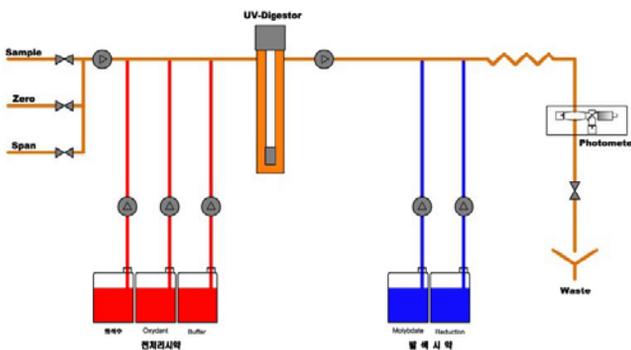


- ❖ Phosphorous occurs in natural waters and wastewaters almost solely as phosphates. These are classified as ortho-phosphates, condensed phosphates(pyro-, Meta-, and other polyphastes) and organically bounded phosphates.
- ❖ Only ortho-phosphate respond in colorimetric analysis. So all other phosphorous compounds need a preliminary hydrolysis or oxidative digestion to be converted to ortho-phosphate.
- ❖ Sample is mixed with sulfuric acid and oxidant. Mixed sample is heated in UV digester during 15min at 90-95 °C.
- ❖ Cooled treated water or ortho-phosphate sample is reacted with molybdate ions and reductant and phospho-molibdic acid is formed. It reduced to form a blue complex and measured by photometrically.
- ❖ Total phosphate analyzer is a useful tool to check the effluent quality regulation and chemical treatment control in treatment plant. Also it is used as an important indication of eutrophication in river and lake water.
- ❖ Moni PO<sub>4</sub>/TP is a unit that can measure PO<sub>4</sub>-P and TP in one unit.

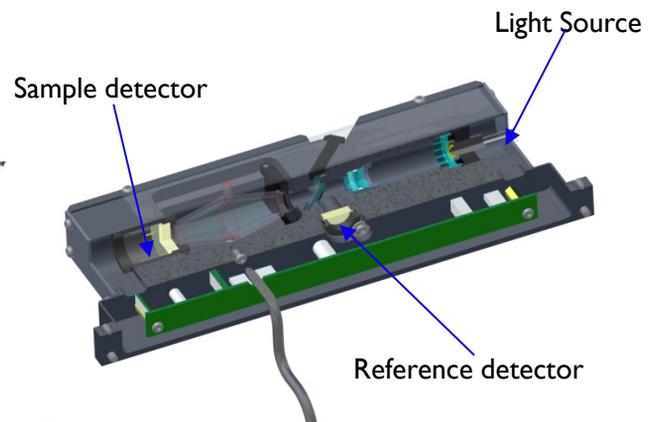


### ● Measuring unit



- ❖ Pretreatment is done by acidic oxidant in 90-95 °C heated UV reactor. All bounded phosphate is converted to ortho-phosphate during this step.
- ❖ Phosphate measurement is done by molybdenum blue or yellow method. And depend on the measuring range, we can use 650nm or 880nm.
- ❖ As a reductant, Ascorbic acid or methol is used for color development.
- ❖ Depend on the sample condition, we can adapt pre heating procedure and it gives minimized analysis cycle.

### ● Single wavelength Photometer



- ❖ Dual beam path system is adapted to compensate automatically using reference and sample beam separately. Same light source is used and changes of light intensity is automatically corrected and it gives optimized stability and accuracy.
- ❖ Using single line spectrum LED(645 or 880nm), system is simplified. By using long life LED source, system gives best stability and accuracy in temp controlled photo sensor. Moni system is working as non moving part photometer.
- ❖ By using state of the art photometer, we can control idle and working mode even in photometer itself. So the lamp lifetime is no limited during several years.

### ● Specification

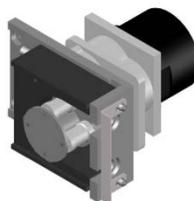
Measuring Method	Molybdenum Blue method( or Yellow method)
Measuring Parameter	Ortho-phosphate and Total phosphate (Selectable)
Measuring Range	0~1.0/ 0~2.0/ 0~5.0 mg/L (range selectable)
Accuracy/Repeatability	Lower than ±3%
Detection Limit	0.001mg/L(at 880 nm), 0.004 mg/L(at 650 nm)
Analysis interval/Channel	30min(TP), 15min(PO <sub>4</sub> -P),TP and PO <sub>4</sub> -P(30min) / Expandable up to 6channel
Detector system	880nm Dual Beam Photometer
Control system	PCI04,AMD 500 MHz
Display	Touch Screen , LCD
Communication	4~20mA DC, RS232, LAN, USB, Modem(optional)
Voltage	Free voltage, Power consumption can be minimized by selecting sleeping and working mode
Calibration	Automatic, Manual, random setting of calibration interval, 2Point calibration
Measuring interval	Cyclic
Size and Protection	1170x600x400(HxWxD) & IP65, IP54, IP21
Additional Function	Waste separation,Additional heating system

### ● UV Reactor design



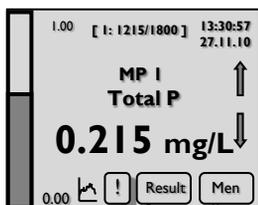
- Non personalized digestion
- K<sub>2</sub>S<sub>2</sub>O<sub>8</sub> reaction in sulfuric acid
- Continuous air bubble maximize mixing efficiency and energize the UV reaction to sample by sample circulating.
- Mirrored reactor gives maximum UV efficiency.
- Temperature controlled at 90-95 °C and it minimize the sample lost during digestion.
- UV detector function monitor UV lamp and reactor status.

### ● Pump design



- Minimized pulsation 4roller pump gives stable chemical and sample transportation to give measurement stability.
- Speed controlled motor minimize number of sample pump tube by using same size.
- One-touch tube replacement possible
- Bi-directional pumping give injection and discharge also.
- Dual or 3 channel head acceptable.
- Sealed electronics to protect leakage.

### ● Controller / Display & Software



- PCI04 586 Pentium or higher
- Touch Screen Display: Graphic and Numerical Display
- Data saving by using internal memory.
- Remote control by RS232, LAN, Modem
- 4(Max. 12ea) Relay contacts
- External sensor and Analyzer interface by CAN Bus
- Filtration control and external pump control possible
- USB download and Upgrade possible
- Standard protocol by each countries.
- Diagnostics program
- Option: Modem (GPRS)