

# PMT Response Function

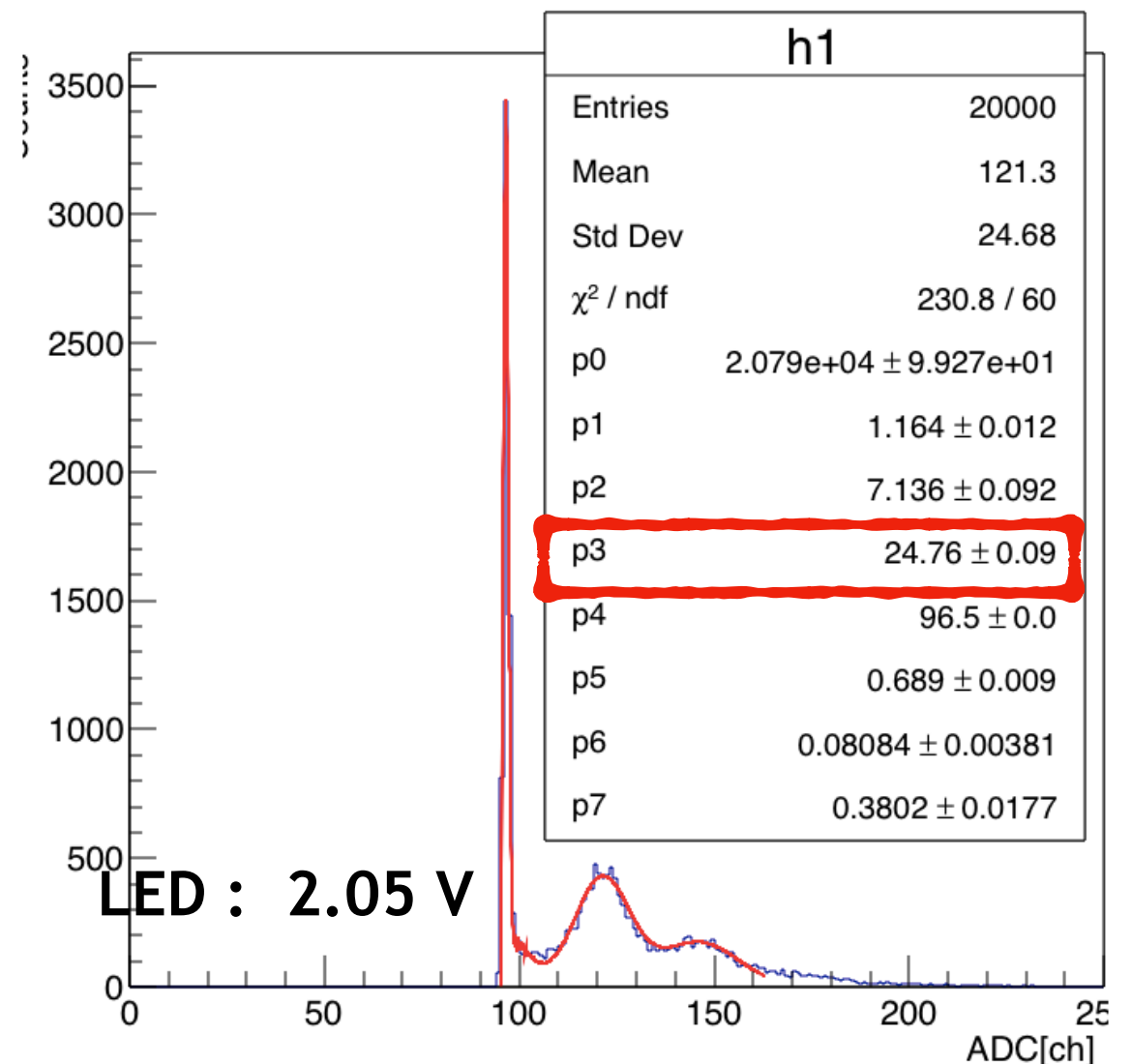
