

進捗報告

2014/07/11

- contents -

- (1) WLS fiber properties test pp.2-3
- (2) MPPC + EASIROC module operation pp.4-9
- (3) Fiber Sheet 製作 FLa41 pp10
- (4) 次週スケジュール pp.11

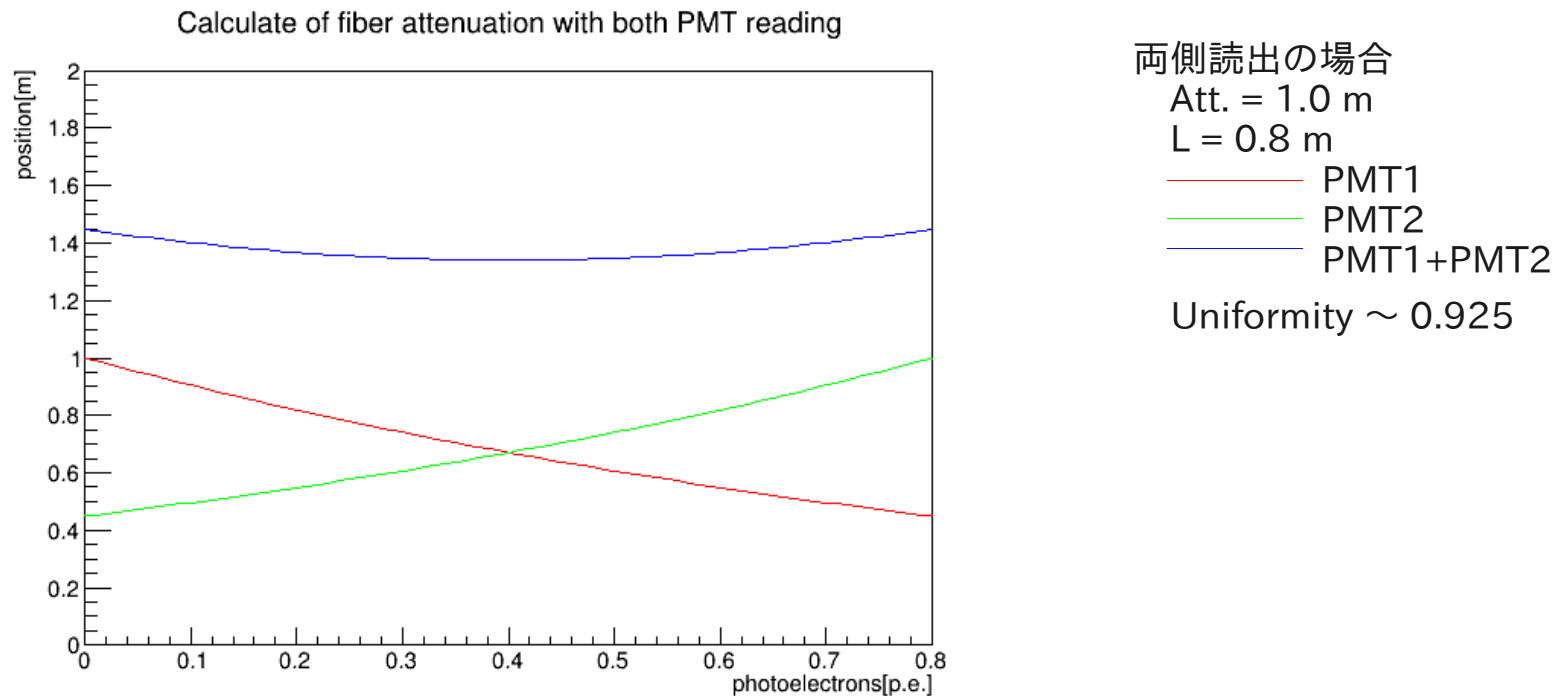
WLS fiber properties test

WLS fiber properties

Att. Length

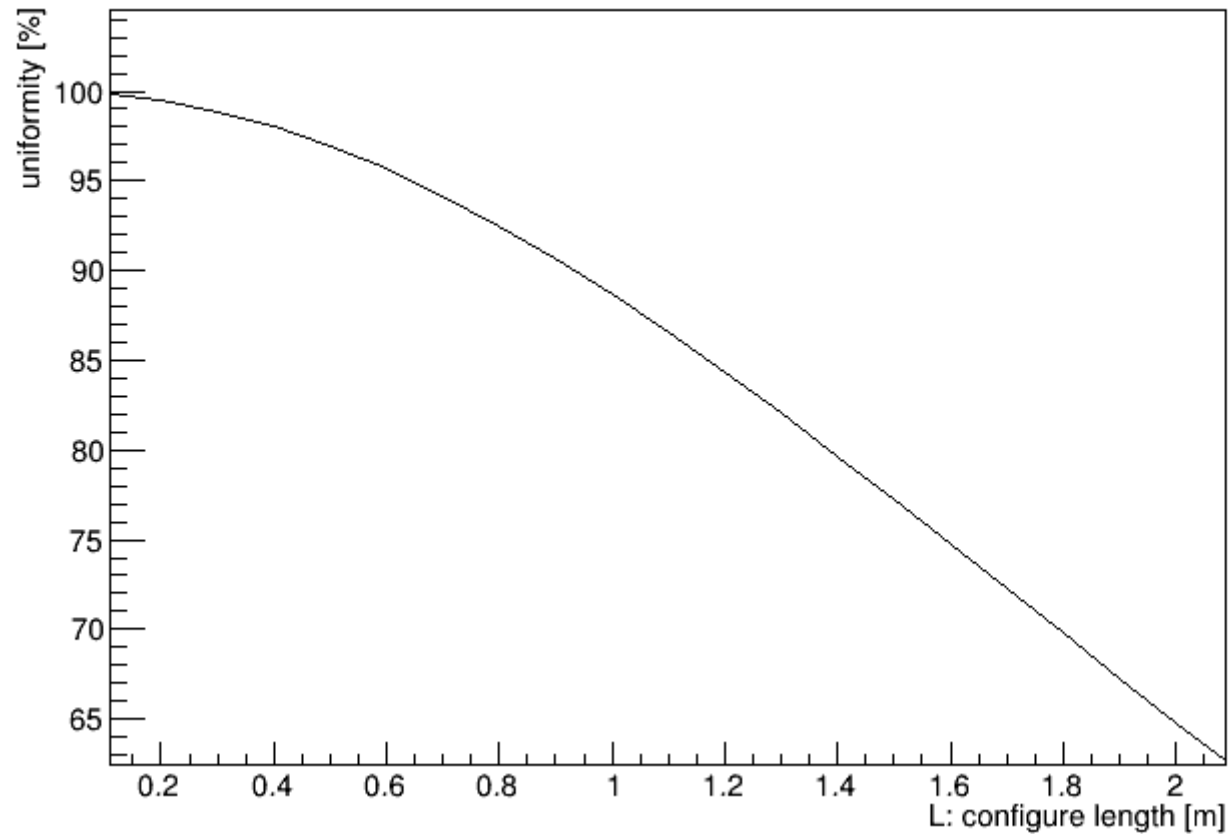
ScSF-78MJ	: 105.0 ± 35.7 cm
B-3	: 161.0 ± 122.2 cm
Y-11	: 99.6 ± 52.7 cm
O-2	: 62.0 ± 9.6 cm
R-3	: 123.7 ± 52.6 cm

Att. Length ~100 cm (With the exception of the O-2)



