SHIMADZU
Excellence in science

LabSolutions UV-Vis

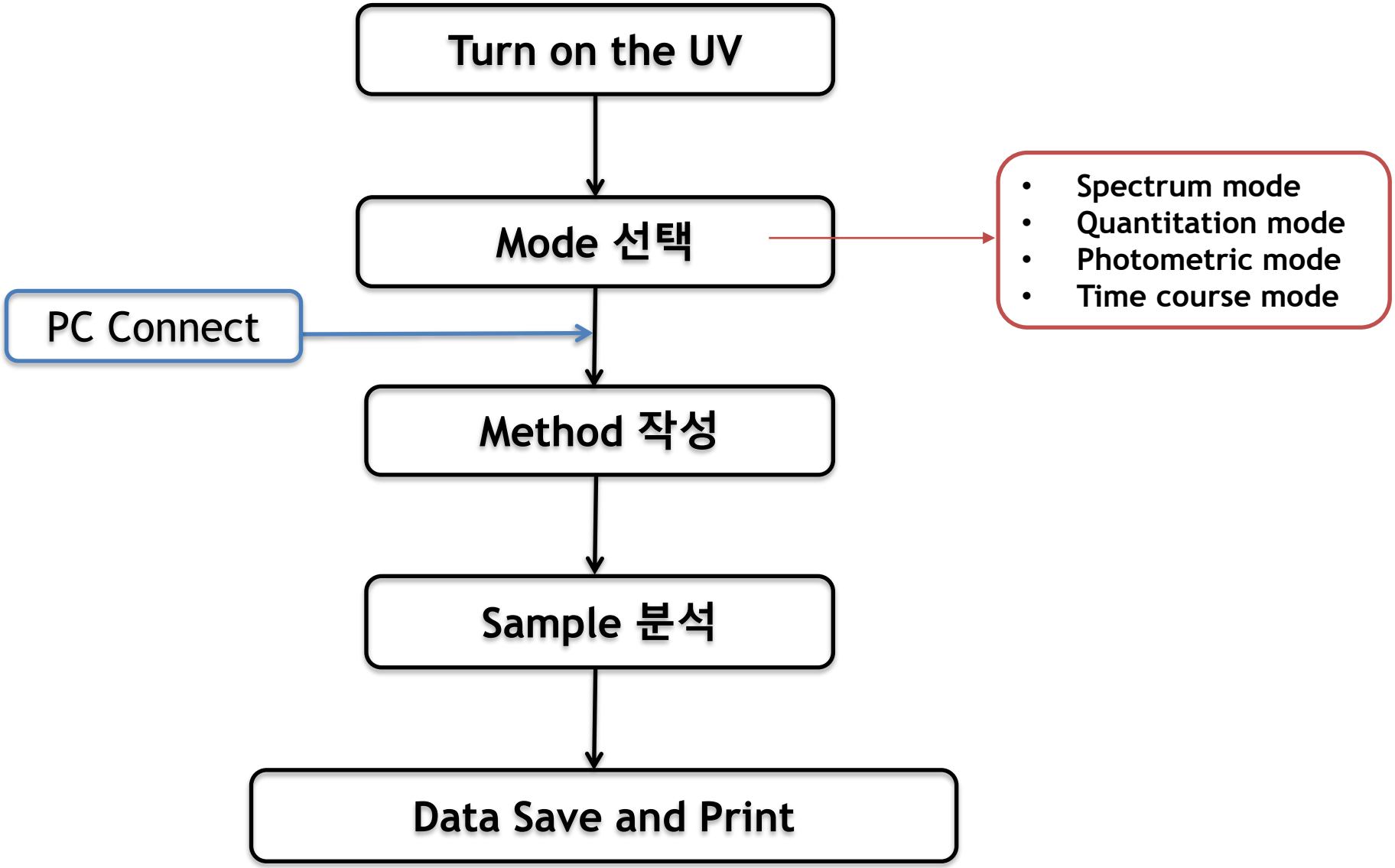
Technical Research Center

Contents

- Operation flow
- Basic operation
- Spectrum mode
- Quantitation mode
- Photometric mode
- Kinetics mode

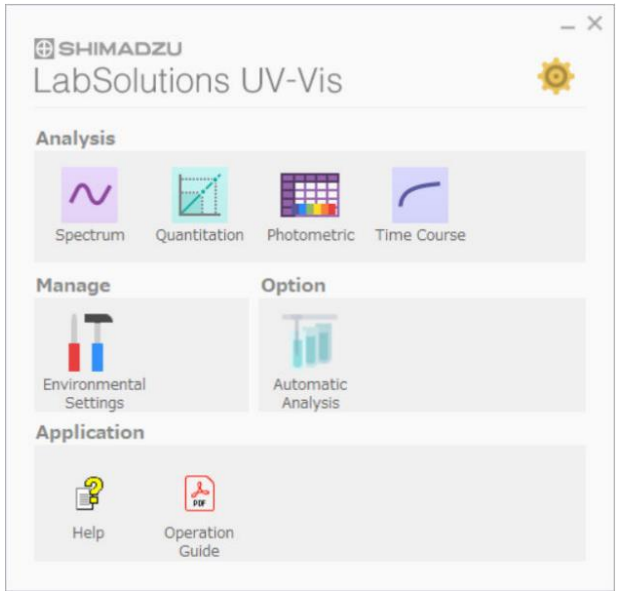
SHIMADZU

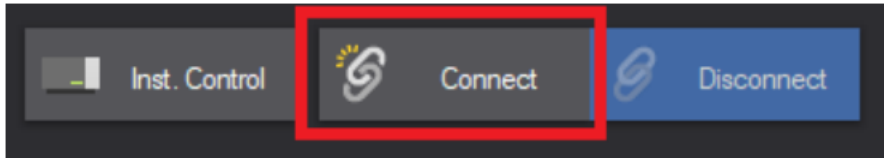
Operation Flow

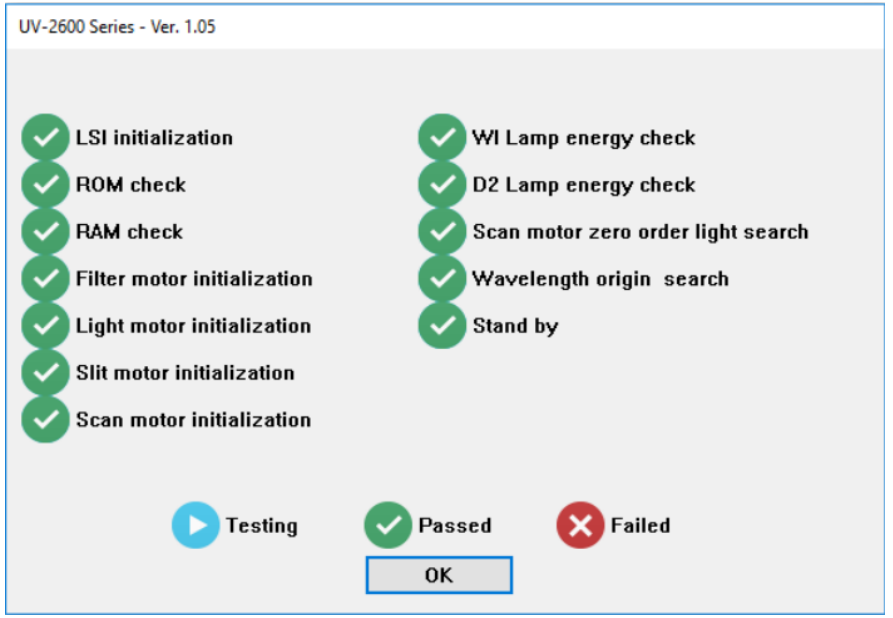


Basic operation

Basic operation





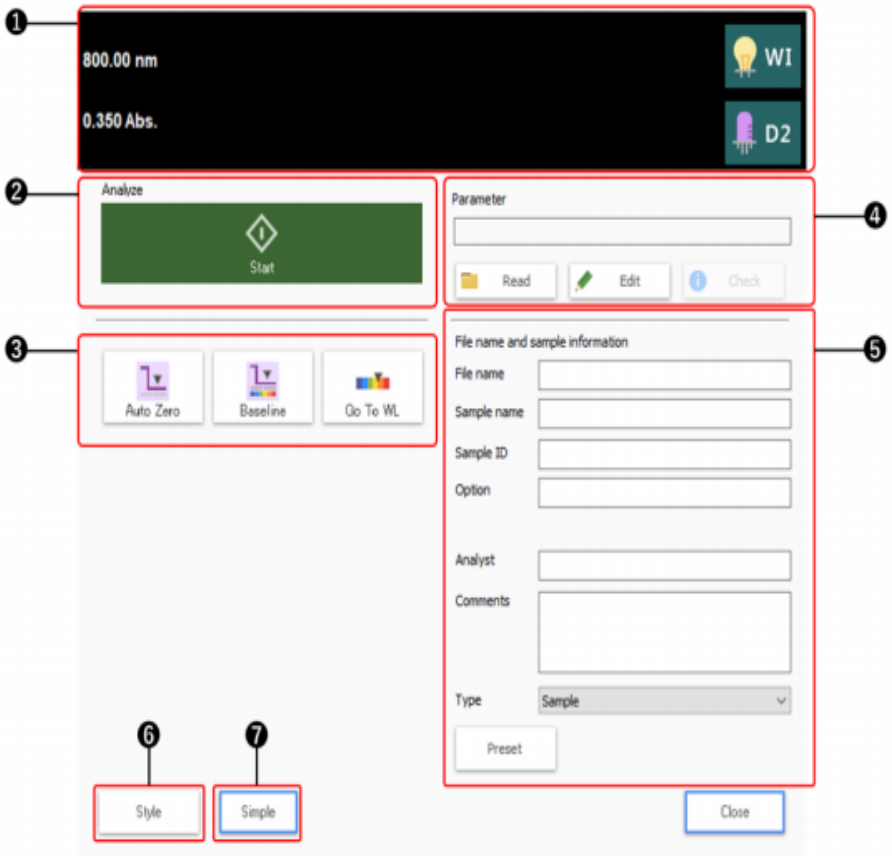


Window

① : Title bar
② : Menu bar
③ : Tool bar
④ : Tree view
⑤ : Log view
⑥ : Application area

SHIMADZU

Window



Instrument Control Window
(Spectrum, Time Course)

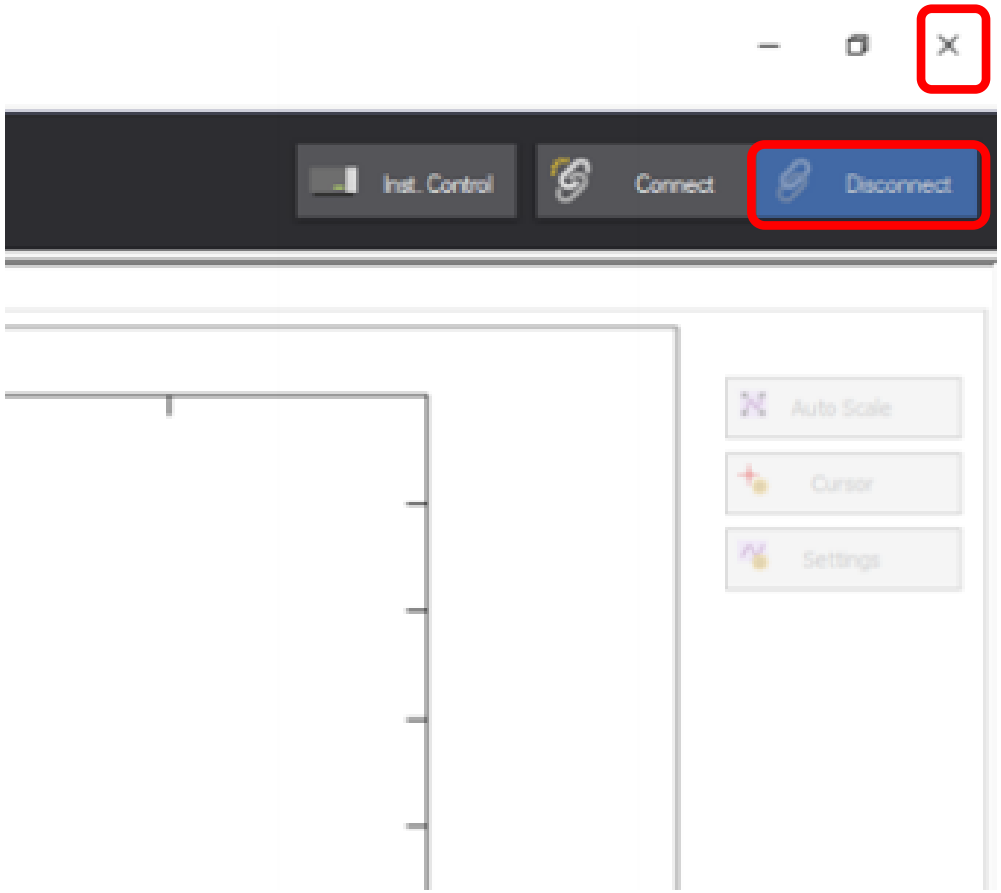
Instrument Control Window
(Quantitation, Photometric)

① : Real-time monitor
② : Instrument control
③ : Auto zero/Baseline/Go to WL
④ : Parameter
⑤ : File name and sample info
⑥ : Style
⑦ : Simple

SHIMADZU

Shutting Down

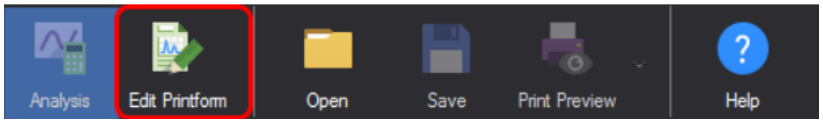
- File 저장 → PC와 기기 Disconnet → Program OFF