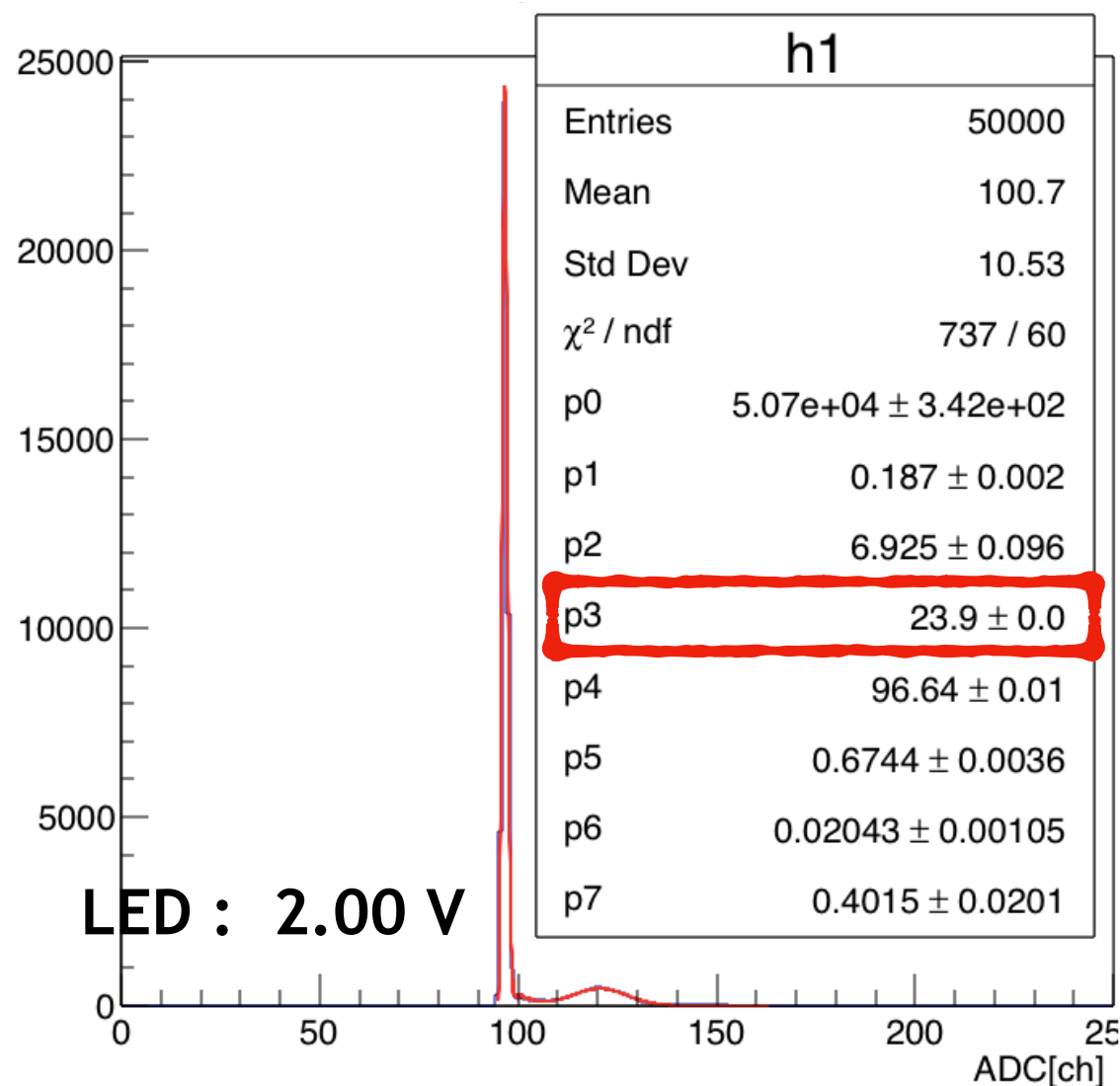
- Fitting Function for PMT Response