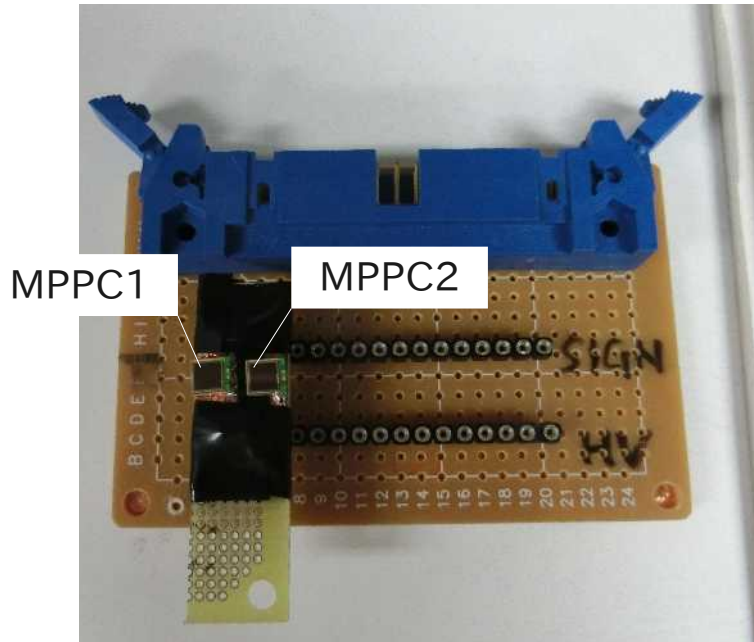
WLS fiber properties test

Calculate of uniformity



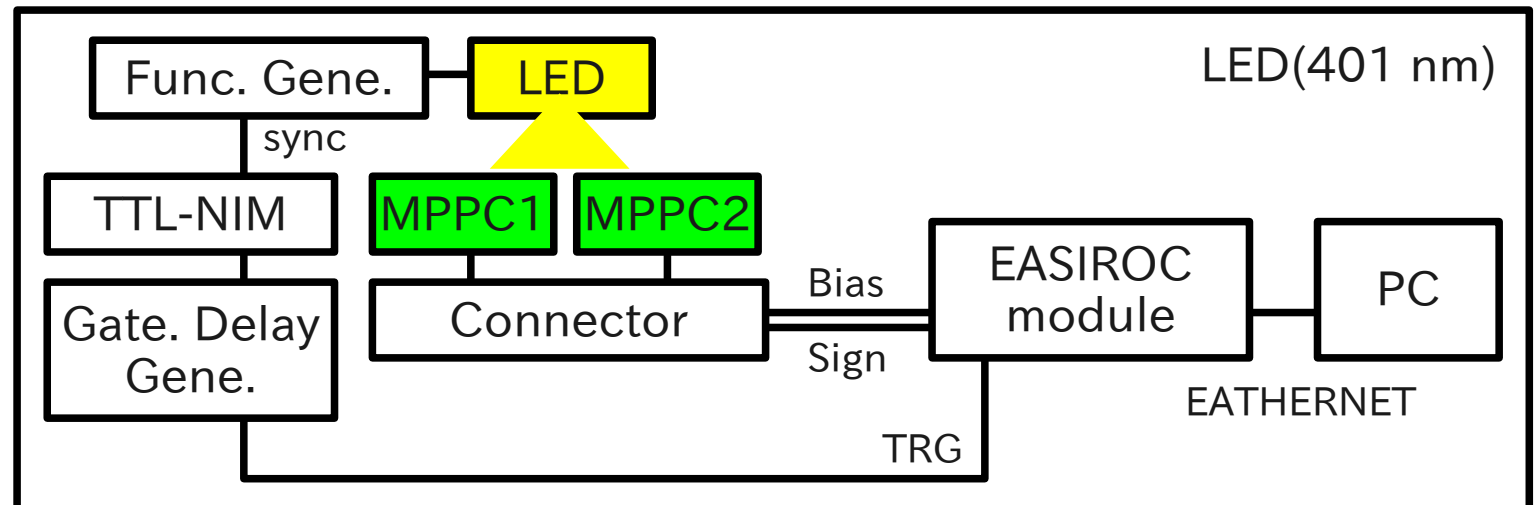
L[m]	uniformity
0.1	99.9%
0.2	99.5%
0.3	98.9%
0.4	98.0%
0.5	97.0%
0.6	95.7%
0.7	94.2%
0.8	92.5%
0.9	90.7%
1.0	88.7%
1.1	86.6%
1.2	84.4%
1.3	82.0%
