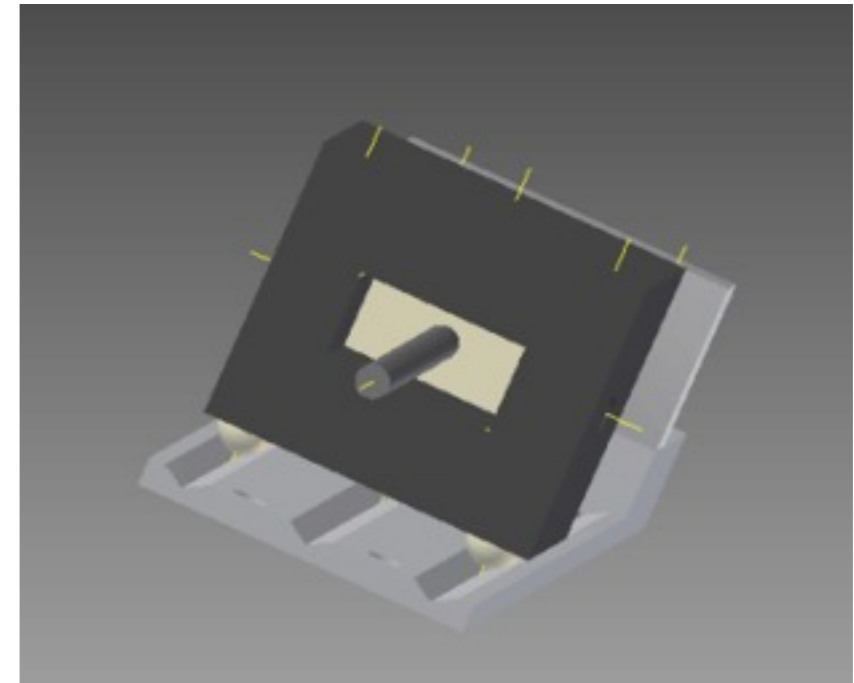
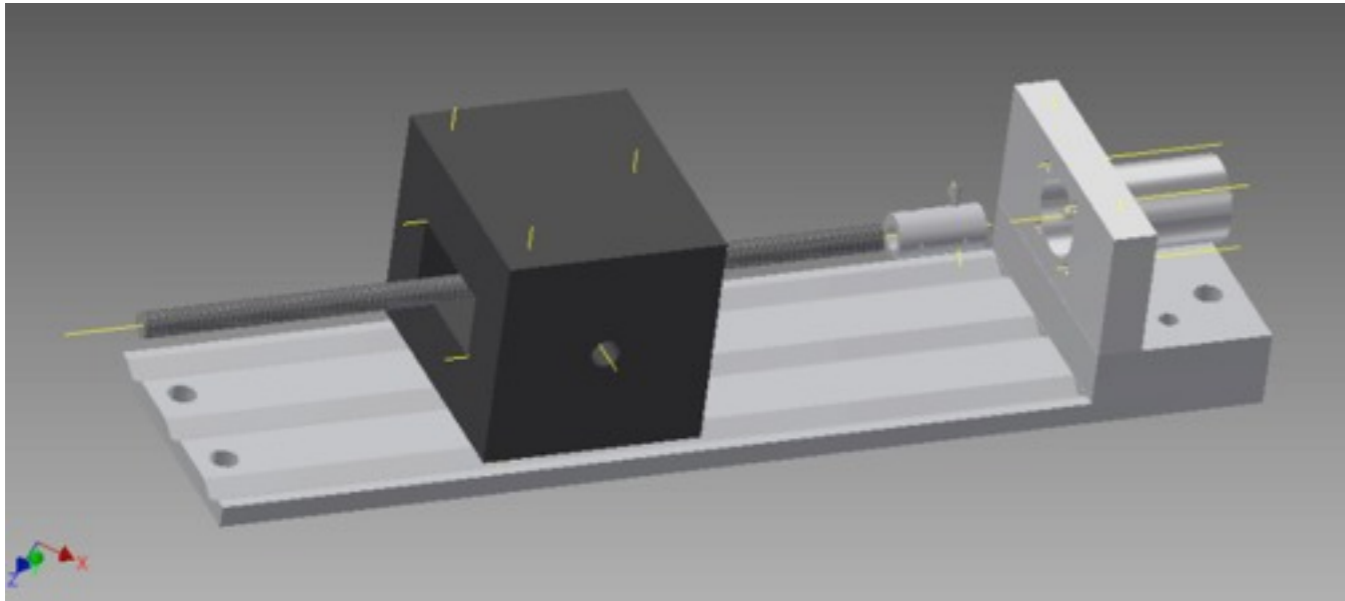
Tungsten  
5N  $\phi=0.5\text{mm}$   
 $L=10\text{cm}$   
Not annealing