$$S_{real}(x) = const. \times \left[ \left\{ \frac{1-w}{\sigma_0 \sqrt{2\pi}} \exp\left(-\frac{(x-Q_0)^2}{2\sigma_0^2}\right) + w\theta(x-Q_0) \times \alpha \exp[-\alpha(x-Q_0)] \right\} e^{-\mu} \right. \\ \left. + \sum_{n=1}^{\infty} \frac{\mu^n e^{-\mu}}{n} \times \frac{1}{\sigma_1 \sqrt{2\pi n}} \exp\left(-\frac{(x-Q_0-nQ_1)^2}{2n\sigma_1^2}\right) \right]$$

Fitting Params.	Meanings	Params.
const.	Constant	p0
$\mu$	Expectation Value of Poission Distribution	p1
$\sigma_1$	1st Peak's Standard Dev.	p2
$Q_1$	Gain	p3
$Q_0$	Pedestal	p4
$\sigma_0$	Standard Deviation of Pedestal	p5
w	Probability of Background Process	p6
$\alpha$	Procedure of Background Procedure	p7

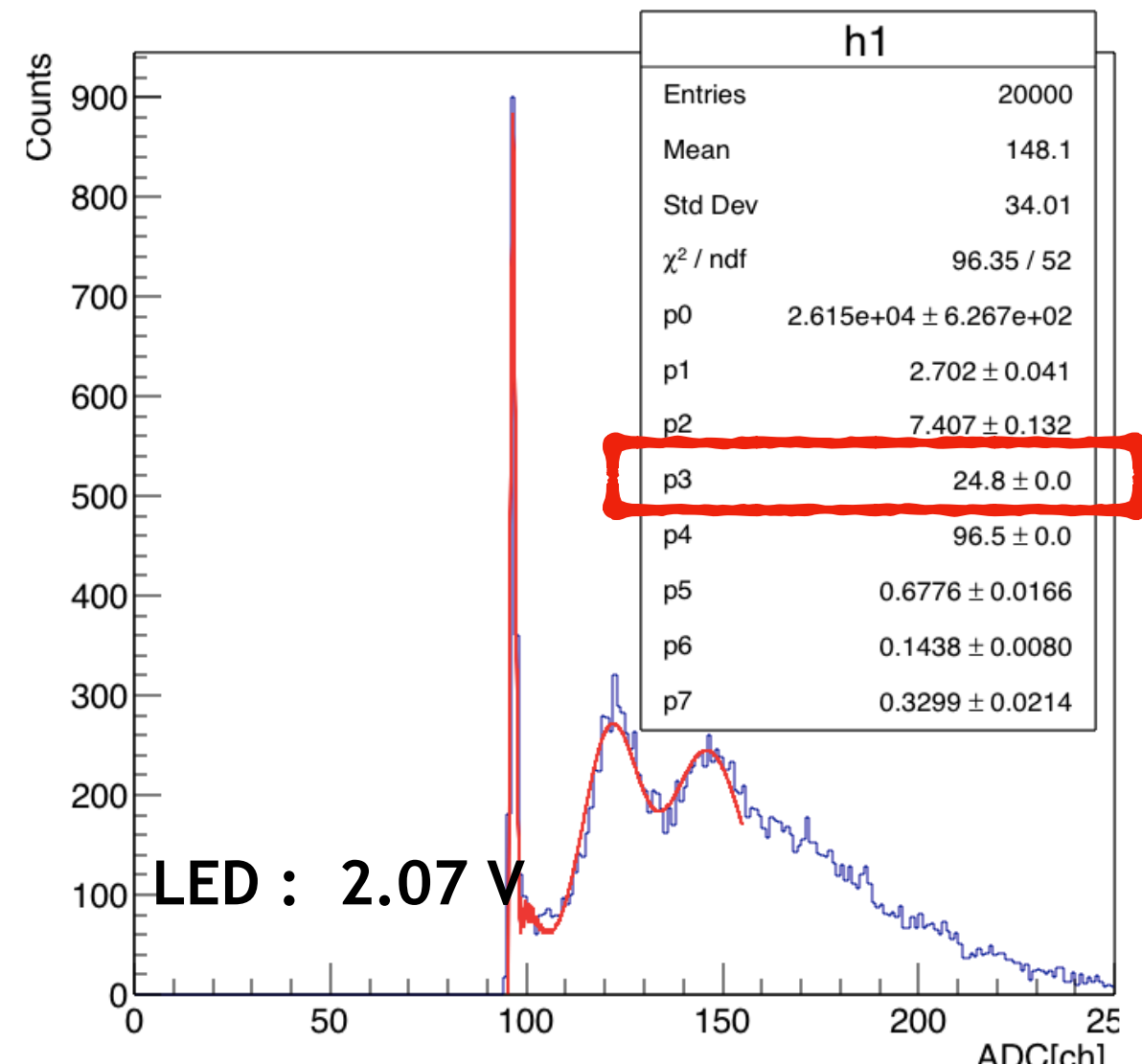
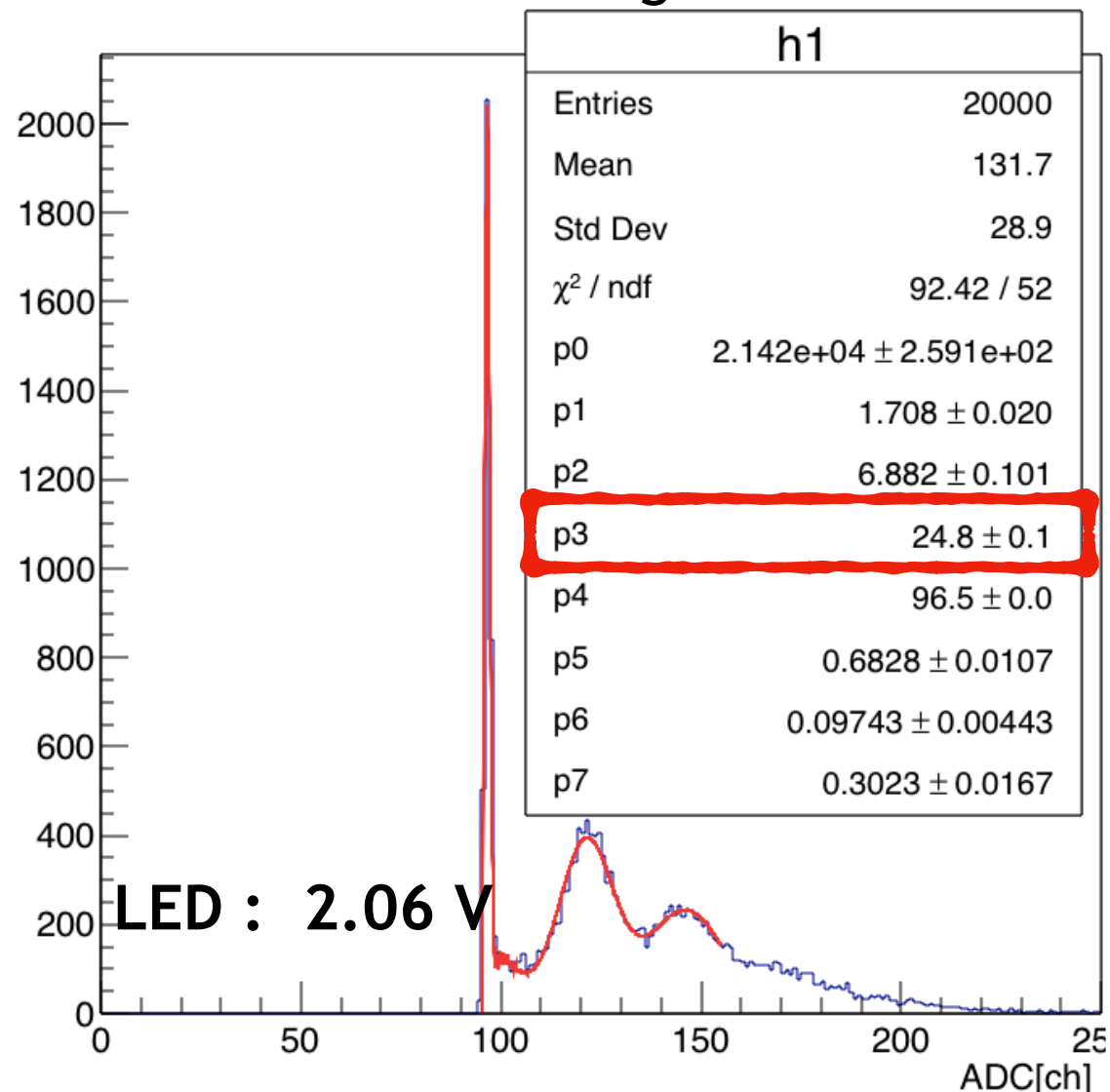
# PMT Test with LED