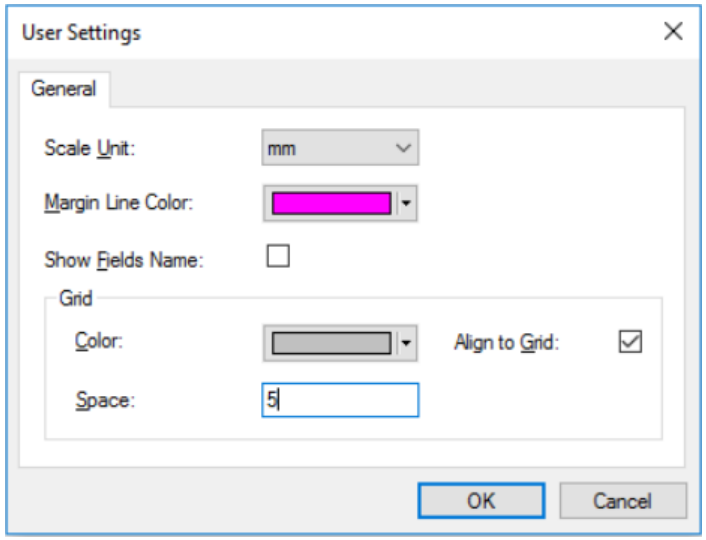
SHIMADZU

Print out

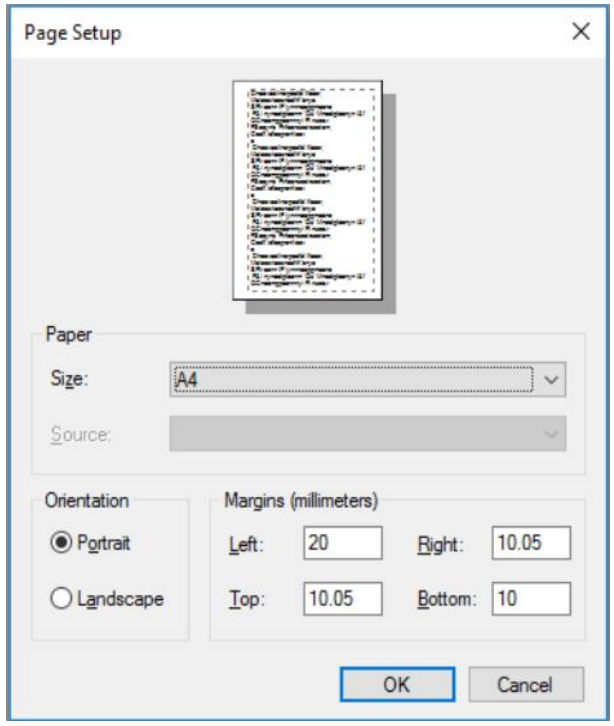
- Report generator



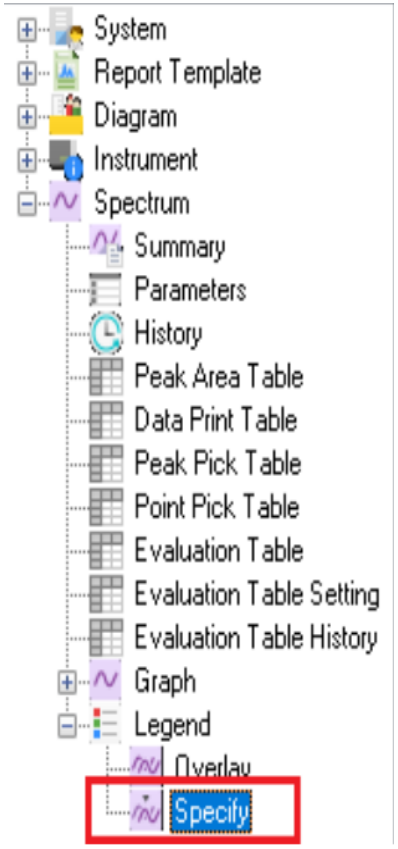
  - 기본설정
    - [File] → [New] → [Tools] → [User Settings]



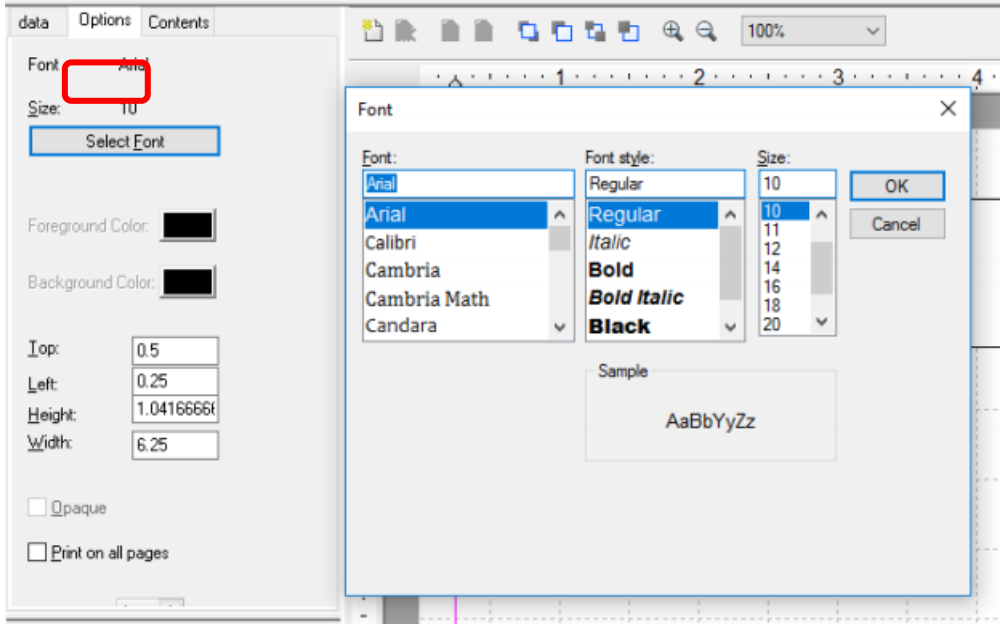
    - [File] → [Page Setup]



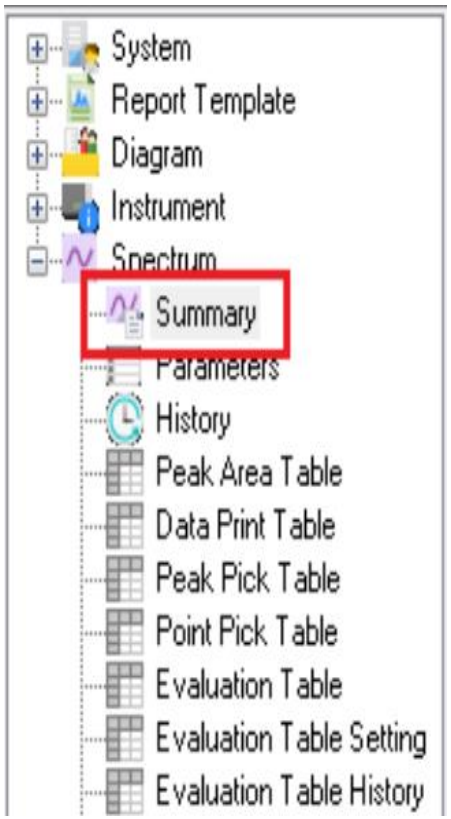
Print out

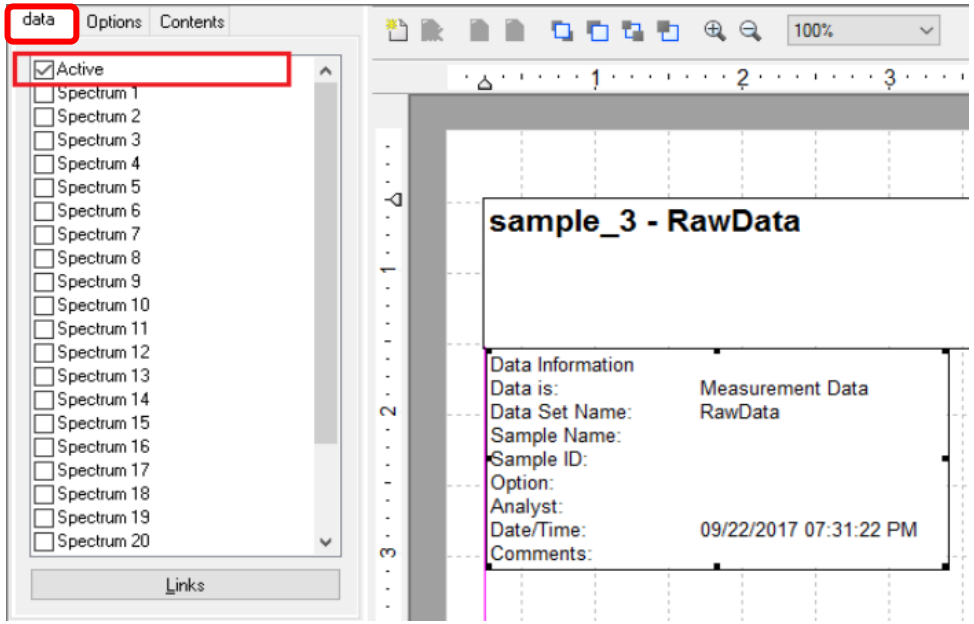

System
Report Template
Diagram
Instrument
Spectrum
Summary
Parameters
History
Peak Area Table
Data Print Table
Peak Pick Table
Point Pick Table
Evaluation Table
Evaluation Table Setting
Evaluation Table History
Graph
Legend
Overlay
Specify

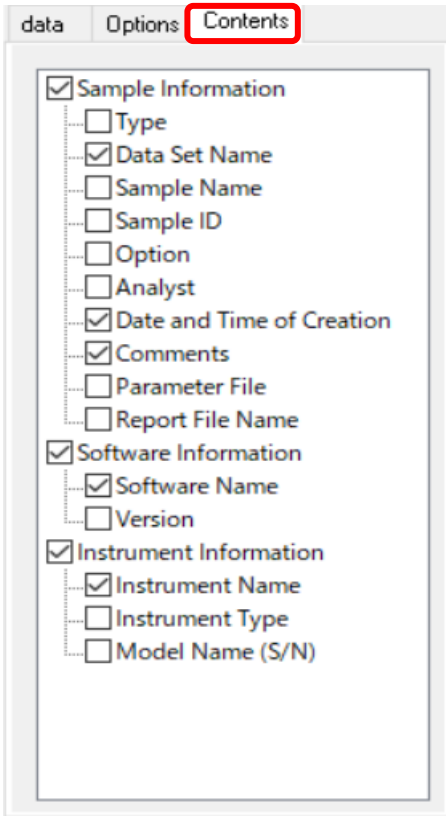
data
Options
Contents
Display a line
100%
sample_3 - RawData


data
Options
Contents
Font
Size:
Select Font
Foreground Color:
Background Color:
Top:
0.5
Left:
0.25
Height:
Width:
6.25
Opaque
Print on all pages
100%
Font
Font:
Font style:
Size:
Arial
Regular
10
OK
Cancel
Arial
Calibri
Cambria
Cambria Math
Candara
Regular
Italic
Bold
Bold Italic
Black
10
11
12
14
16
18
20
Sample
AaBbYyZz