1.4	79.7%
1.5	77.2%
1.6	74.8%
1.7	72.3%
1.8	69.8%
1.9	67.3%
2.0	64.8%

MPPC + EASIROC module制御 テスト

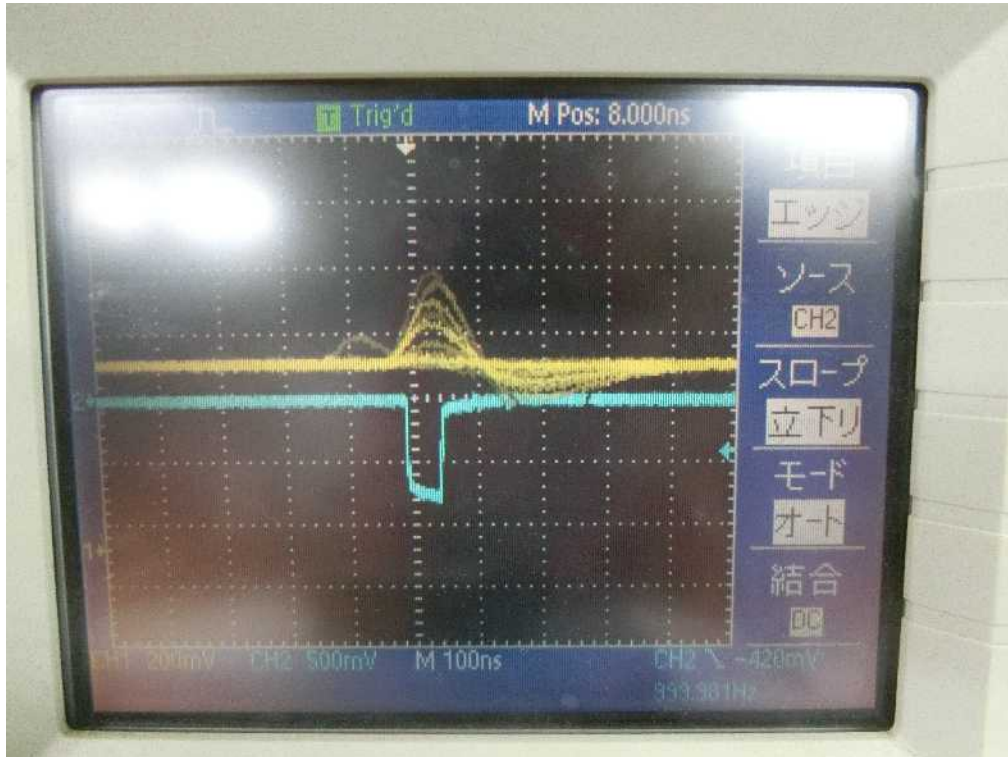


MPPC: HAMAMATSU, S12572-100P

	Serial No.	Vtop [V]	M(Gain)	Dark Count
MPPC1	112	65.98	2.81E+06	0.54M(0.5th)
MPPC2	103	66.01	2.81E+06	0.58M(0.5th)