- PMT H11284-100UV (Max. HV -2000 V) Serial No. ZK 8619
- Applied Voltage : -1700 V
- LED : Scanned starting from 2.0 V to 2.07V, every 0.01 V, 100 Hz, 10 ns



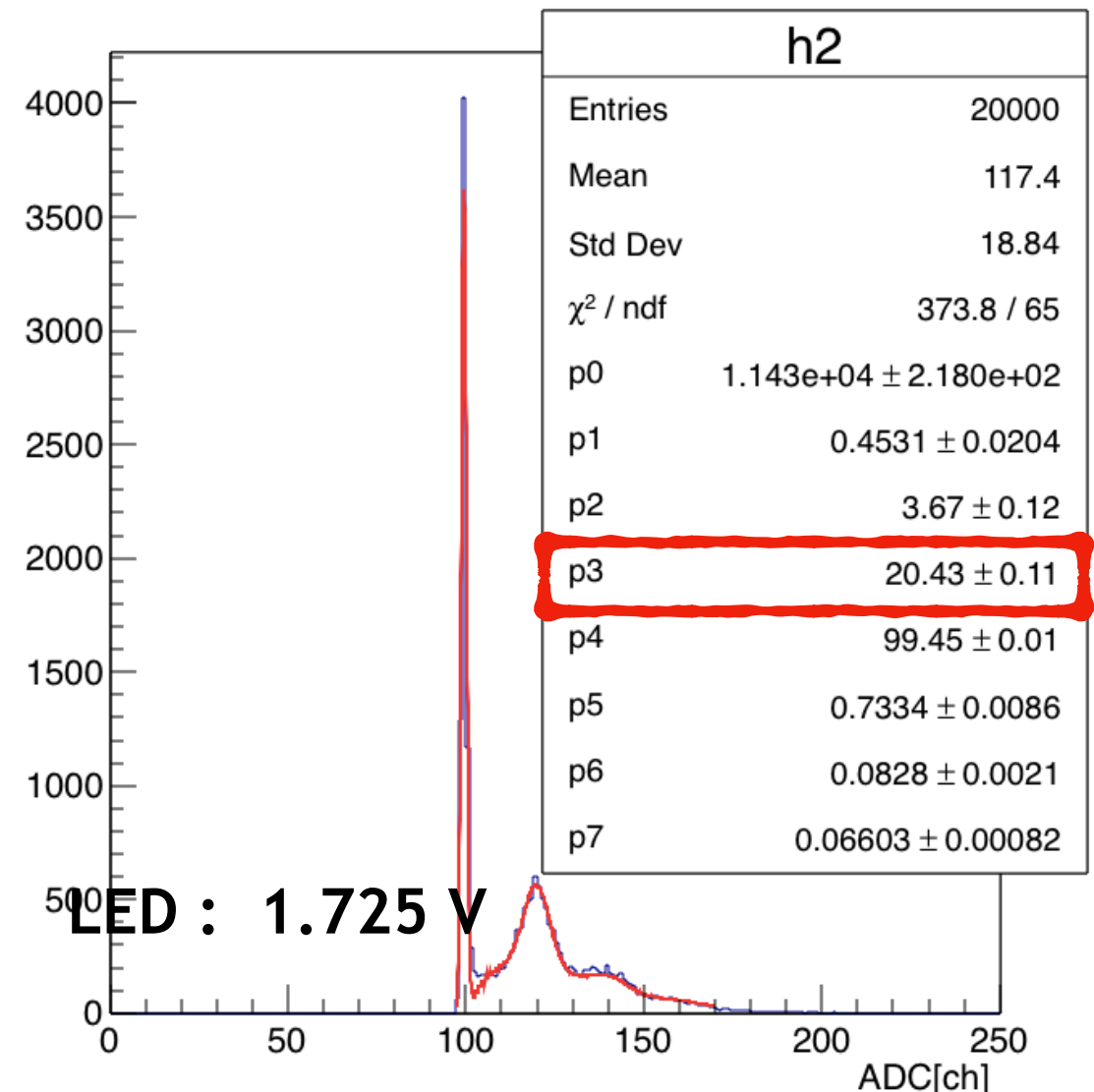
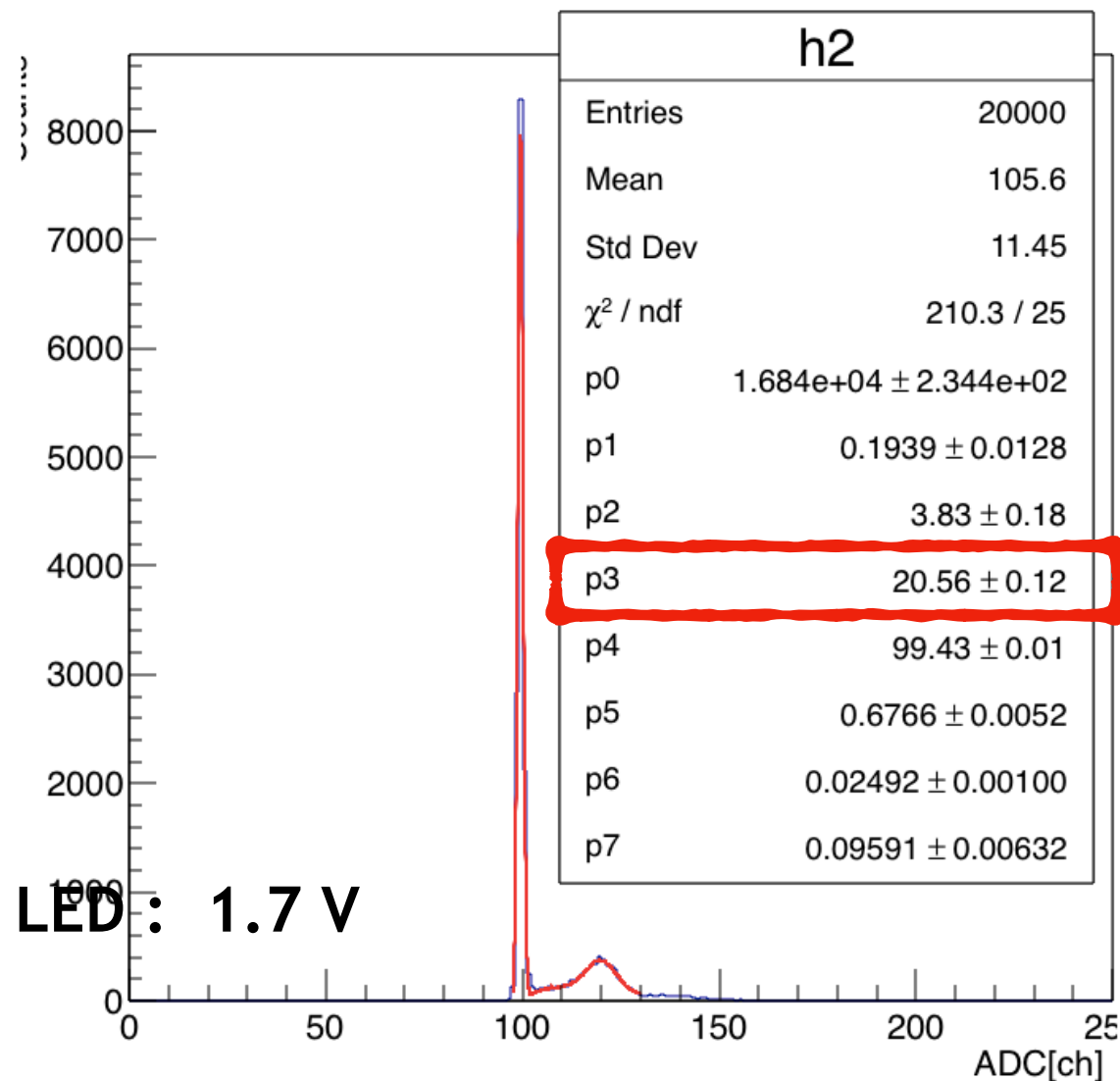