Print out

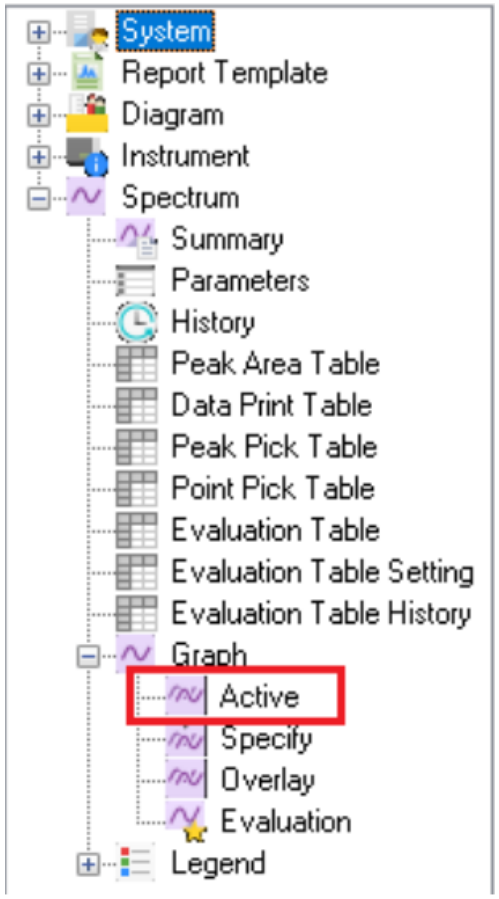


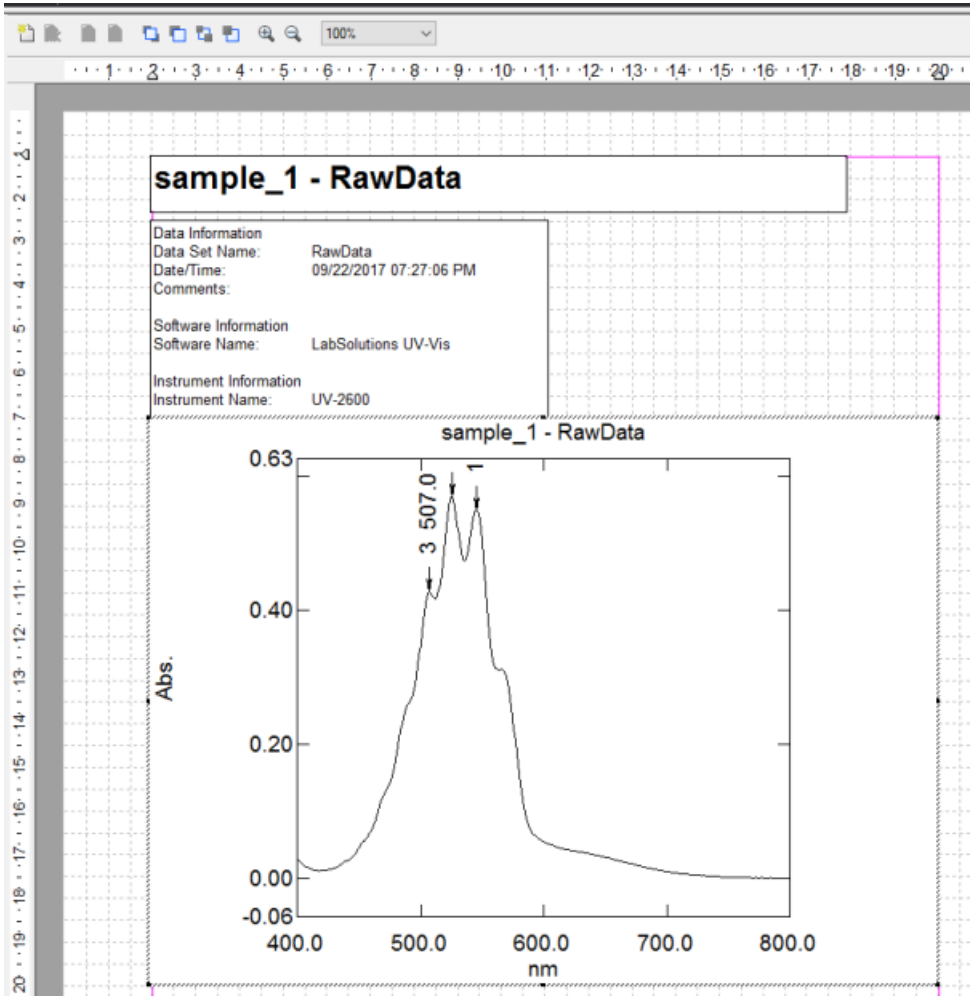




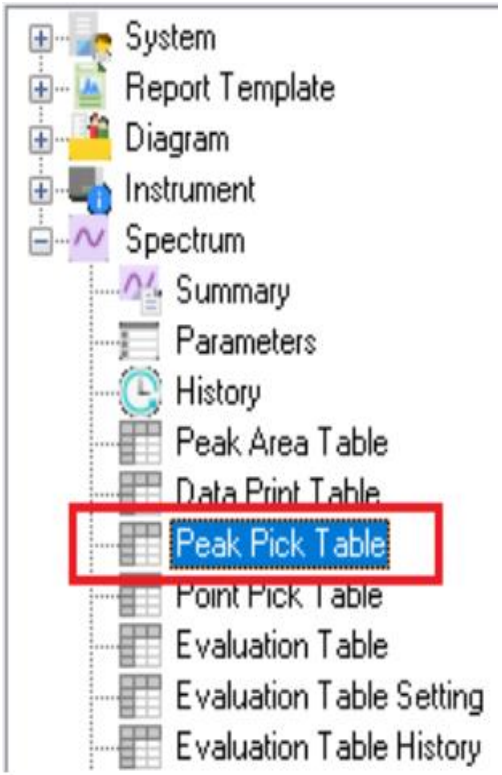
SHIMADZU

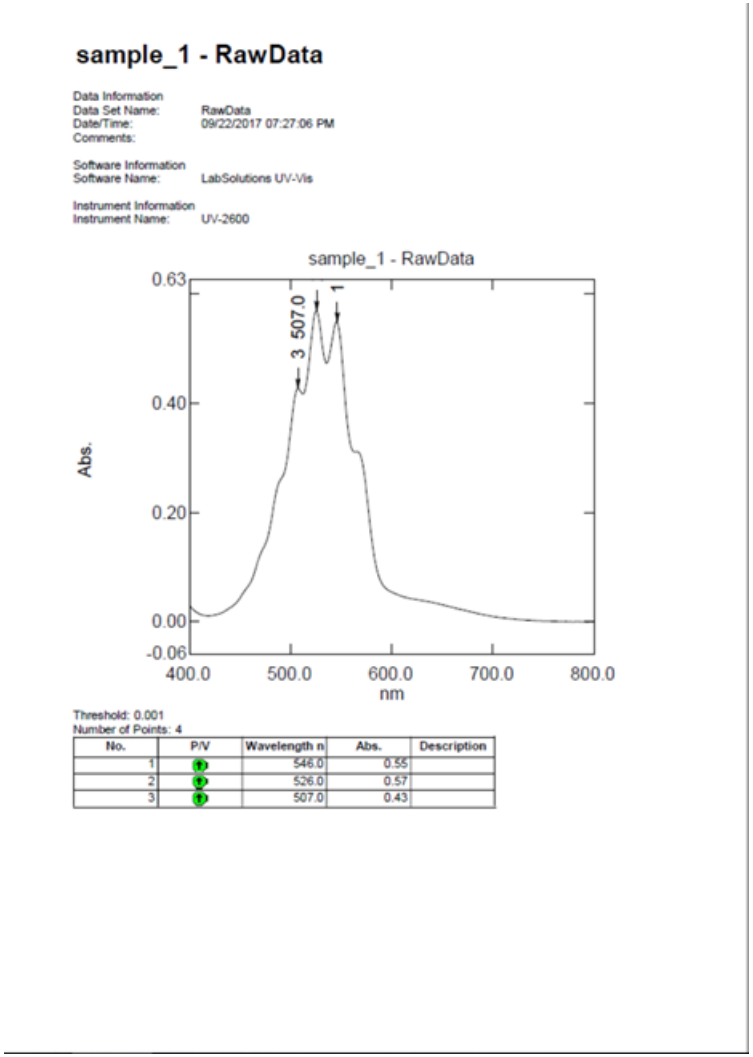
Print out


System
Report Template
Diagram
Instrument
Spectrum
Summary
Parameters
History
Peak Area Table
Data Print Table
Peak Pick Table
Point Pick Table
Evaluation Table
Evaluation Table Setting
Evaluation Table History
Graph
Active
Specify
Overlay
Evaluation
Legend


sample_1 - RawData
Data Information
Data Set Name: RawData
Date/Time: 09/22/2017 07:27:06 PM
Comments:
Software Information
Software Name: LabSolutions UV-Vis
Instrument Information
Instrument Name: UV-2600
sample_1 - RawData
507.0
1
0.63
0.40
0.20
0.00
-0.06
Abs.
400.0
500.0
600.0
700.0
800.0
nm

Print out





sample_1 - RawData

Data Information
Data Set Name: RawData
Date/Time: 09/22/2017 07:27:06 PM
Comments:

Software Information
Software Name: LabSolutions UV-Vis

Instrument Information
Instrument Name: UV-2600

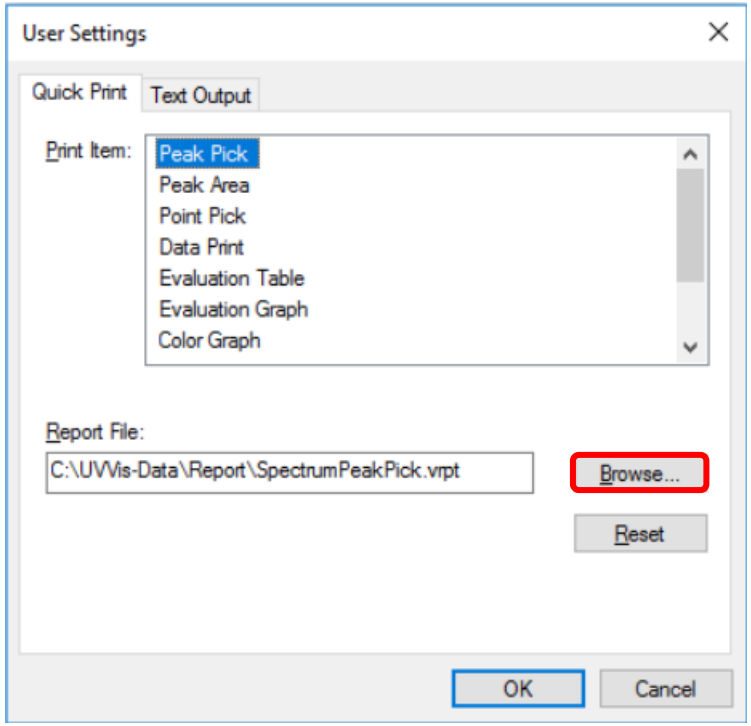
Threshold: 0.001
Number of Points: 4

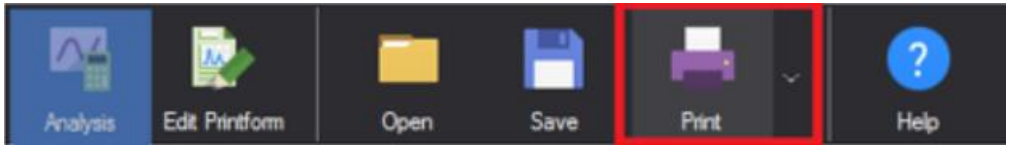
No.	P/V	Wavelength n	Abs.	Description
1		546.0	0.55	
2		526.0	0.57	
3		507.0	0.43	

SHIMADZU

Quick Print

[Tools] → [User Settings] → [Quick Print]

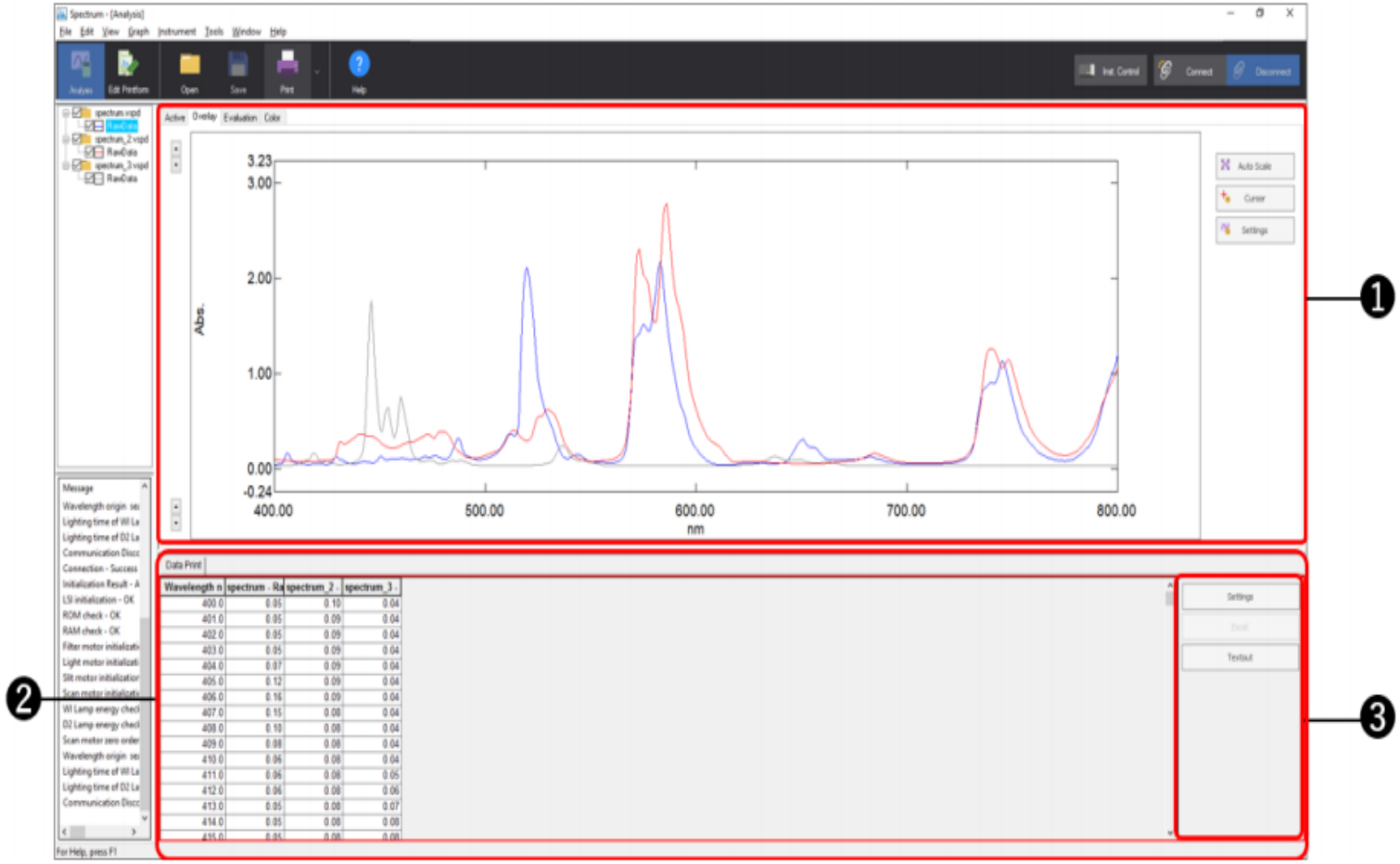




Spectrum mode

Spectrum mode

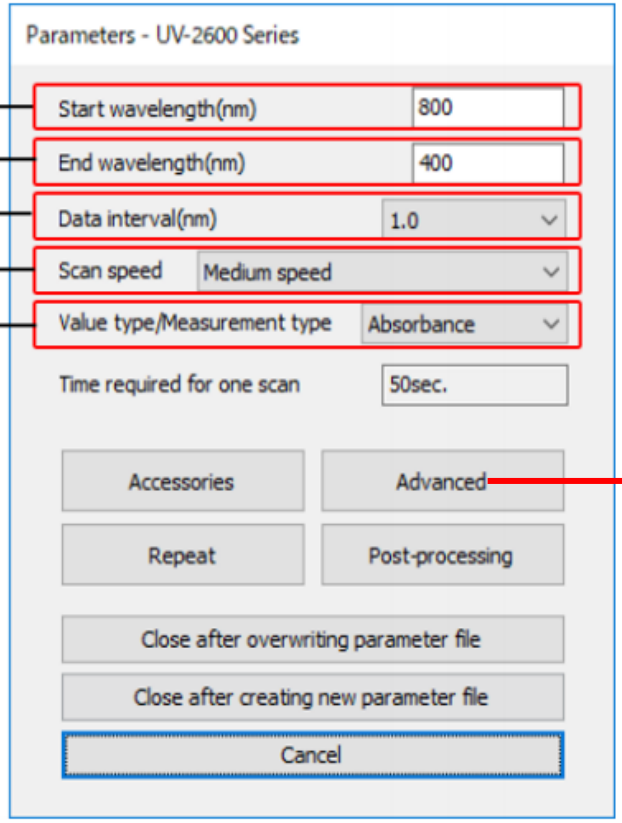
- 파장구간을 설정하여 그 구간의 흡광도와 투과율 등의 Spectrum을 측정하는 모드



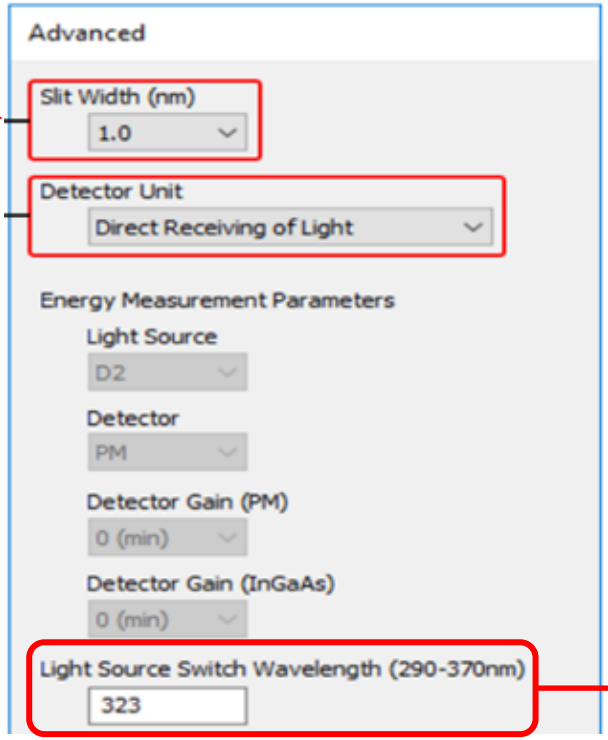
① : Graph view
② : Data view
③ : Setting area

Method

- [Parameter] - [Edit]