MPPC + EASIROC module制御 テスト



Raw Signal
TRG

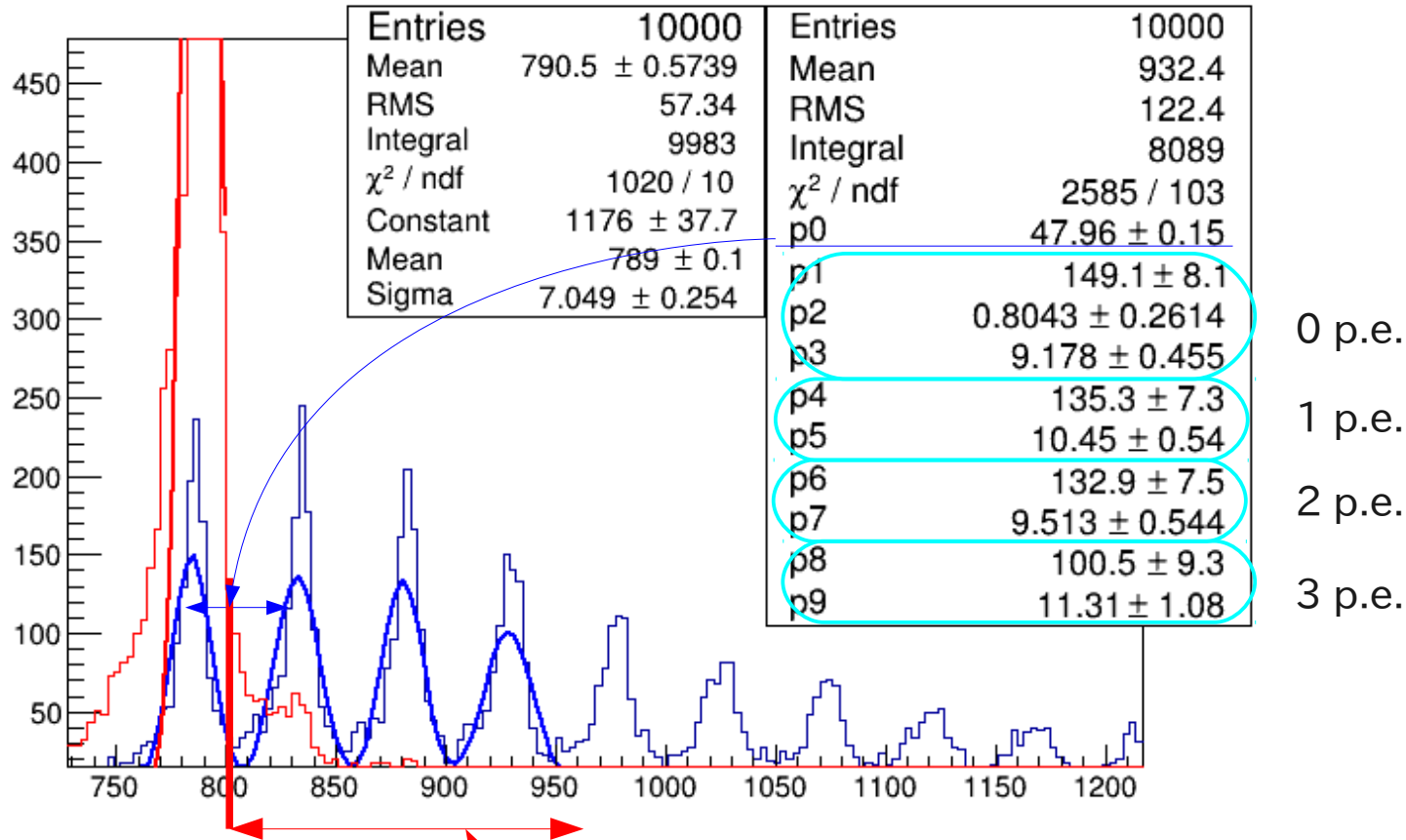


Shape Hold Signal
TRG

MPPC1, LED vs Dark event

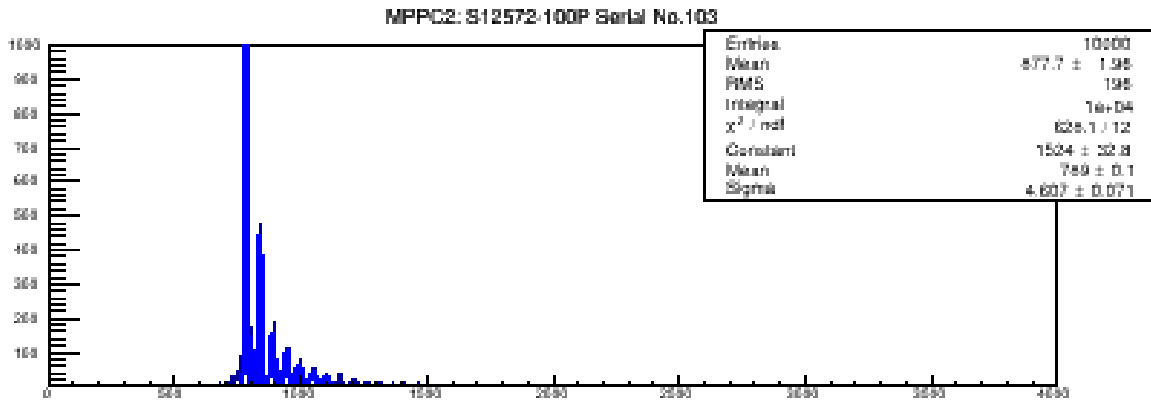
MPPC + Dark

LED + MPPC

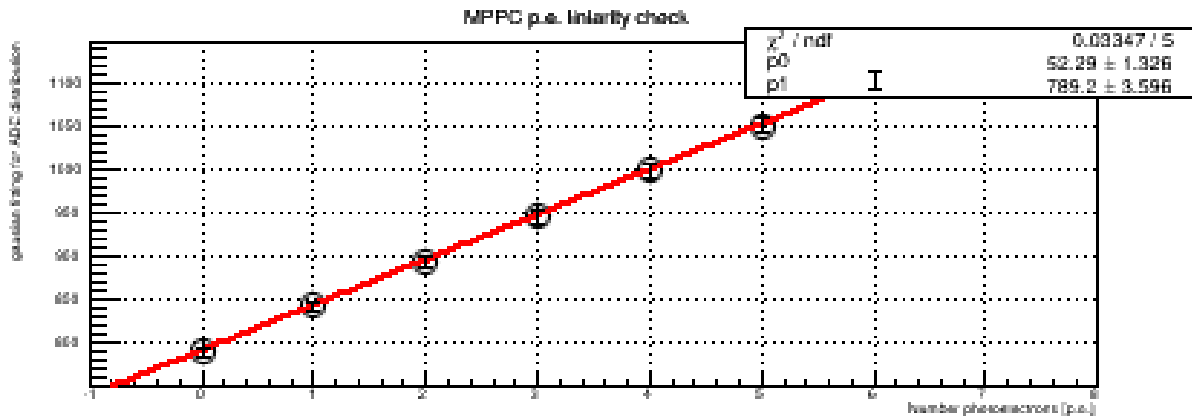


Noise Rate (0.5 threshold + TRG)
 LED 1kHz 1.0E+04 event
 Noise event: 999
 999/1e4 kHz = 0.1 kHz