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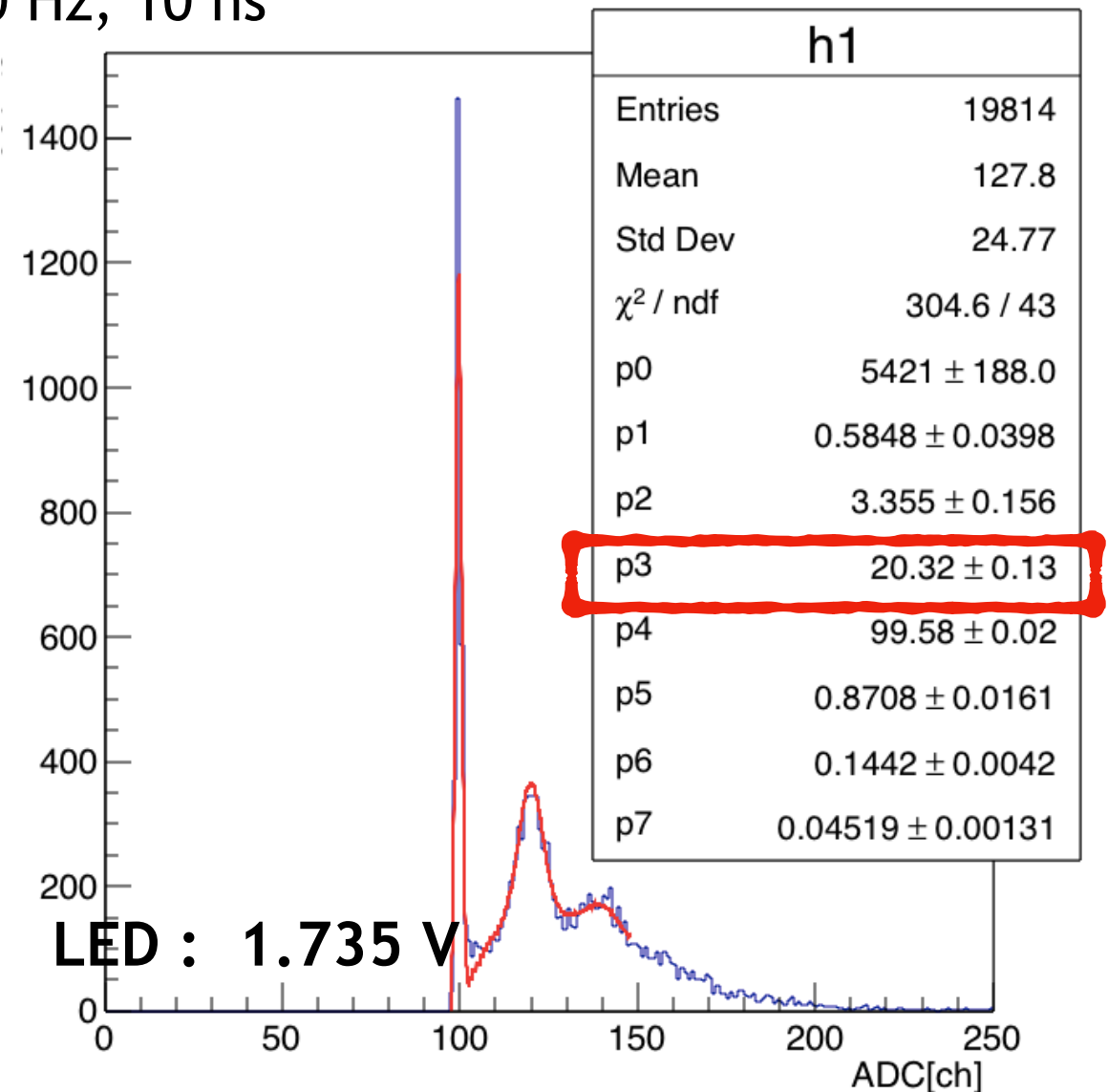
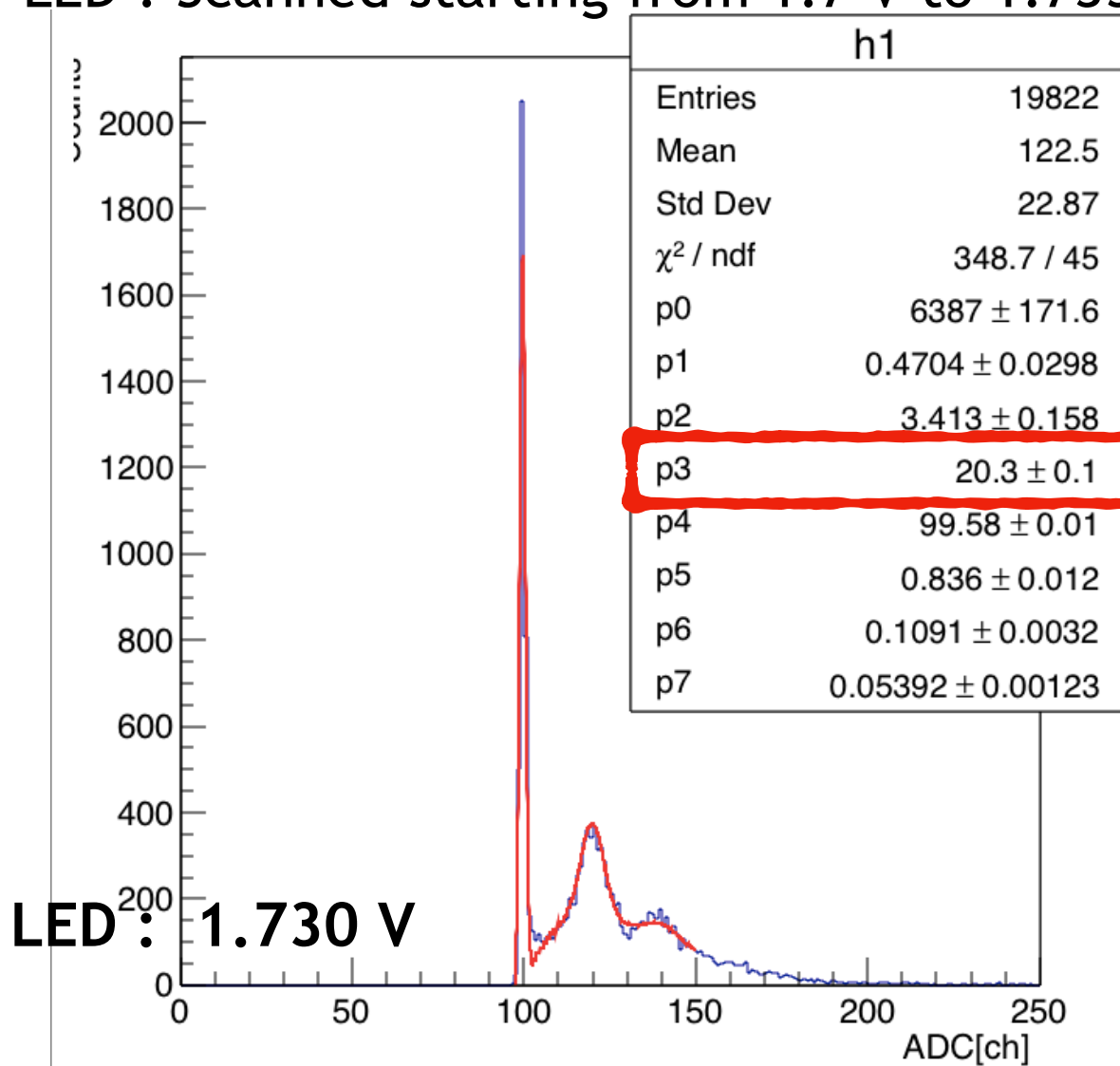
# PMT Test with LED