① : 파장 시작점
② : 파장 끝점
③ : data 측정간격
④ : scan 속도
⑤ : Measurement type

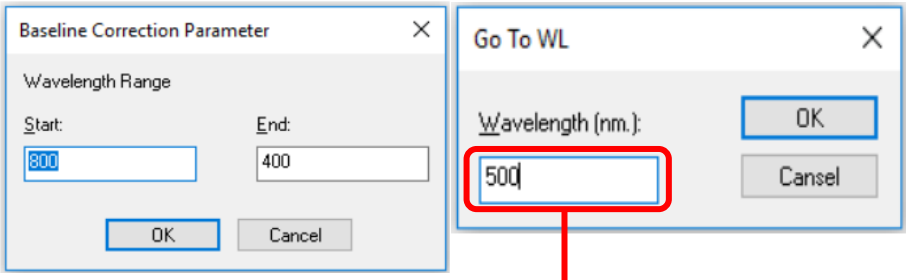


광원의 파장전환 값
: D2램프와 W1램프가 중첩되는 구간에서 램프가 전환됨

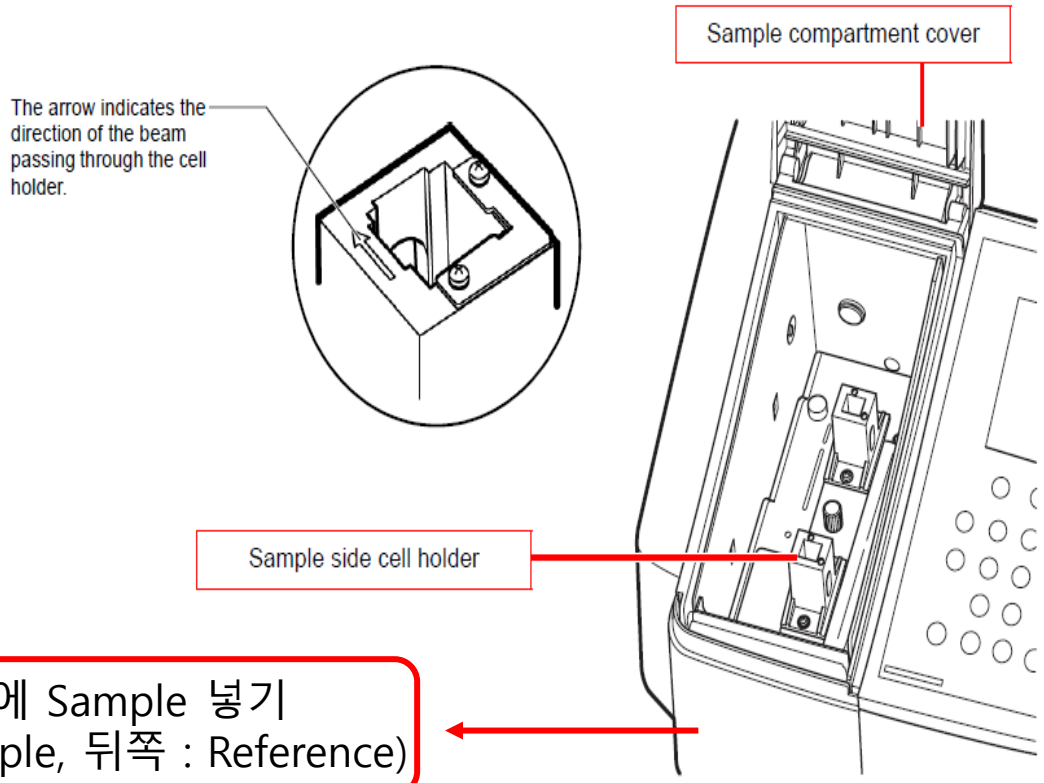
SHIMADZU

Measurement

- Baseline → Go To WL → Auto Zero → Measurement



UV-VIS는 보통 500~600 nm에서 최대 파워를 가진다. 따라서 그 범위에 가까운 파장에서 Auto zero를 실행하여 안정적인 제로라인을 설정한다.



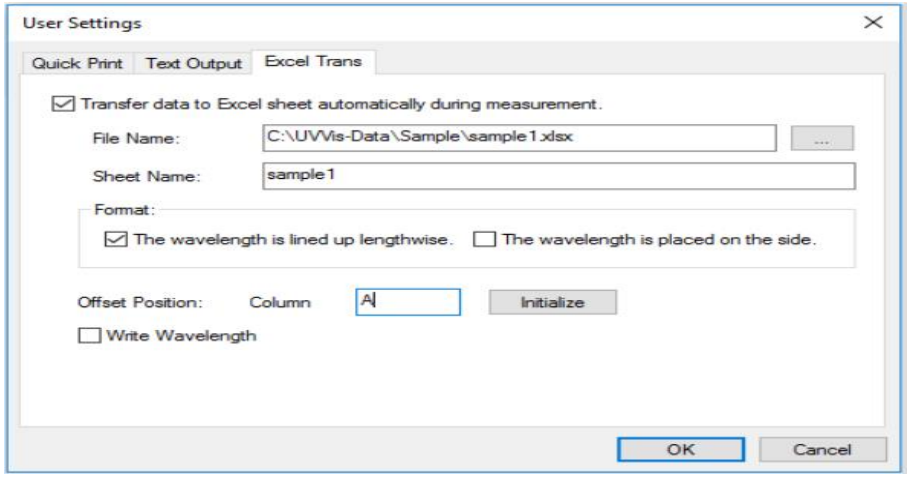
Cell holder에 Sample 넣기
(앞쪽 : Sample, 뒤쪽 : Reference)

SHIMADZU

Data Text Output

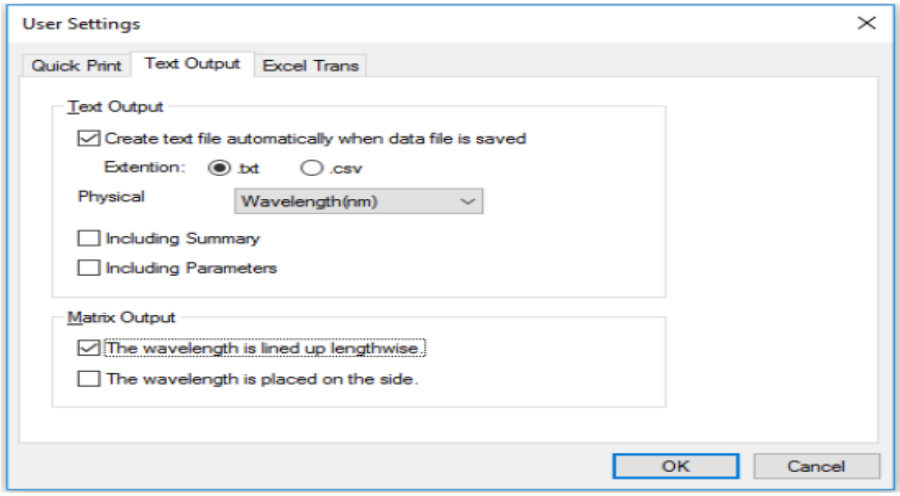
Real-time Transfer of Spectrum to Excel

[Tools] → [User Settings] → [Excel Trans] → [Transfer data to Excel sheet automatically during measurement] check

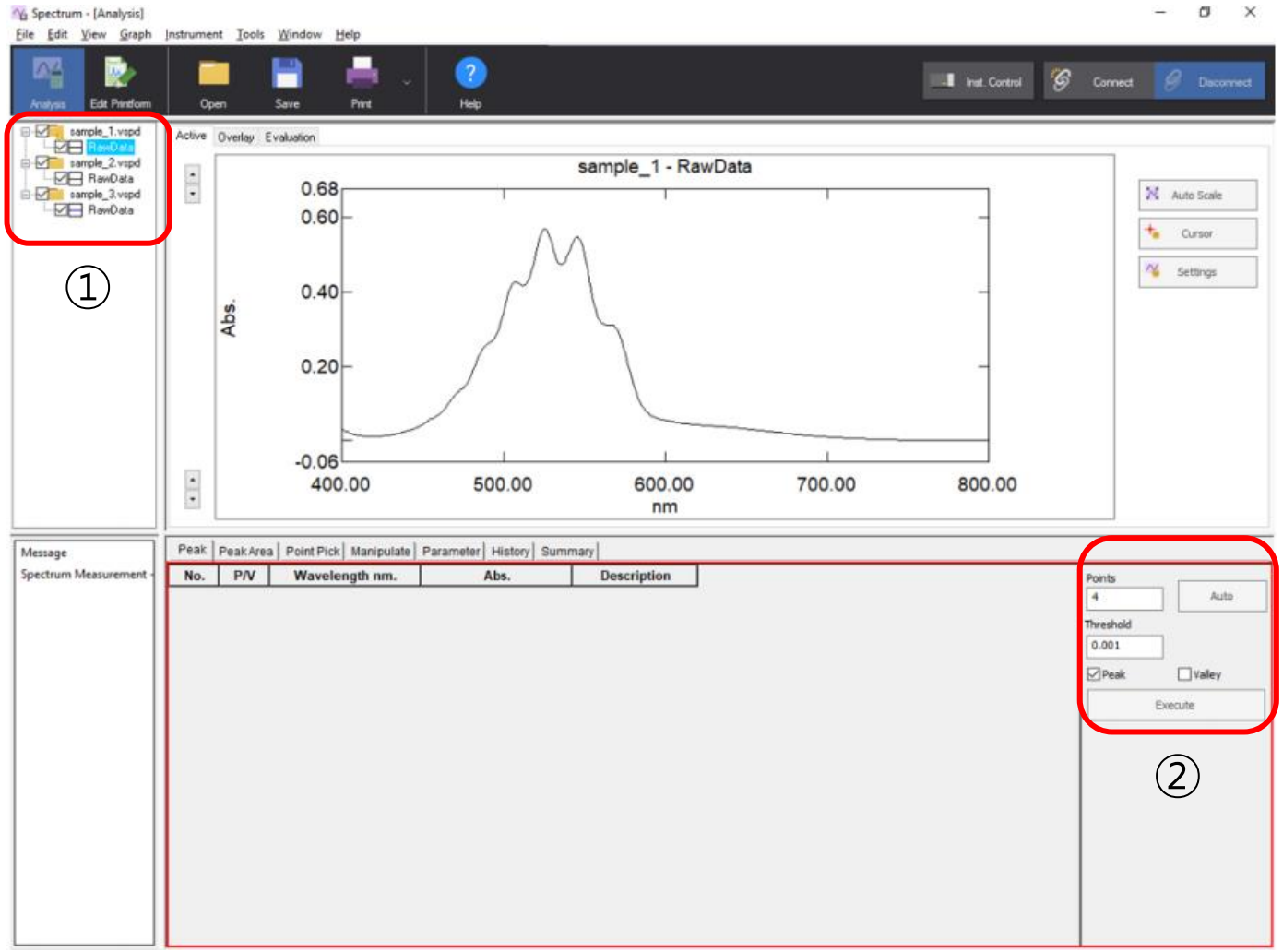


Automatically Outputting Text When Saving Data Files

[Tools] → [User Settings] → [Text Output] → [Create text file automatically when data file is saved]check

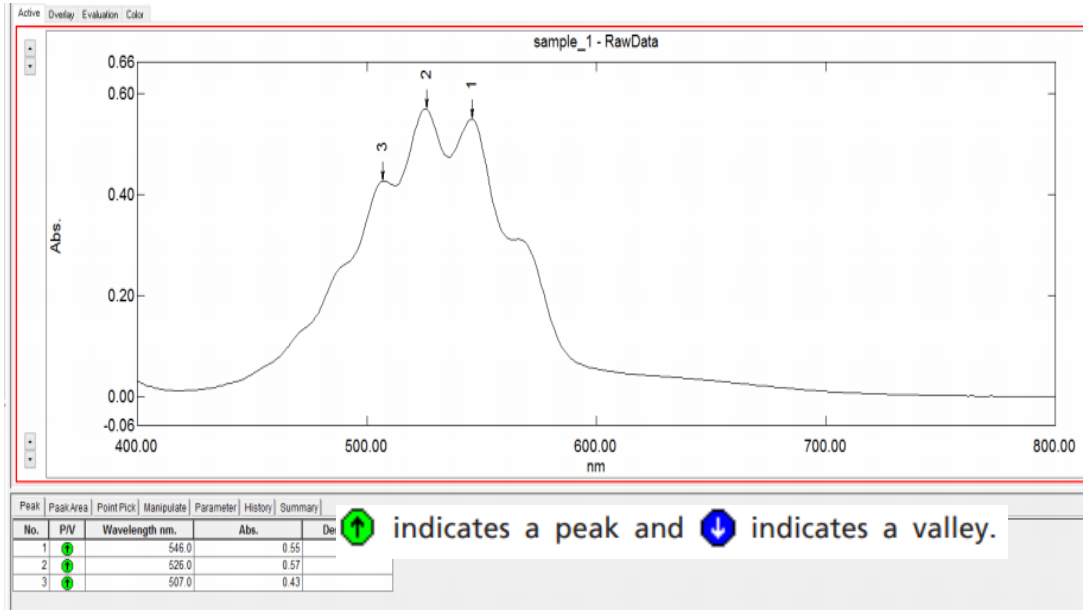


Data Processing



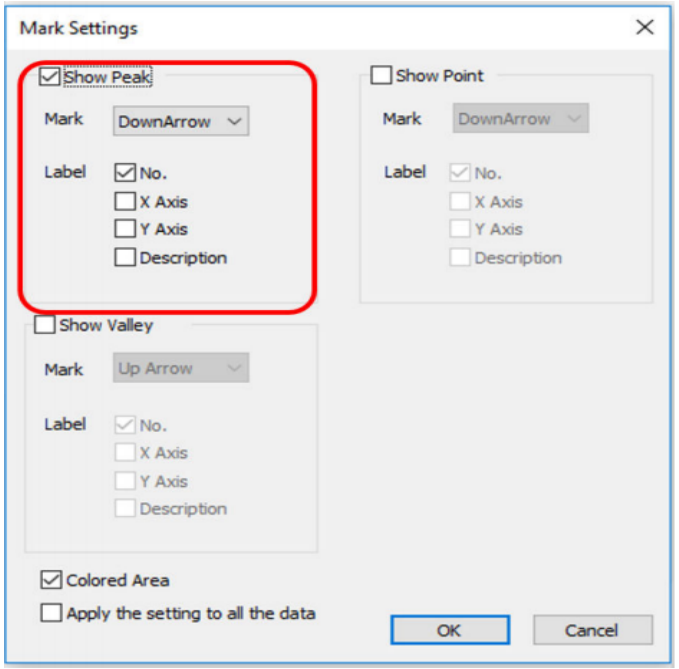
① : Sample 더블클릭으로 선택
② : Point 값 입력 → Execute