MPPC p.e. linearity Check

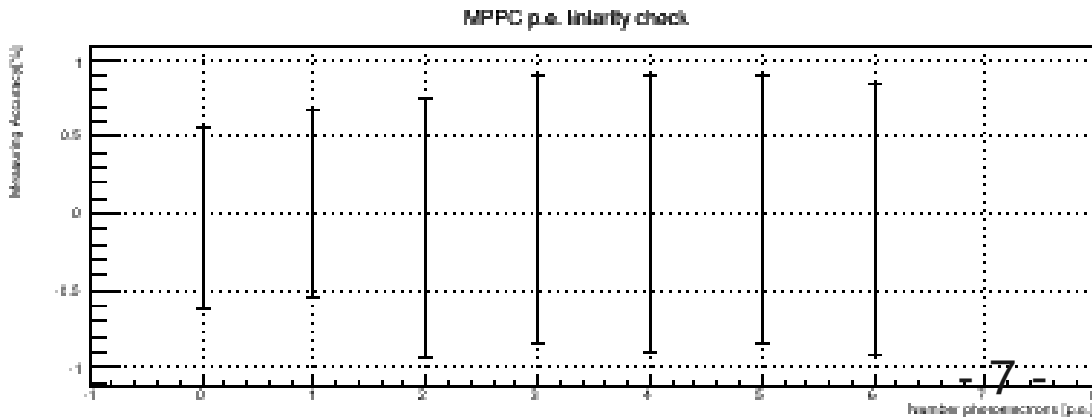


Bias:66.34V
 Current: 1080uA
 InputDAC: 0V



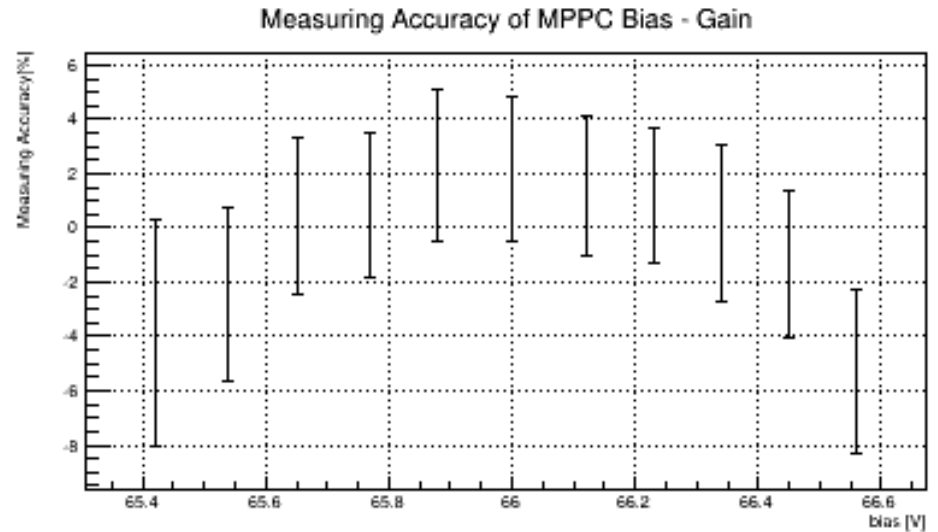