$Q \sim 1000$  @  $70\text{K}$ ,  $f=190\text{Hz}$   
 $Q \sim 1700$  @  $284\text{K}$ ,  $f=200\text{Hz}$

# Mass shifter

Stepper motor will be  
delivery in the next Month.



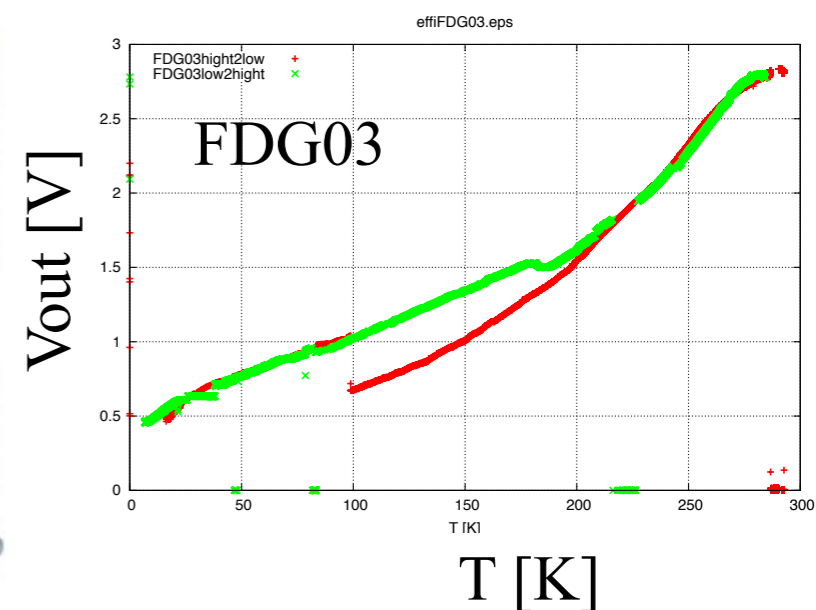
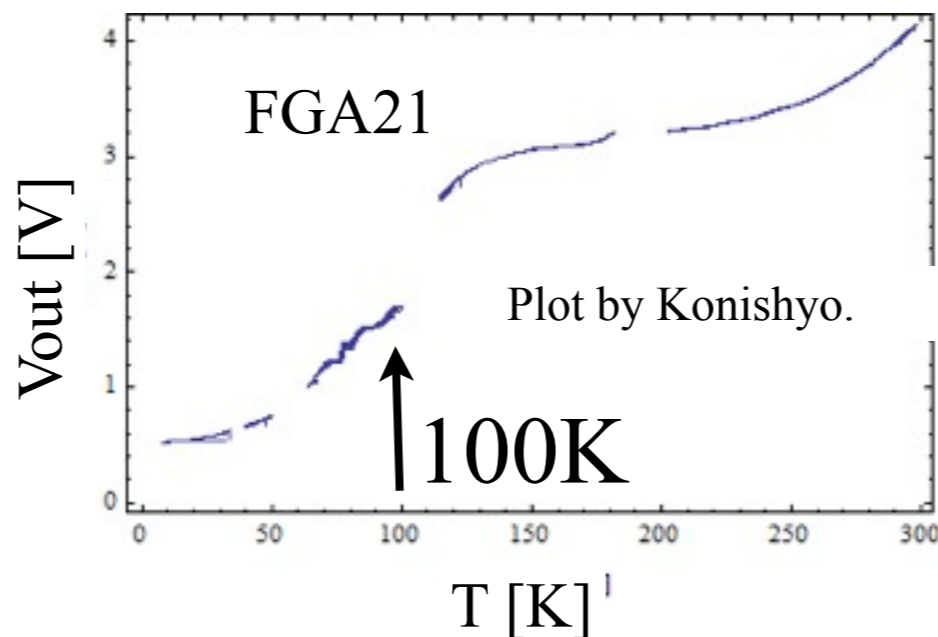
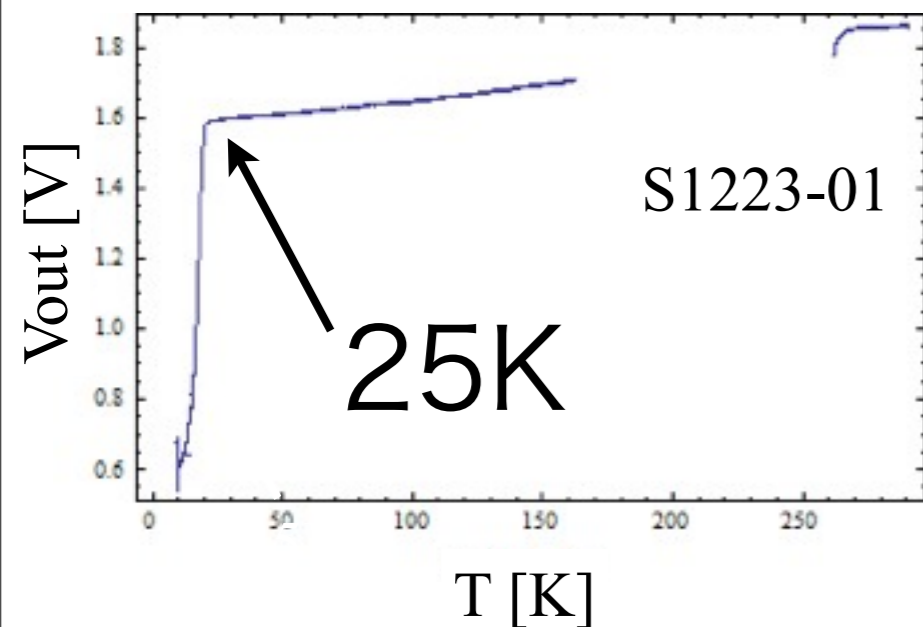
Design is finished.