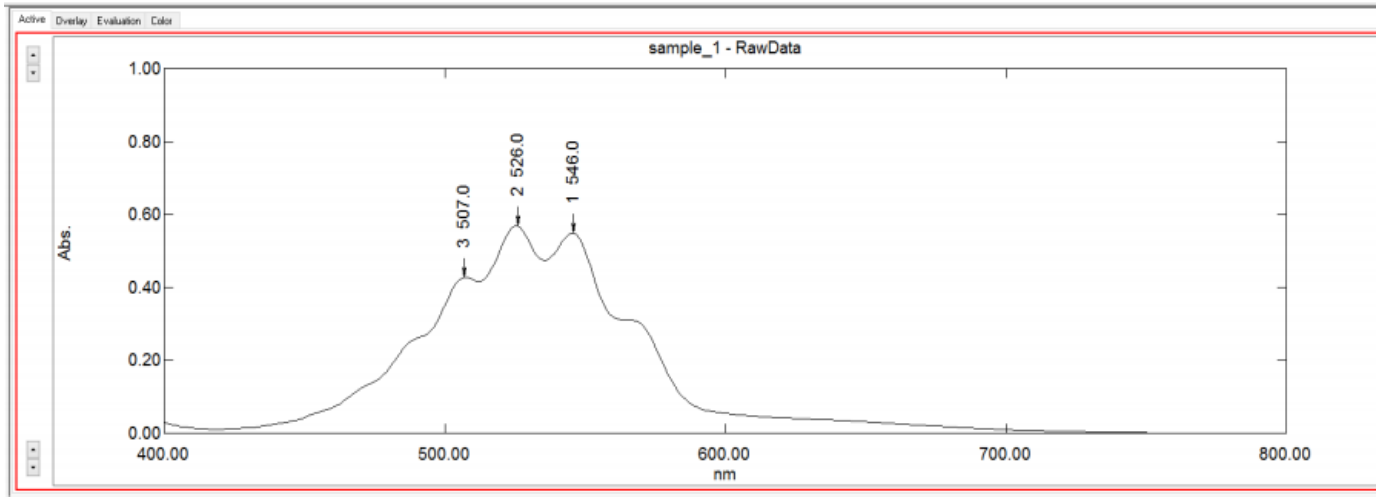
Data Processing



[Settings] → [Peak, Point Mark] click

→

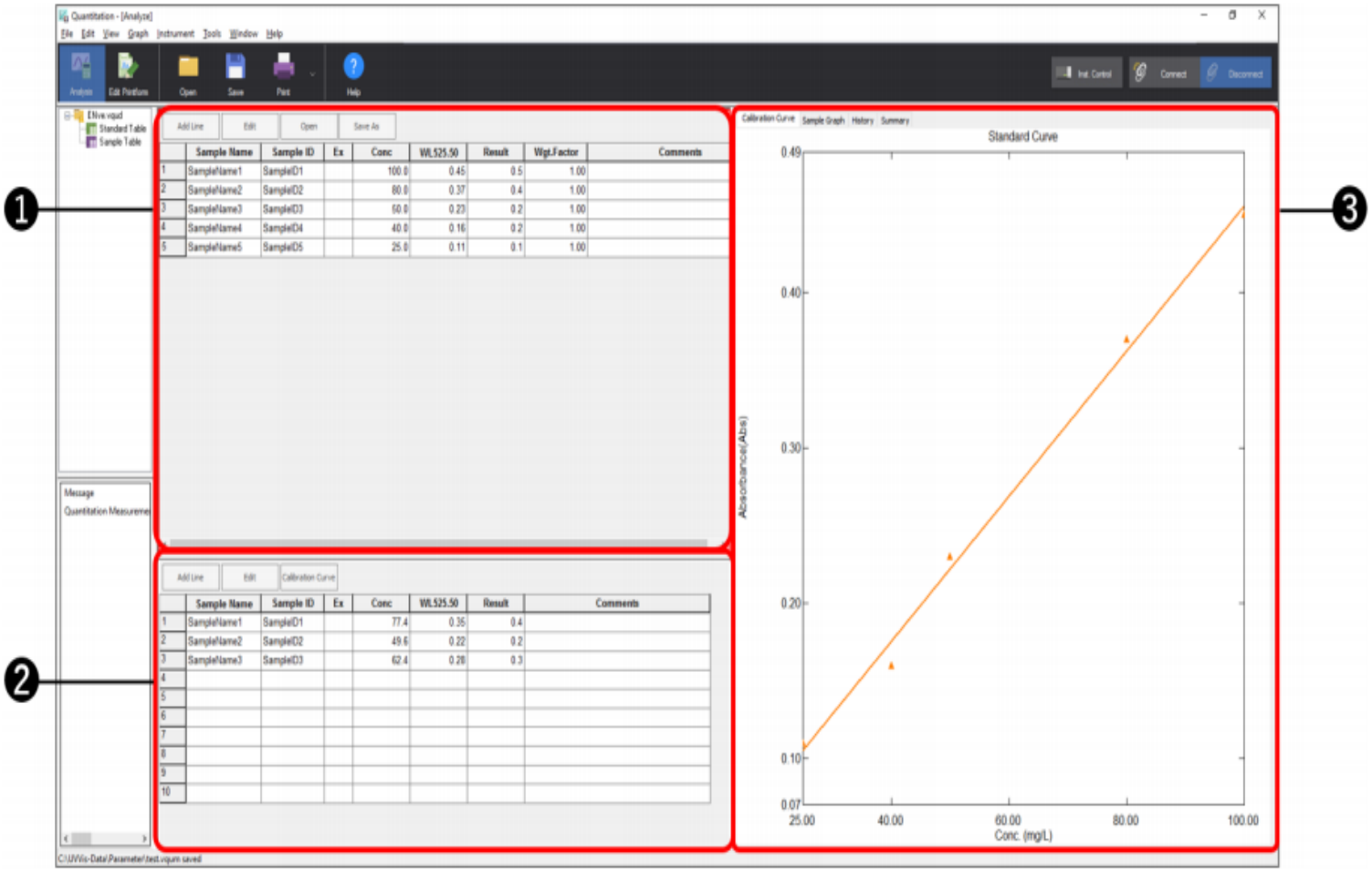




Quantitaion mode

Quantitation mode

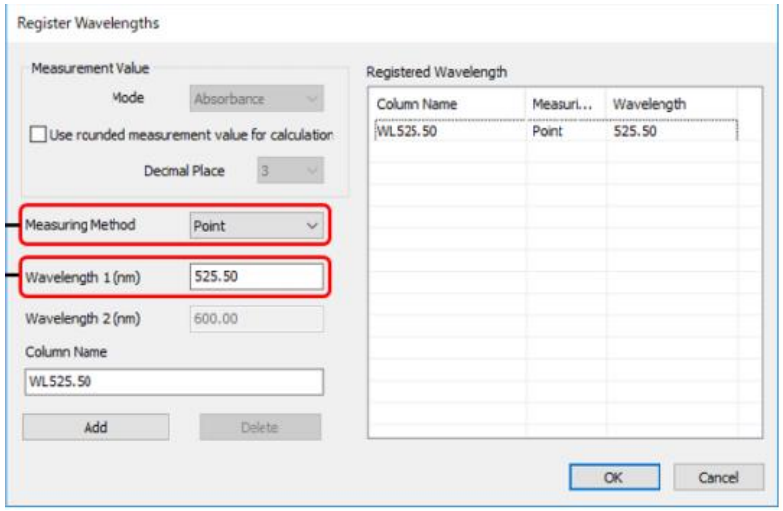
- Standard로 검량선을 작성하여 미지시료의 농도를 구하는 정량모드



① : Standard table
② : Sample table
③ : Graph view

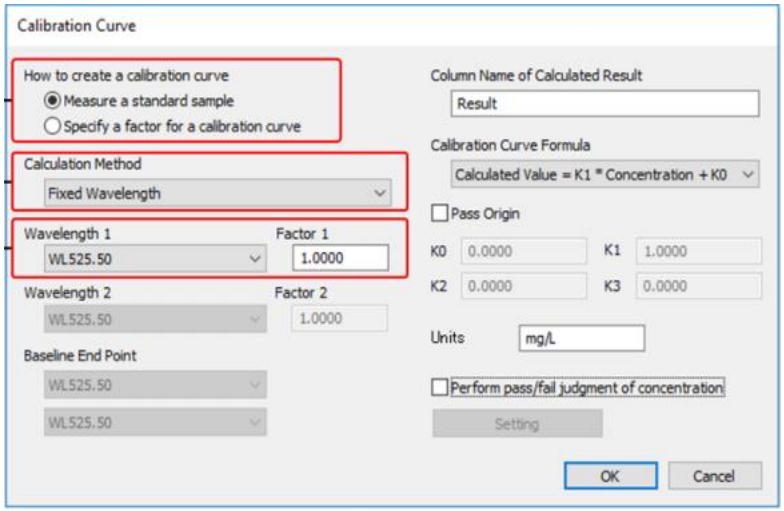
Method

①



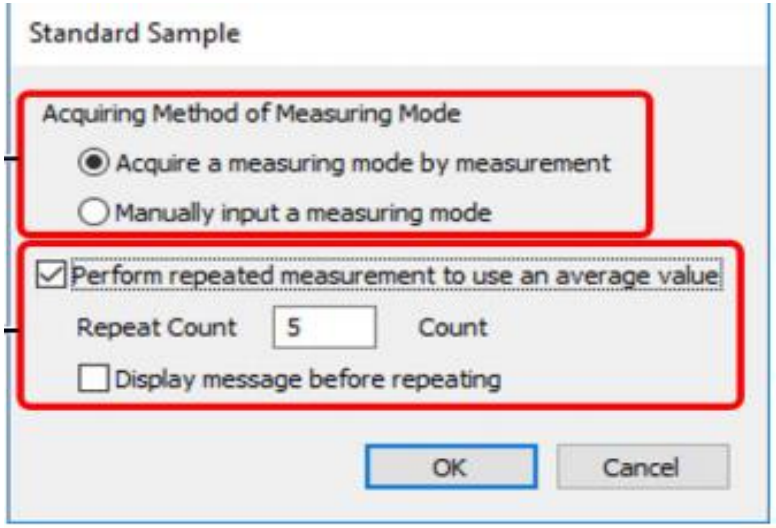
[Wavelength(nm)] 입력 후 Add 버튼 클릭 하여 Entries에 분석 파장 삽입

②



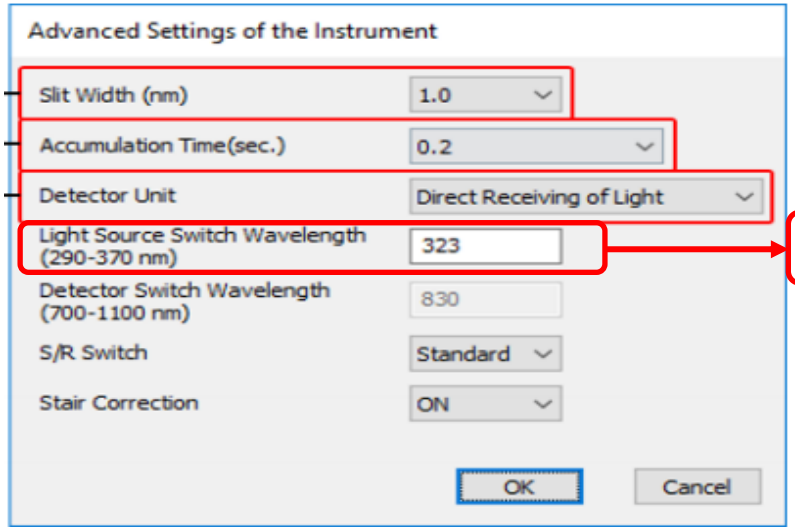
[Calculation method]선택, Unit지정, WL1에 ①에서 입력한 파장 선택

③



Sample 반복 측정 횟수 입력
(ex: 5입력 시, 5회 반복 측정 시 평균 값)

④



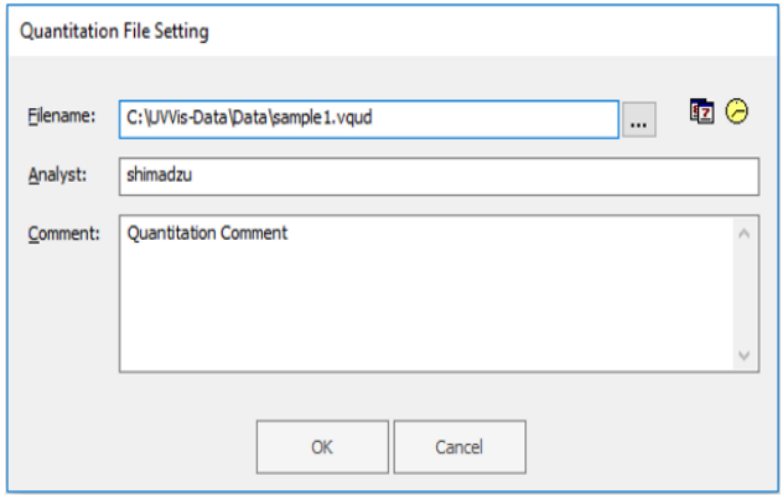
램프전환파장

[Slit width],[Accumulation time]입력 후 [OK] → Method 저장

SHIMADZU

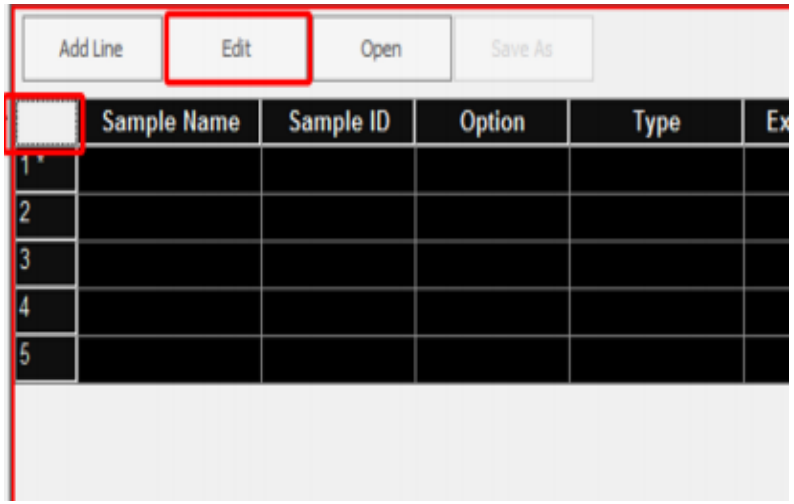
Measurement

①



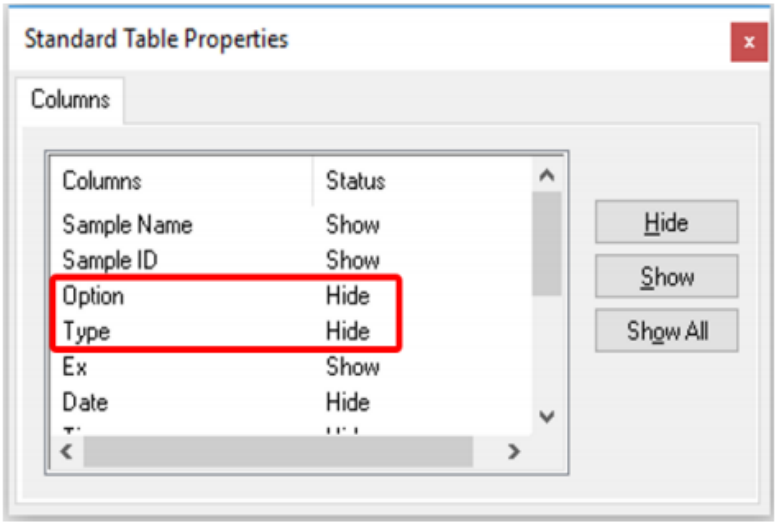
[File name] → [Edit] → 입력 후 [OK]