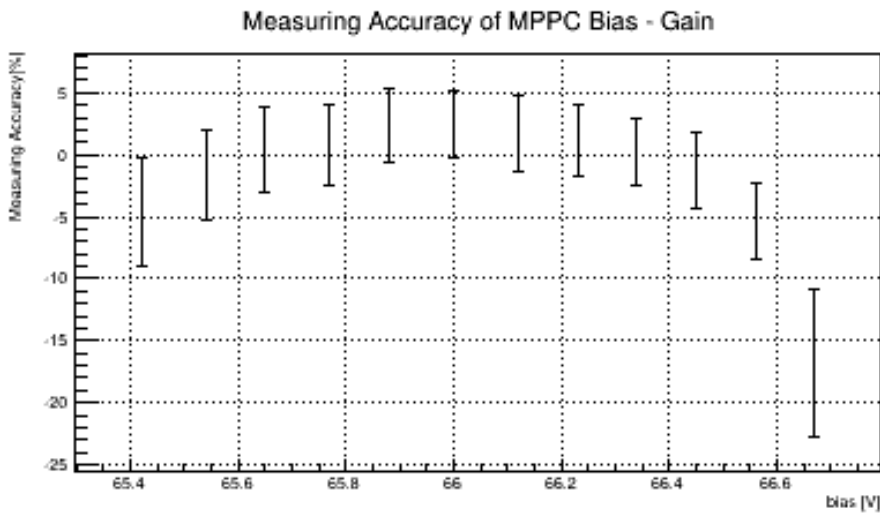
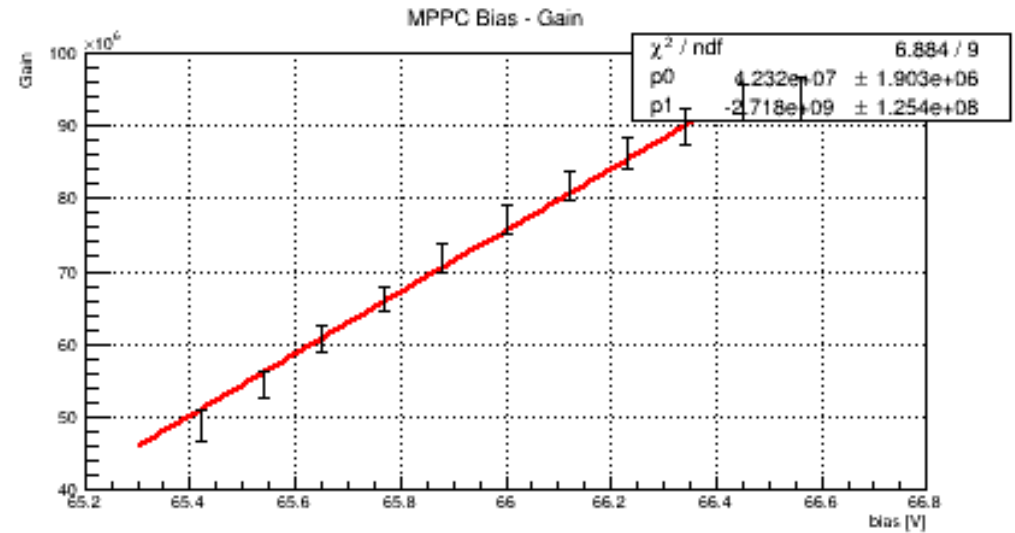
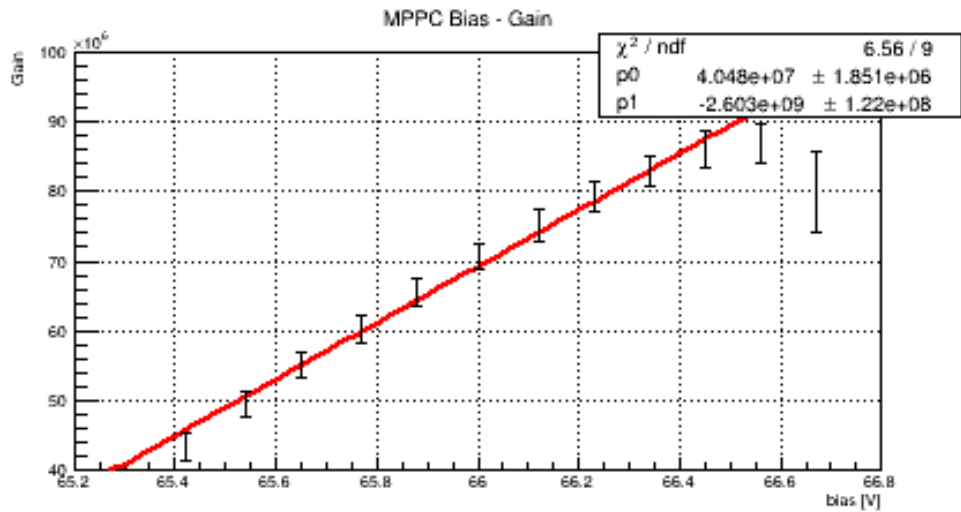
Fitting: $p_0 \cdot x + p_1$
 p_0 57.55
 p_1 789