(The requirement can be chaged...)

# PD

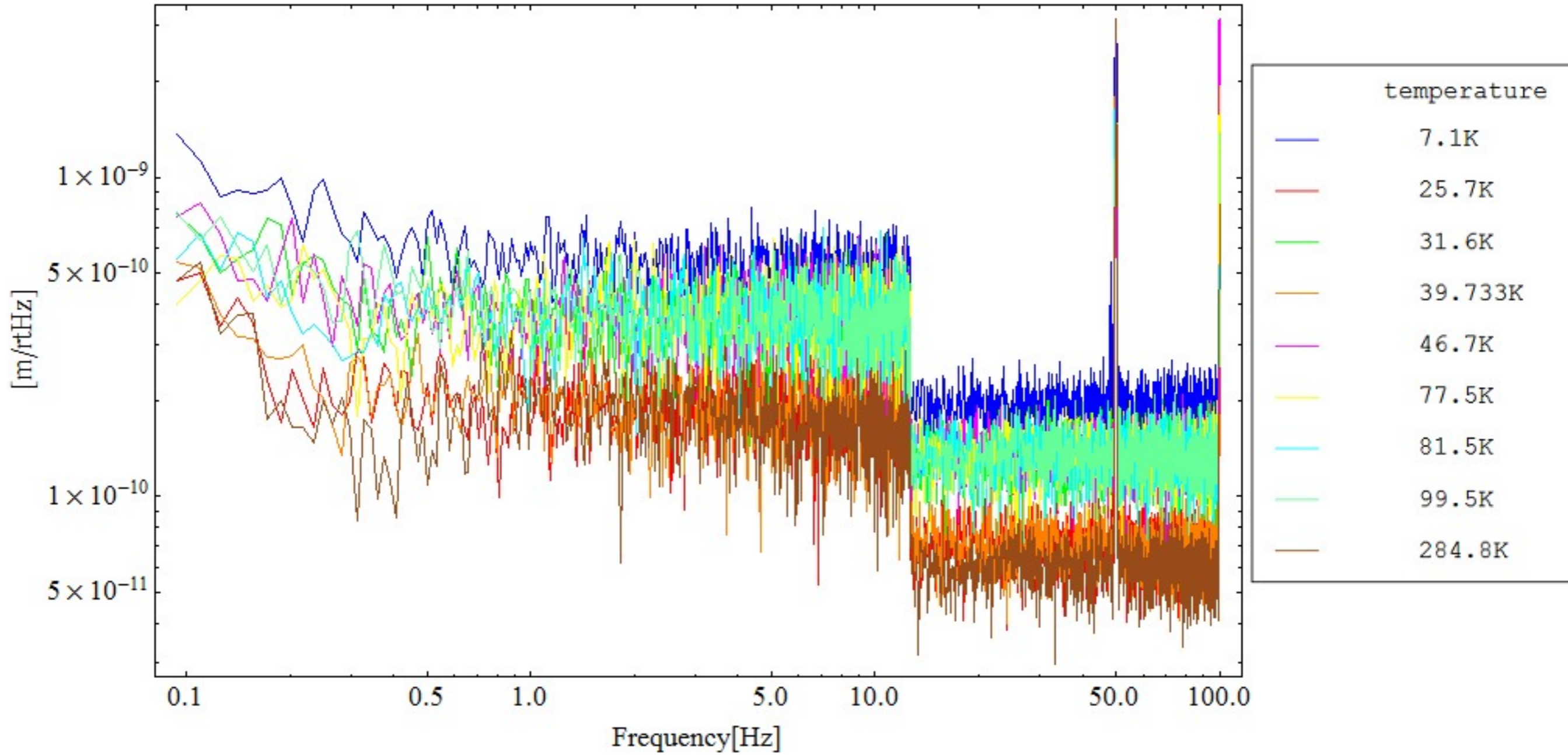
Name	Type	Peak	We have	comment	Status
S1223-01	Si PIN PD	960 nm	5	We had a cooling test. Efficiency decreases at low T (37%)	Test: done Analysis: done
G8370-01	InGaAs PIN PD	1550 nm	0	Tomaru-san said this works at low T. I asked a quotation but is was out of stock.	-
FGA21	InGaAs Pin PD	1600 nm	2	The quantum efficiency decreases at low T(15%).	Test: done Analysis: done
FDG03	Ge PD	1550 nm	2	We ordered. ThourLab said it works at low T.	Test: done Analysis: done
S3590	Si PIN PD	980 nm	2	We have 2 now.	Test: not yet Analysis: not yet