②



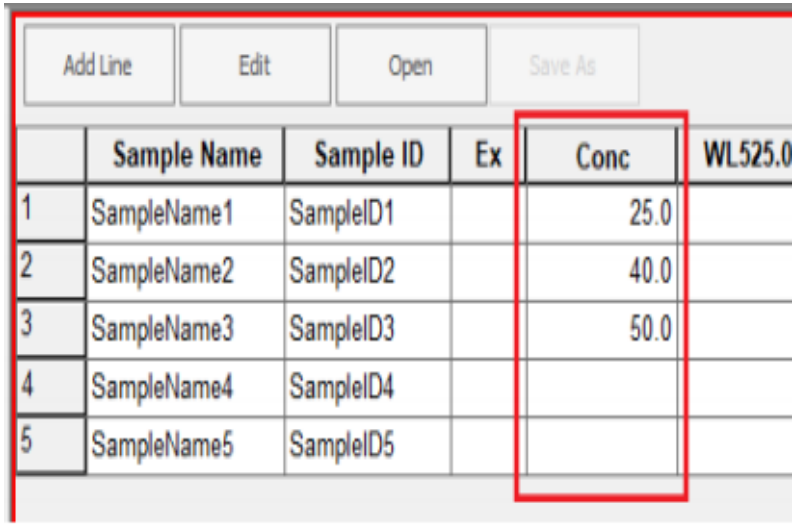
All cells select → [Edit] → Sample intormation 변경 →[OK]

③



Sample table에서 R click → [Properties] → 불필요한 column 숨김가능

④



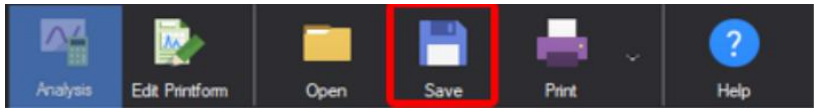
Conc 입력

SHIMADZU

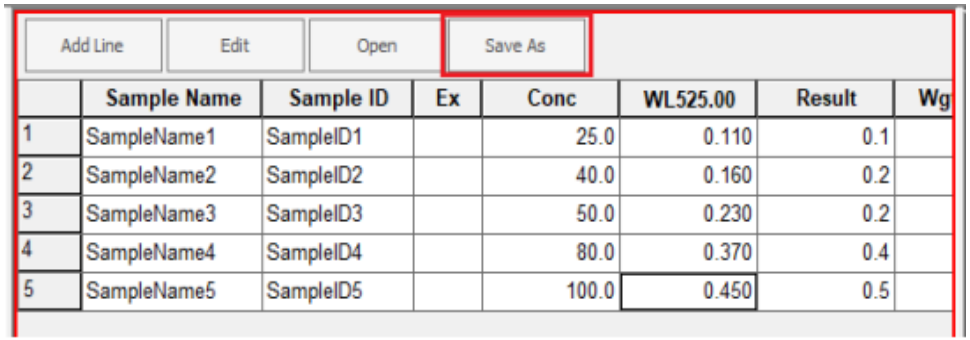
Measurement

Standard Measurement

1. Standard Table 활성화
2. [Auto Zero] 실행(해당파장에서)
3. Cell holder 앞 뒤에 모두 Blank넣기
4. [Cell Blank]실행
5. Cell holder에 Sample 넣기
   (앞: Standard solution, 뒤:Blank)
6. Click

7. 모든 standard 측정 후 [save] 

8. Calibration curve files 저장

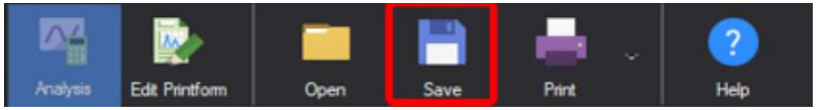


	Sample Name	Sample ID	Ex	Conc	WL525.00	Result	Wg
1	SampleName1	SampleID1		25.0	0.110	0.1	
2	SampleName2	SampleID2		40.0	0.160	0.2	
3	SampleName3	SampleID3		50.0	0.230	0.2	
4	SampleName4	SampleID4		80.0	0.370	0.4	
5	SampleName5	SampleID5		100.0	0.450	0.5	

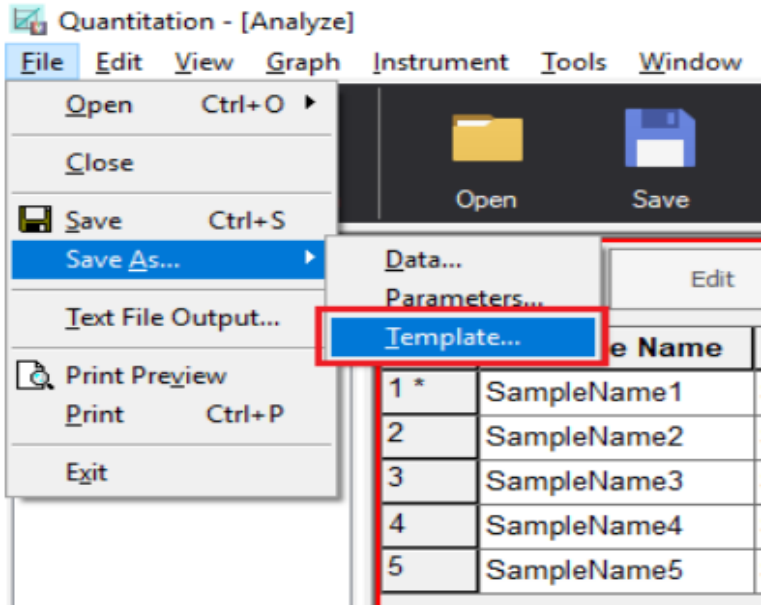
Measurement

Sample Measurement

1. Unknown sample Table 활성화
2. Sample information 입력
3. Cell holder에 Sample 넣기
   (앞: Sample, 뒤:Blank)
4. Click

5. 모든 sample 측정 후 [save]


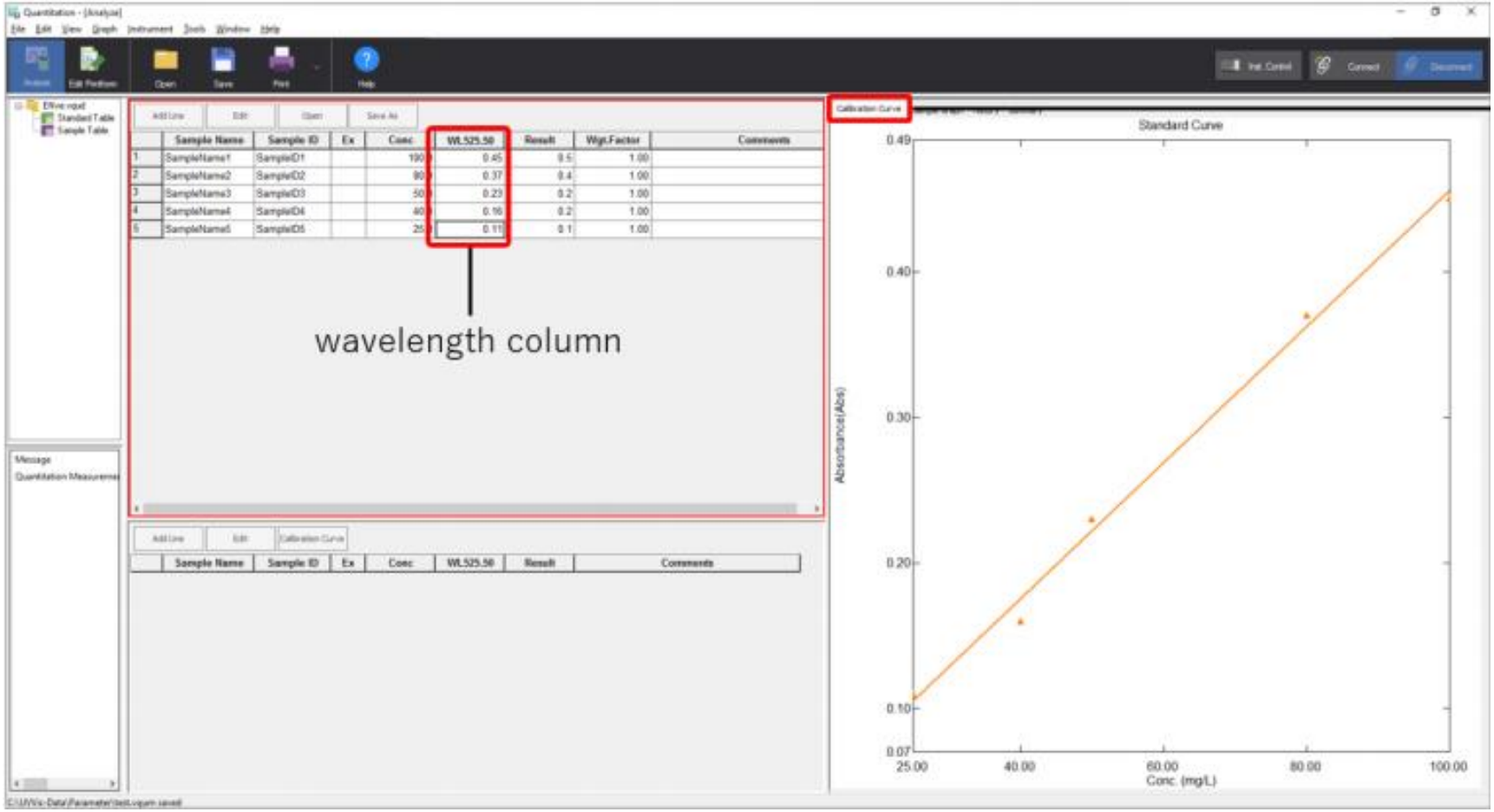
6. Template files 저장
   : [File] → [Save As] → [Template]
   → filename 입력 → [save]



Results

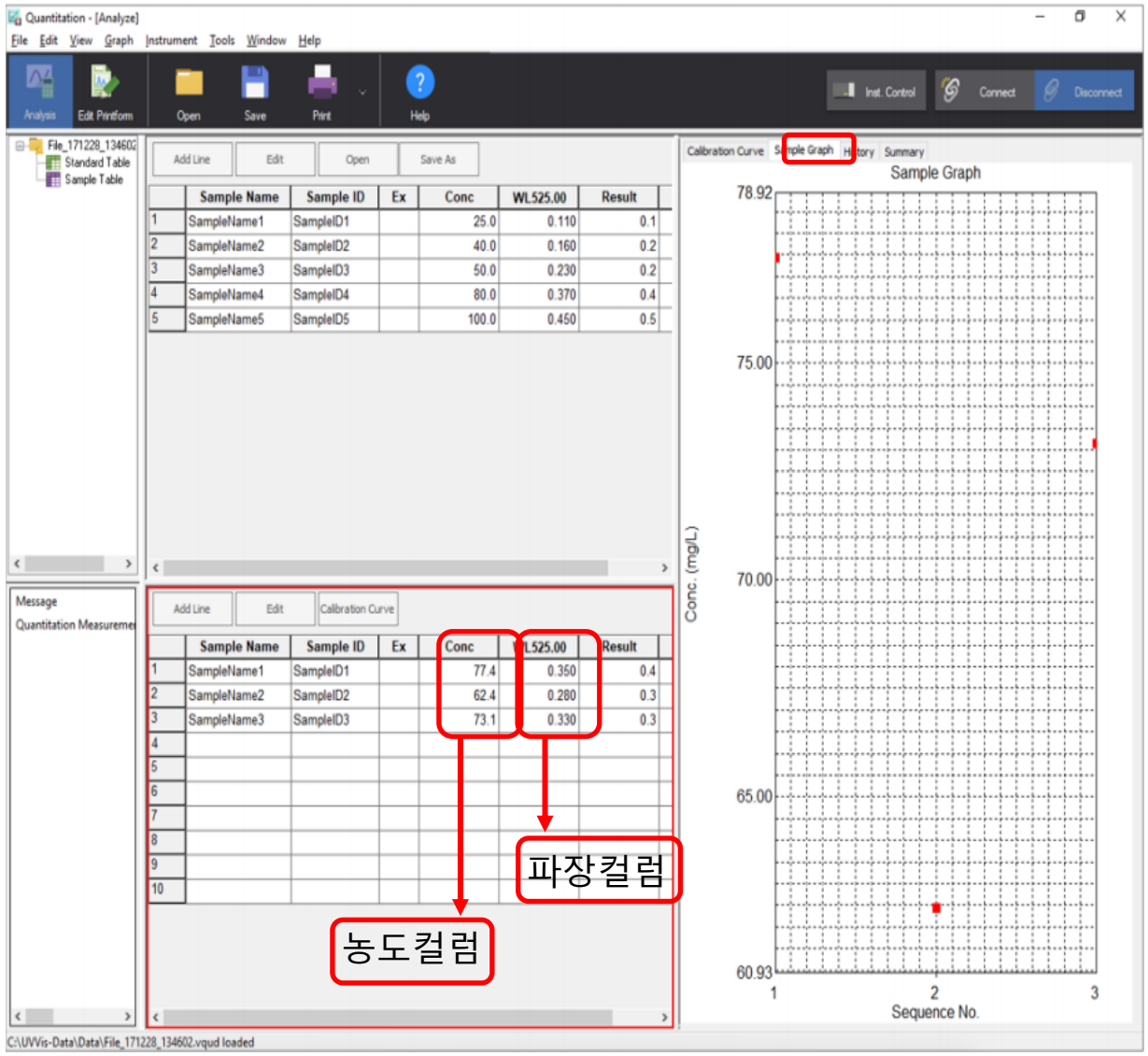
- ## Calibration Graph

  [Standard Curve]에서 오른쪽 클릭 → [Calibration Curve Statistics] → [Graph] → Equation, Correlation Coefficient r2 check



Results

Sample Graph

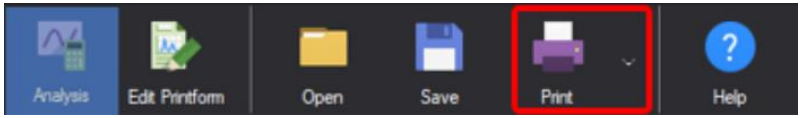


- WL column : 측정값 표시
- Conc column : 검정곡선에 대입하여 계산된 농도 표시
- Sample graph : sample의 농도가 그래프에 표시