Measuring Accuracy
 <1%



$$\begin{aligned} \text{Gain} &= p_0 \cdot 0.25[\text{pC}]/e \\ &= 57.55 \cdot 2.5e6 / 1.6 \\ &= 9.027e7 \end{aligned}$$

MPPC Bias-Gain Curve

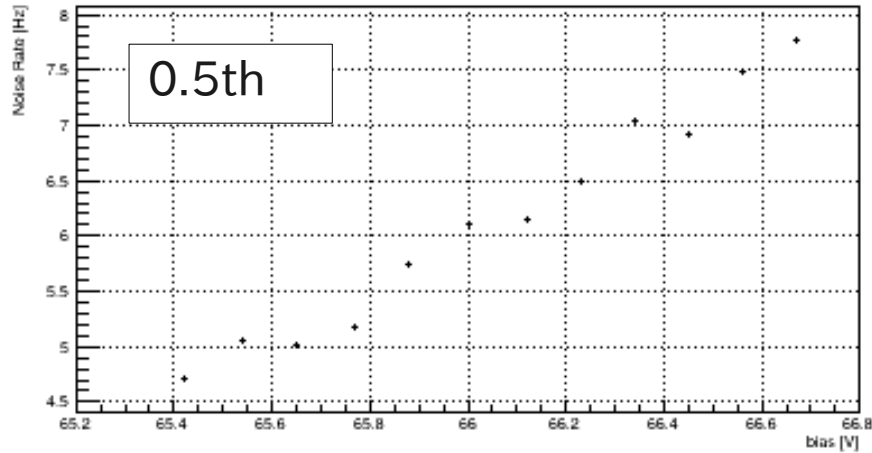


Serial No.112

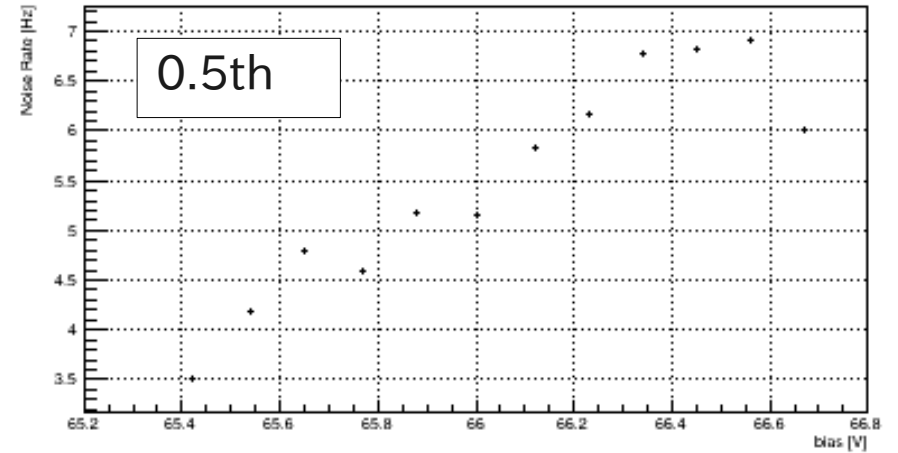
Serial No.103

MPPC Noise Rate

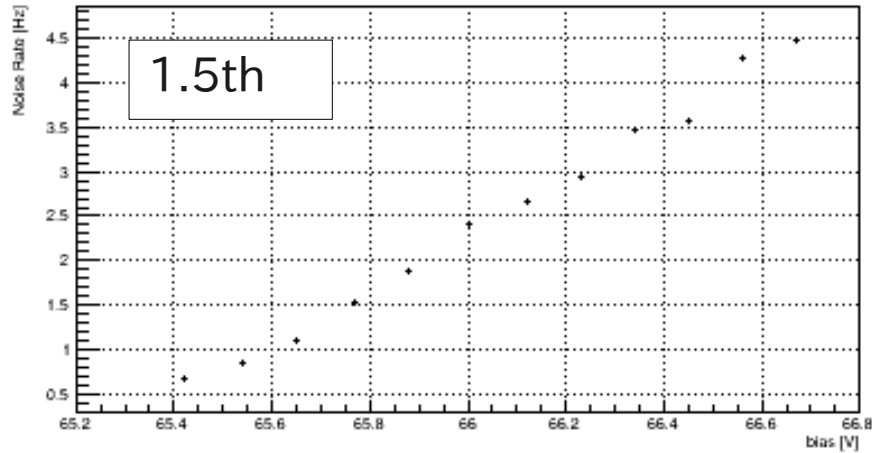
MPPC1: S12572-100P Serial No.112, Noise Rate