- PMT H11284-100UV (Max. HV -2000 V) Serial No. ZK 8620
- Applied Voltage : -1950 V
- LED : Scanned starting from 1.7 V to 1.735V, 100 Hz, 10 ns



# PMT Test with LED

- PMT H11284-100UV (Max. HV -2000 V) Serial No. ZK 8620
- Applied Voltage : -1950 V
- LED : Scanned starting from 1.7 V to 1.735V, 100 Hz, 10 ns





# Reflector Selection

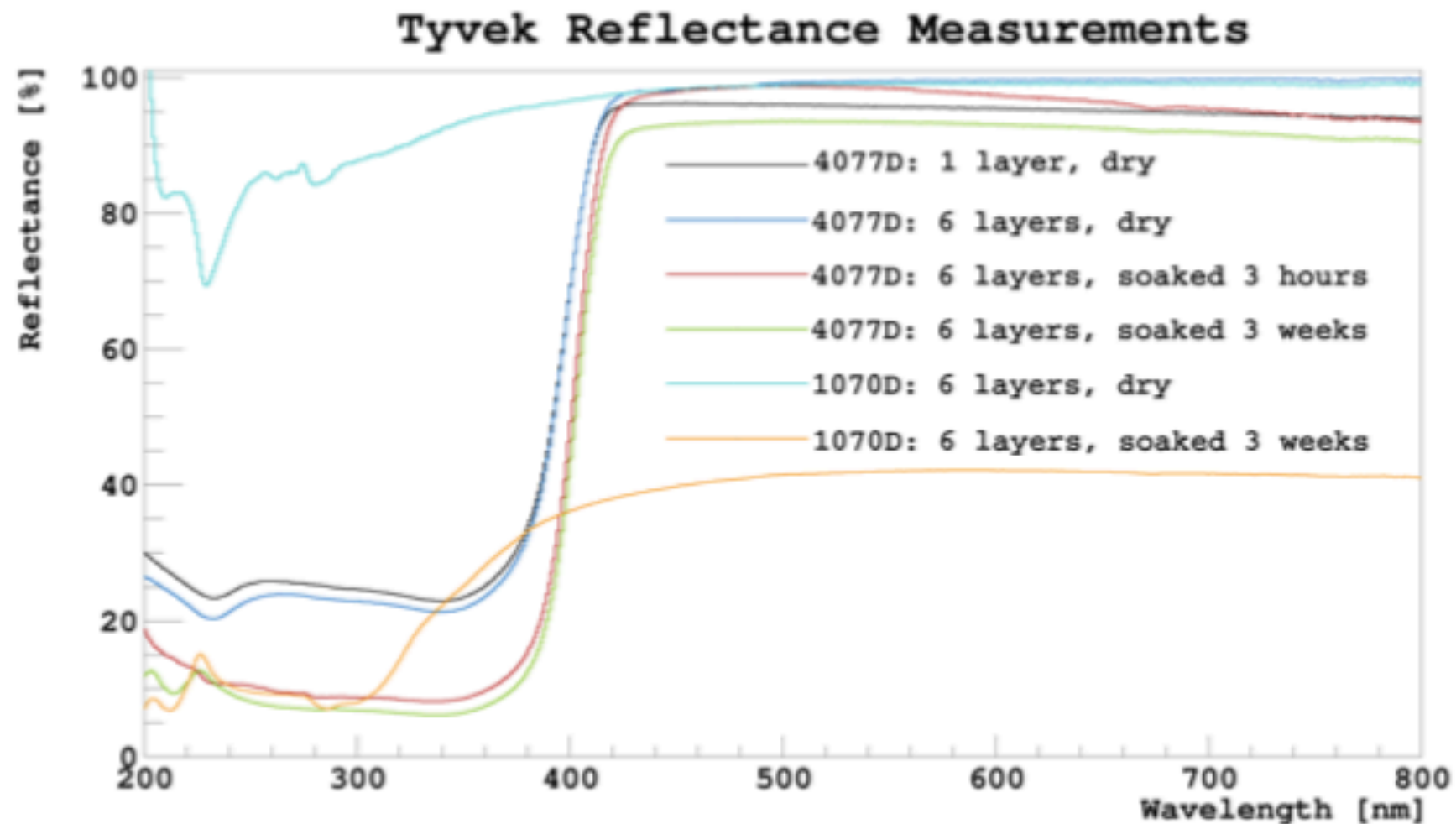


Figure 6: Reflectance measurements of Tyvek reflectors. The black curve shows the reflectance of Tyvek 4077D with one layer, while blue shows the same with 6 layers. Additional curves compare two different types of Tyvek after soaking in a PC+TMB cocktail for various lengths of time: (red) 4077D after 3 hours, (orange) 4077D after 3 weeks, (green) 1070D before soaking, and (cyan) 1070D after 3 weeks. (Not shown) Tyvek 1082D exhibited very similar behavior to 1070D.

**Available Now**

# Distilled Water



20L



200L



1,000L

## 증류수(Distilled Water) & 초순수(Deionized Water)

- 부품 & 제품 세정
- 레이저장비 냉각수
- 화장품 & 화학약품 제조
- 지게차 & 전동카트 배터리
- 시약제조 & 실험실
- 장비테스트

pH (수소이온농도)	-	7.0
Resistivity (비저항)	MΩ/cm	18
SiO <sub>2</sub> (실리카)	ppb	10
Cl <sup>-</sup> (염소이온)	ppm	ND
SO <sub>4</sub> <sup>2-</sup> (황산이온)	ppm	ND
Microbe (미생물)	CFU/mL	ND
Particles (초미립자)	EA	8-15(0.2 <sub>μm</sub> )

※ ND : Not Detect (불검출)



# Distilled Water

고려대학교 핵물리연구실 귀중

견적제출일자 / 2018년 09월 09일

견적유효기간 / 제출일로부터 30일

납 기 / 익일도착

납 품 장 소 / 택배발송

water solution technology

**워터솔루션테크**

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TEL(02)2675-2981 / FAX(02)2675-2982

대전공장 : 대전광역시 유성구 테크노8로 73-2  
TEL(042)282-2981 / FAX(042)272-2981

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TEL(054)971-0962 / FAX(054)971-0963

영업담당 : 인 통 경 (010)9935-2277

견 적 명 / Deionized Water 납품

견 적 금 액 / ₩260,000- (VAT 별도)

No.	Item& Specification	Unit	Q'ty	Price(₩)	Amount(₩)
1	Deionized Water	20L(Pail)	20	10,000	200,000
2	운송비	Pallet	1	50,000	50,000
	#####				



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# Summary



- One H11284-100UV needs to be replaced to another ( tested with -1950 V )
- Reflector Test with 60 cm container ( Available Reflector : 1070D, 1082D, 1073D
- Distilled Water Purchase
- New PMT for New Trigger Counter Test