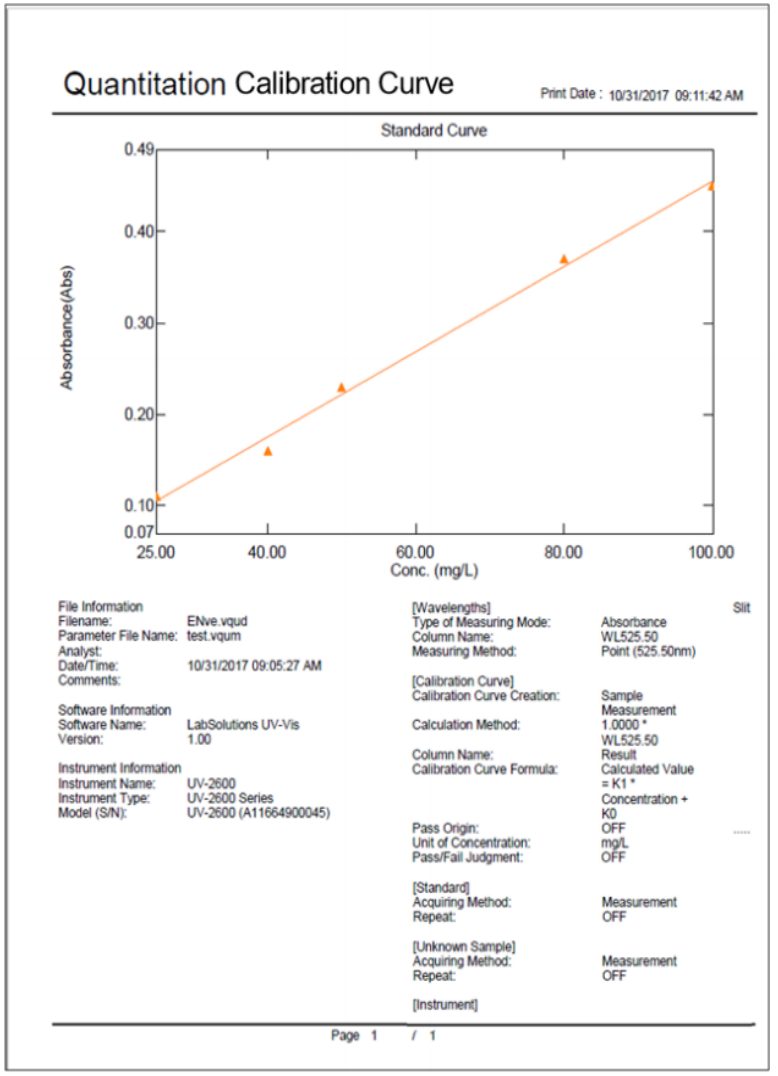
SHIMADZU

Print

- Printing (Quick Print)

1. [Print] click 

2. 설정된 template로 printform 생성

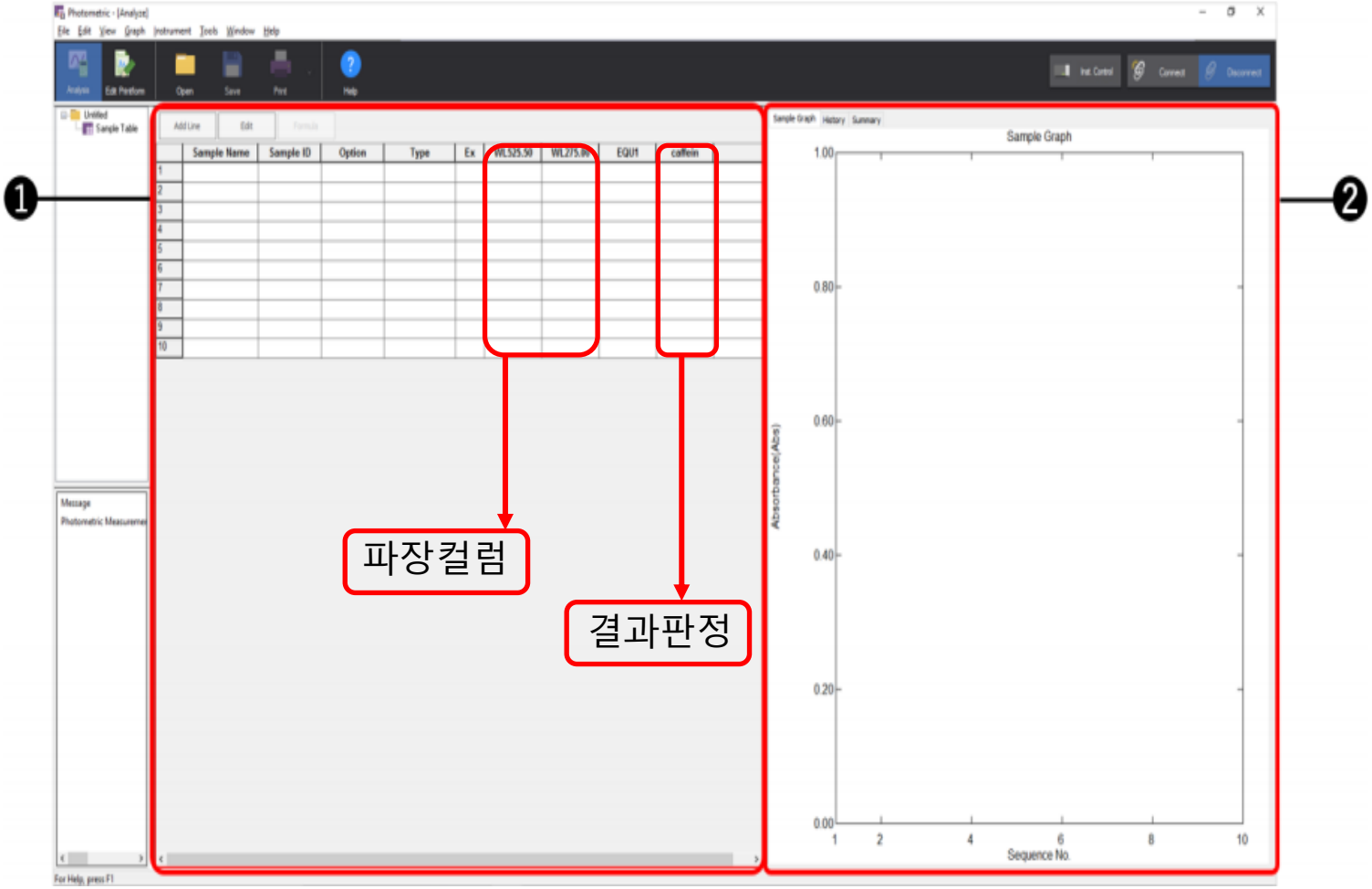


Print Example

Photometric mode

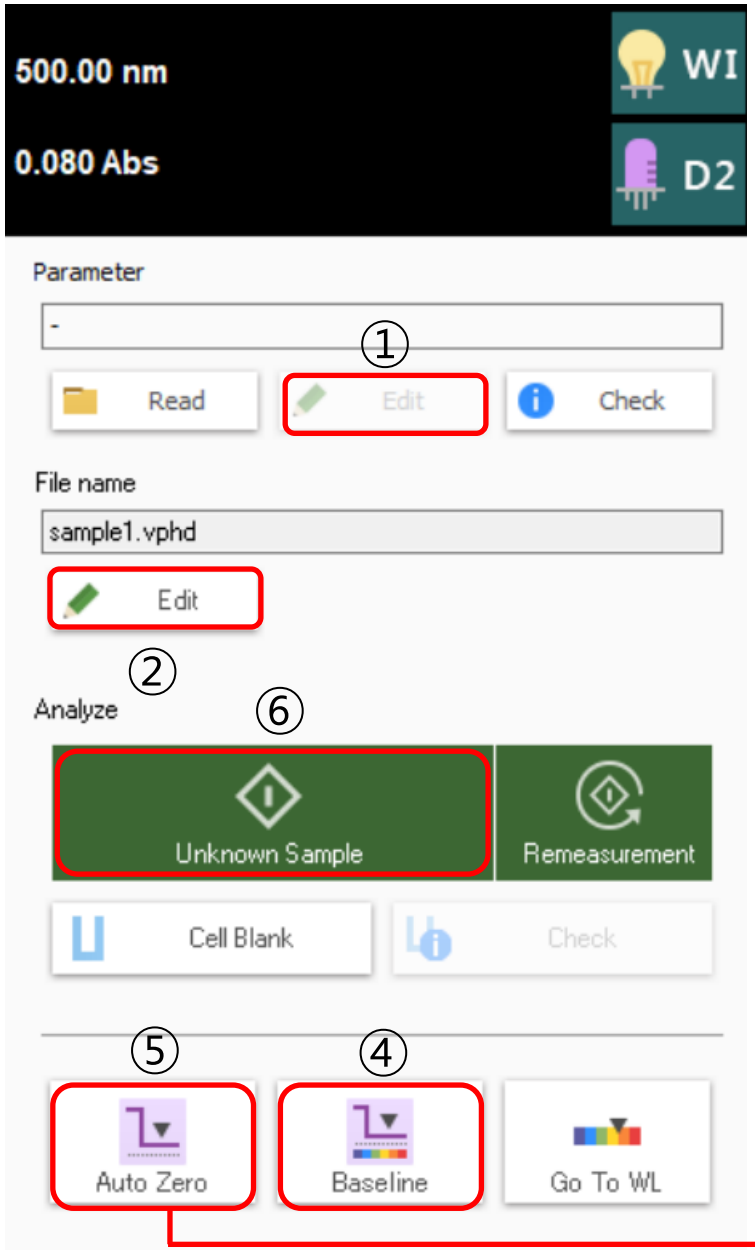
Photometric mode

- 단파장에서 흡광도 등을 측정하는데 사용(여러개의 파장 설정 가능)

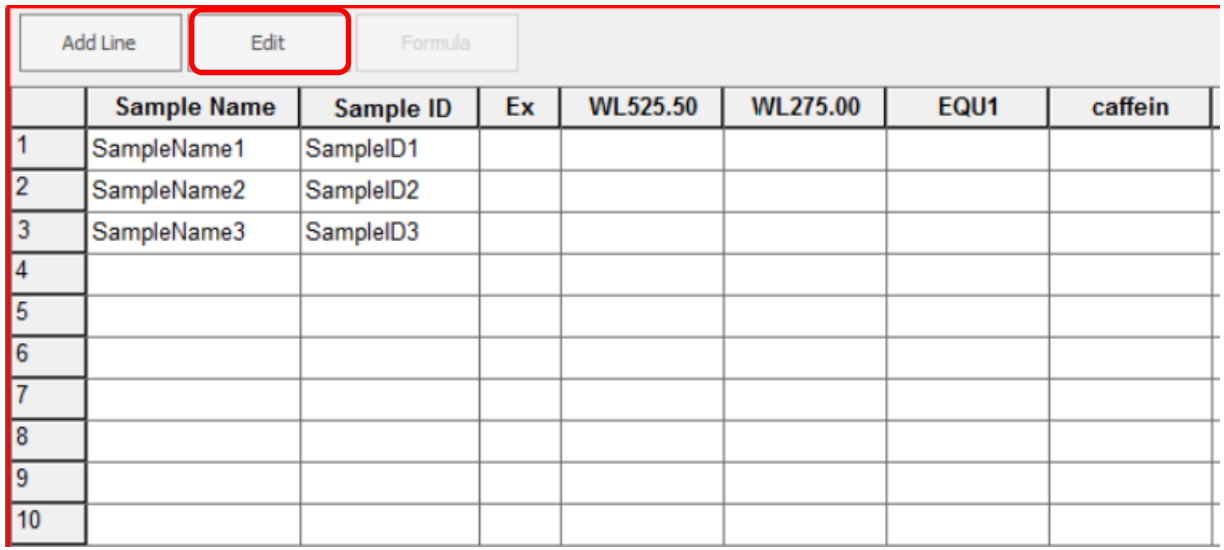


① : Sample table
② : Graph view

Method

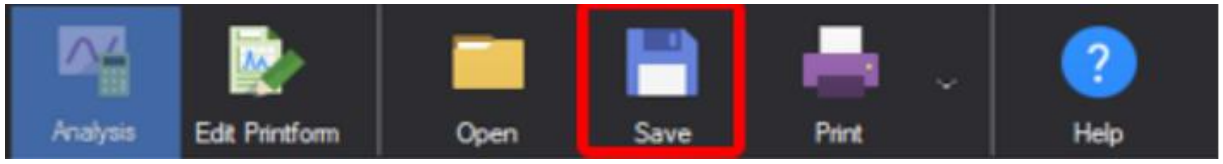


③



	Sample Name	Sample ID	Ex	WL525.50	WL275.00	EQU1	caffein
1	SampleName1	SampleID1					
2	SampleName2	SampleID2					
3	SampleName3	SampleID3					
4							
5							
6							
7							
8							
9							
10							