Not Yet



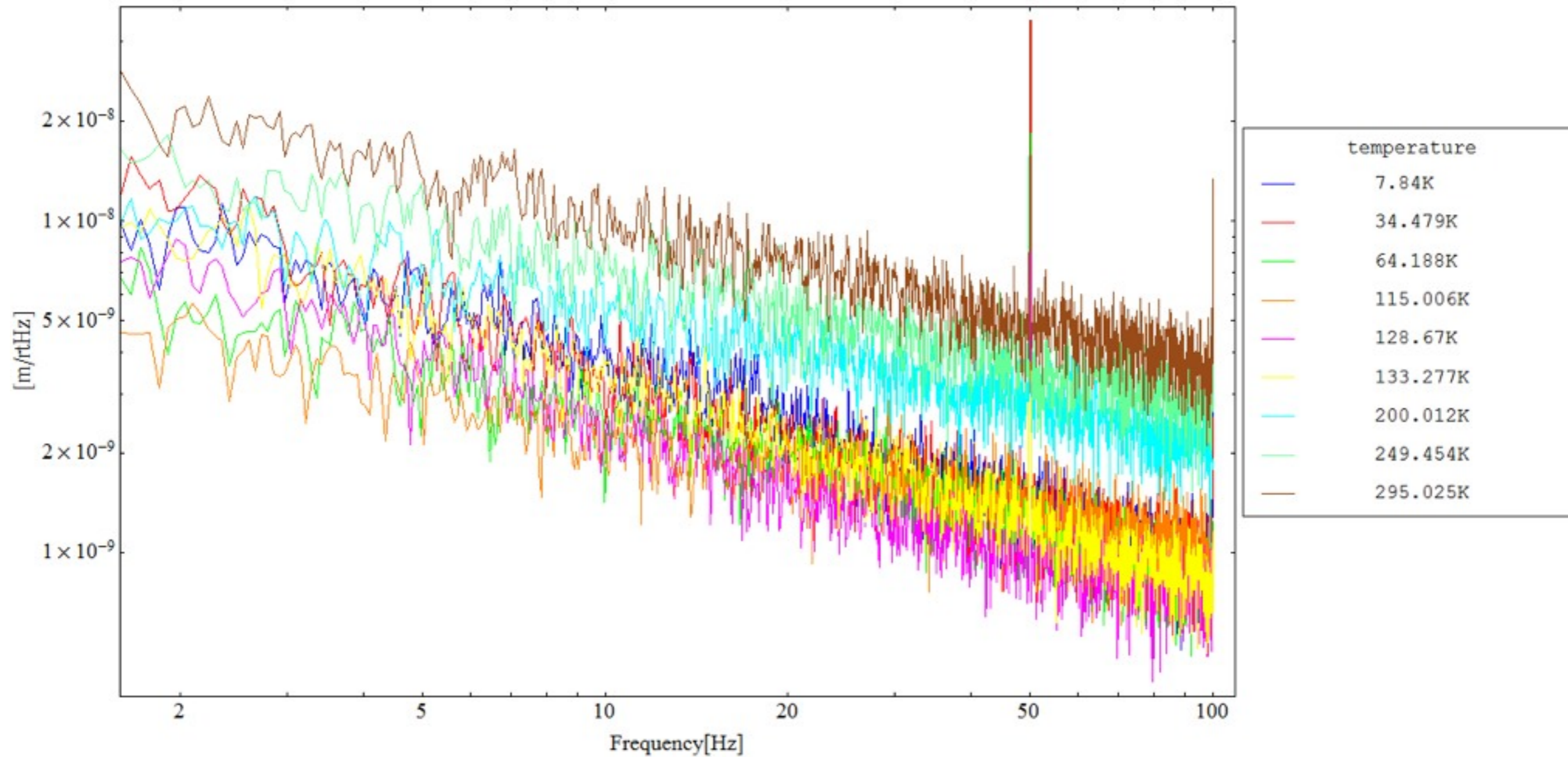
# PD noise

S1223



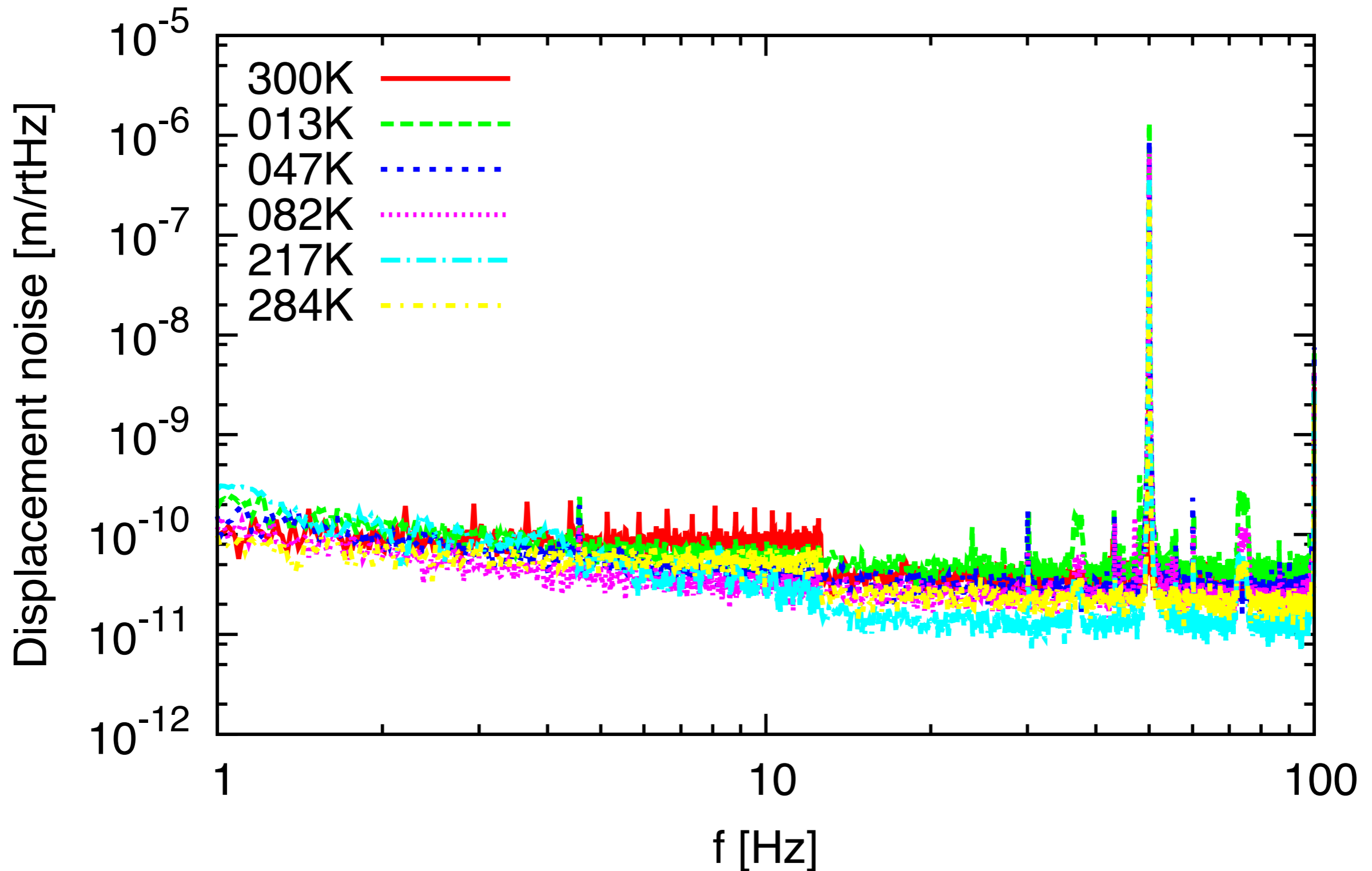
# PD noise

FGA21



# PD noise

FDG03noisenogainM.eps





# LED

Name	Type	Peak	Number we have in ICRR	comment
OP232	GaAlAs	890 nm	5	This is used in OSEM at room temperature.
L2656-03	GaAlAs	890 nm	20	Tomaru-san said this works at low T. I received.
ML925B45F	InGaAsP	1550 nm	2	Measurement: done