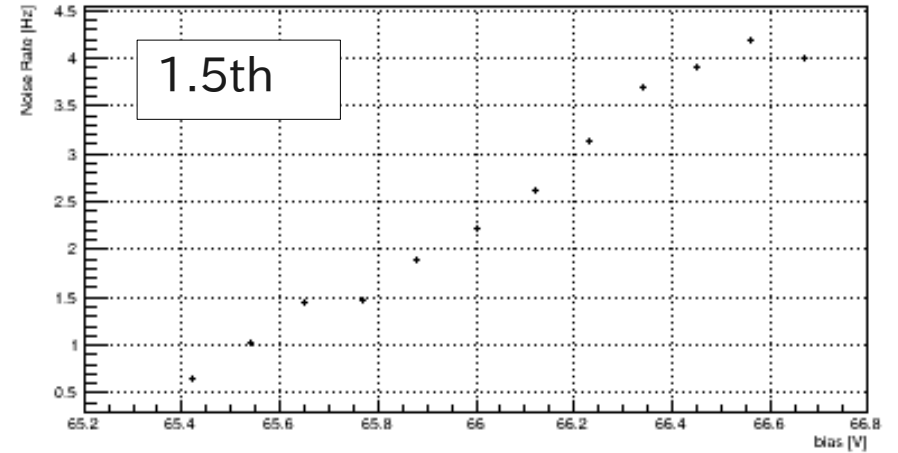
MPPC2: S12572-100P Serial No.103, Noise Rate



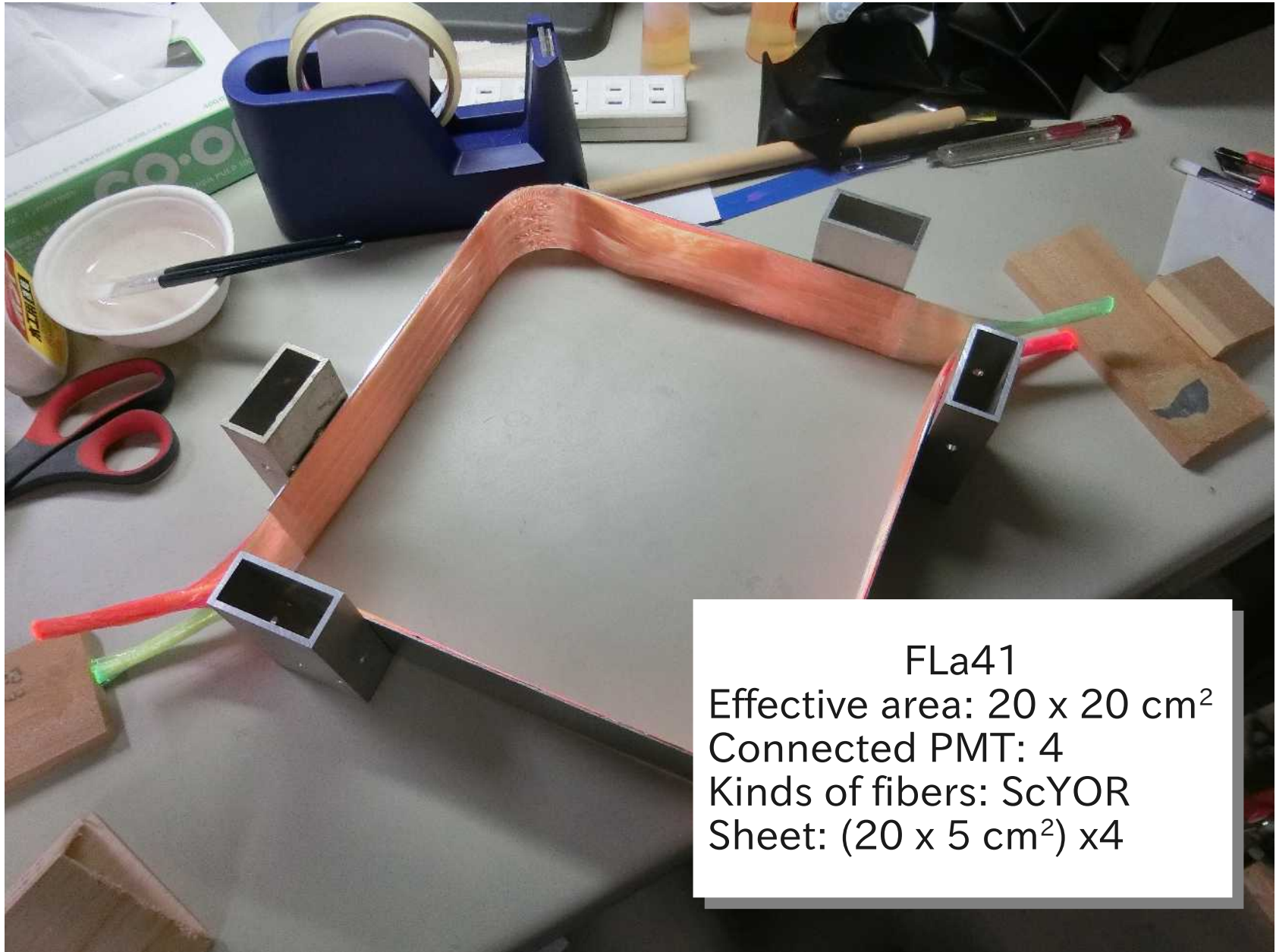
MPPC1: S12572-100P Serial No.112, Noise Rate



MPPC2: S12572-100P Serial No.103, Noise Rate



FLa41製作



FLa41
Effective area: $20 \times 20 \text{ cm}^2$
Connected PMT: 4
Kinds of fibers: ScYOR
Sheet: $(20 \times 5 \text{ cm}^2) \times 4$