⑦



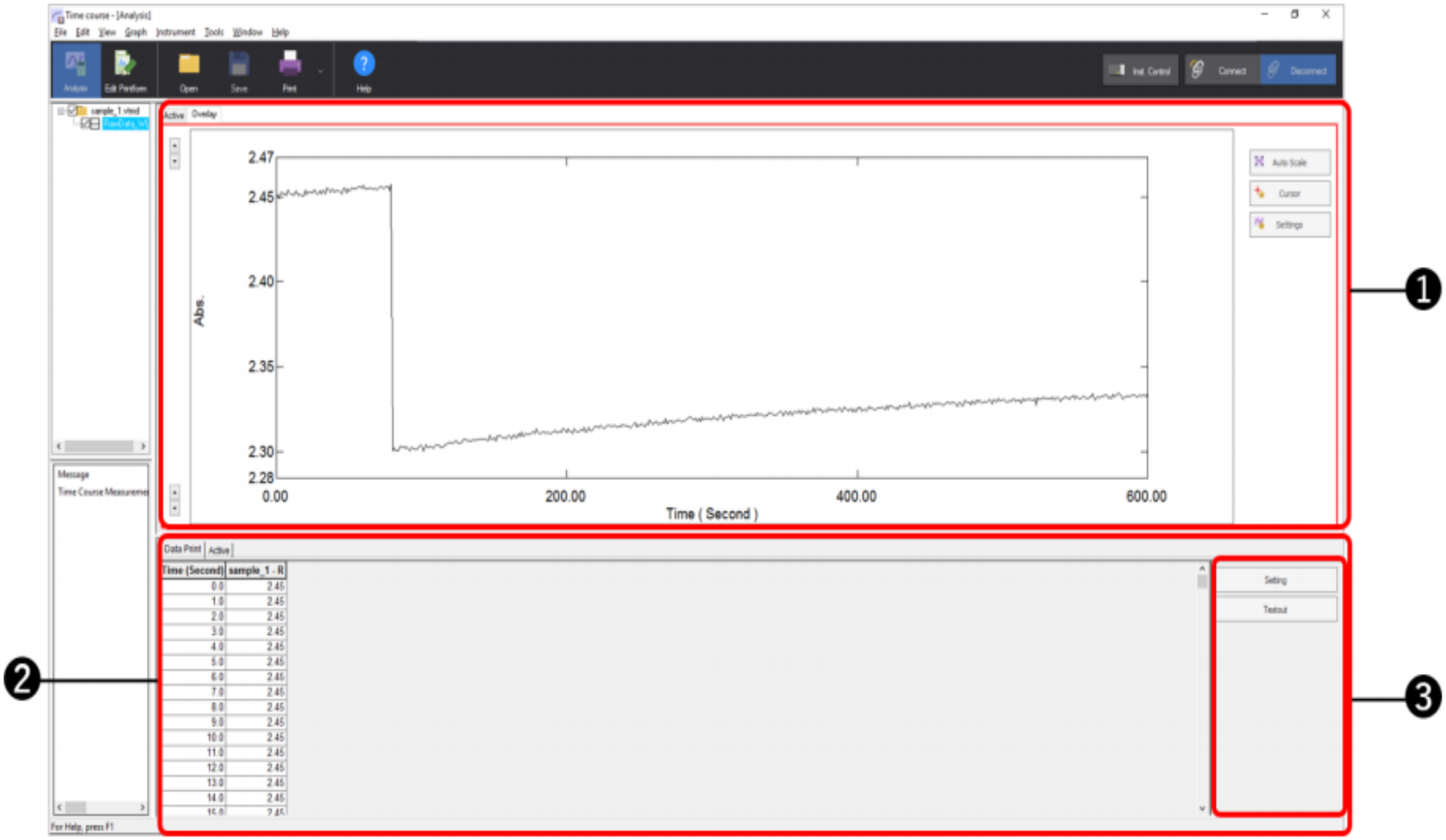
단일파장에서 측정시
AutoZero 실행

SHIMADZU

Time Course mode

Time Course mode

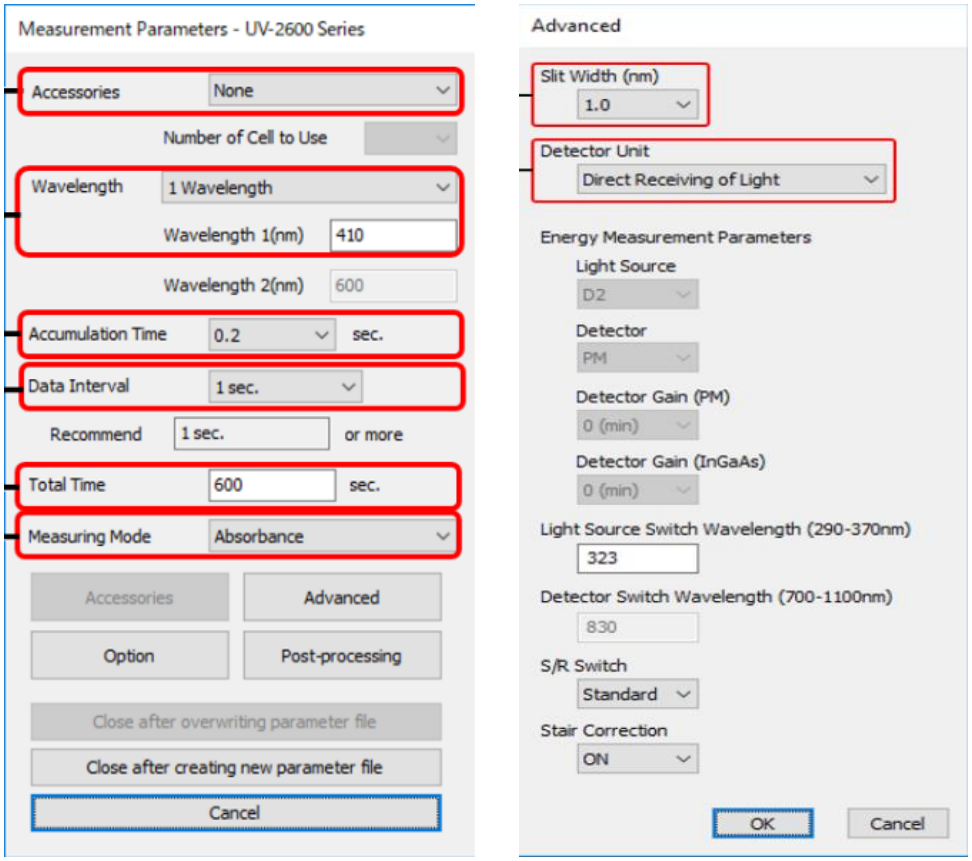
◆ 시간에 따라 변화하는 흡광도나 투과율 등을 측정하는 모드

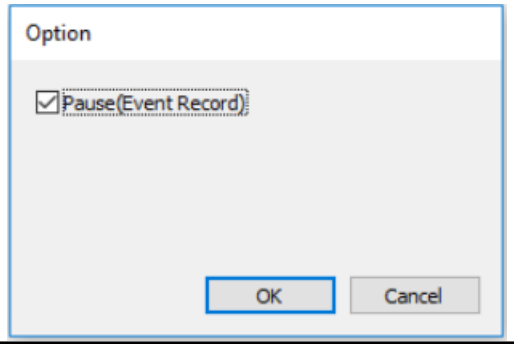


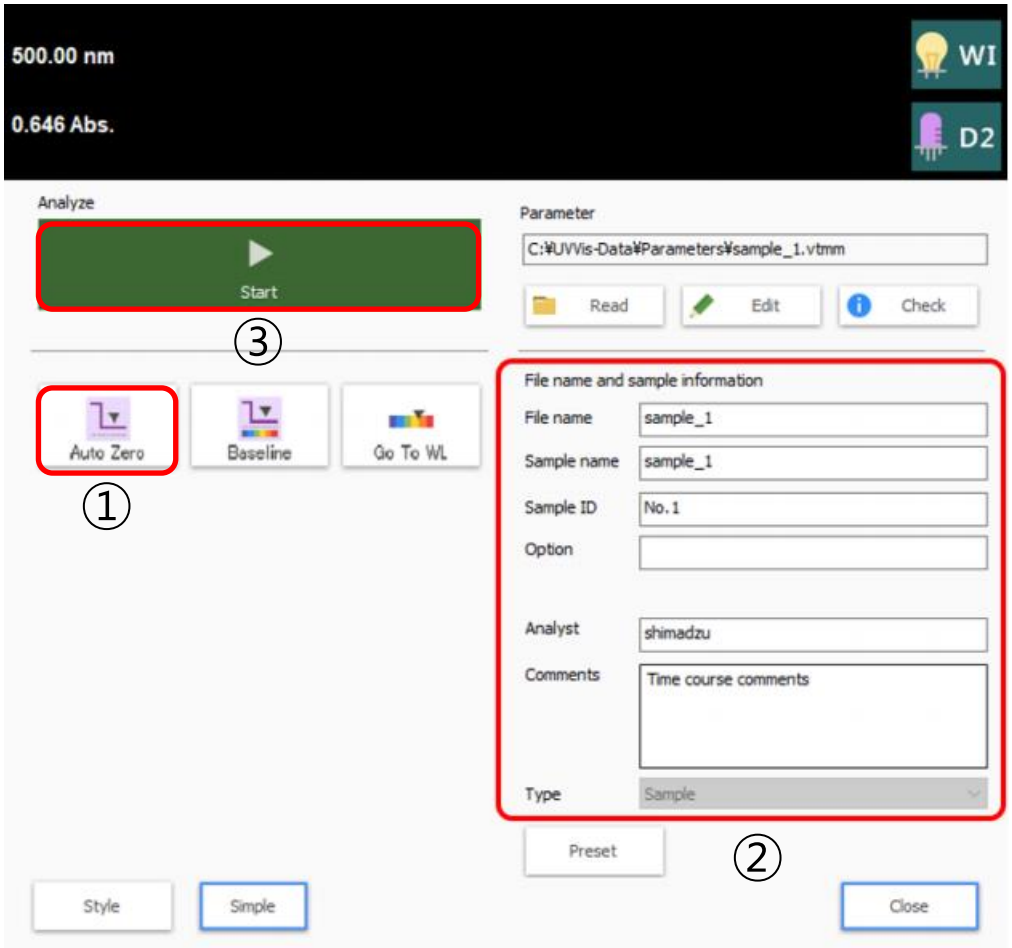
① : Graph view
② : Data view
③ : Setting area

Method

[Parameter] - [Edit] 설정값 setting



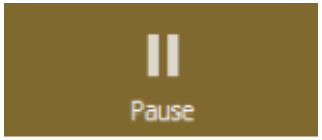




① : Auto Zero 실행
② : File name 입력
③ : Measurement Start

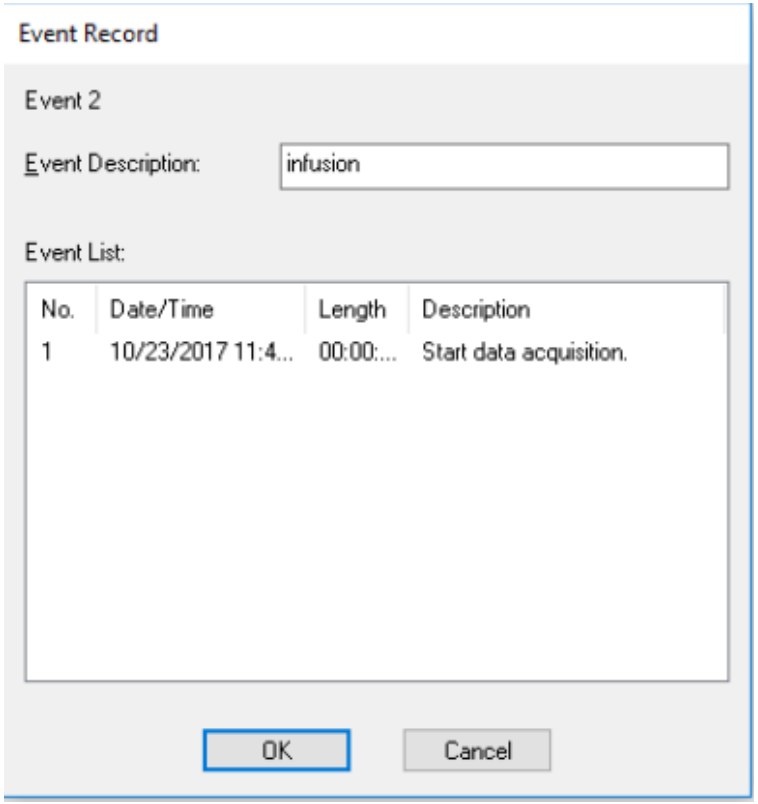
SHIMADZU

Function

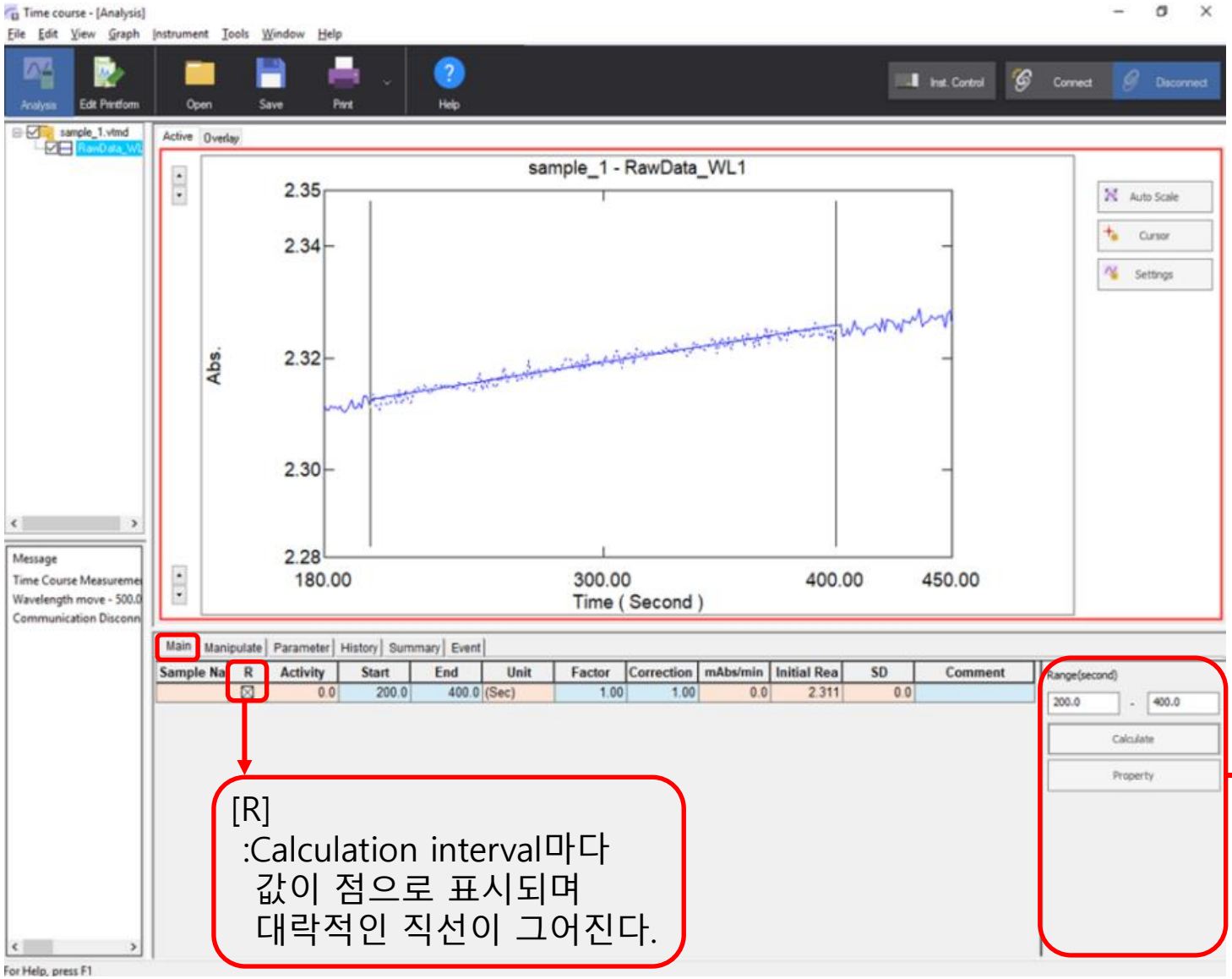
- Pause 기능 

  : 필요에 따라 진행 중인 측정을 일시 중지 할 수 있다.(ex. 시약이 추가되는 경우)

⇨ 일시 중지된 data는 저장되며, 측정 후 시간 변경내용이 표시된다.



Results



[R]
:Calculation interval마다
값이 점으로 표시되며
대략적인 직선이 그어진다.

[Range(second)
: 그래프 범위지정

SHIMADZU

Excellence in Science

For Research Use Only. Not for use in diagnostic procedures.

This presentation may contain references to products that are not available in your country.

All rights reserved. Information subject to change without notice.