Not Yet

Not Yet

## Liquid nitrogen test: 77K

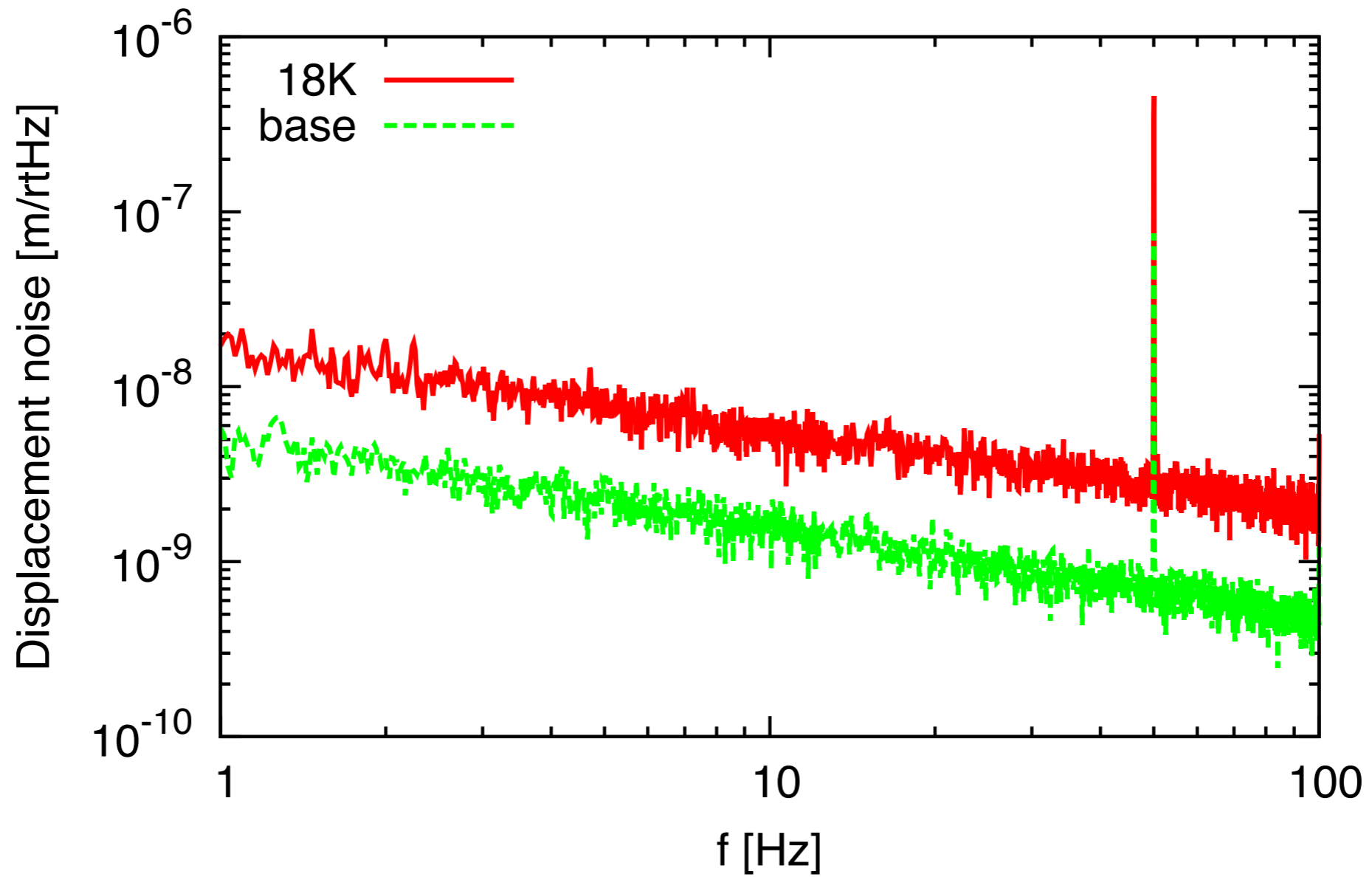
OP232	Does not work
L2656-03	Works!
ML925B45F	Works!

Detect by sensor card

# LD noise

LD = ML925B45F

ML925noisenogainM.eps



# PD, LED test at low T

We need to test 1 PD and 2 LEDs.

It takes 2 weeks at least.