



## DIGITAL SPECTROPHOTOMETER 104

## DIGITAL SPECTROPHOTOMETER 105



Micro-controller Based



Manual

### SYSTRONICS (INDIA) LIMITED (SYSTRONICS DIVISION)

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MANUFACTURERS OF ELECTRONIC INSTRUMENTS AND SCIENTIFIC EQUIPMENTS.

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LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.



## DIGITAL SPECTROPHOTOMETER 104



## DIGITAL SPECTROPHOTOMETER 105



**SYSTRONICS VISIBLE SPECTRO-104-105** sets new standards in accuracy and reliability. Wide spectral coverage and high resolution is achieved by using a powerful light source and a grating-based monochromator. A conveniently placed control enables the user to quickly orient the grating to provide monochromatic light of desired wavelength.

The electronic processing circuits and power supplies are solid-state / LSI-based to ensure high accuracy, stability and long life.

SPECIFICATIONS 104		105
<b>Wavelength Range</b>	340 to 960 nm	340 to 960 nm
<b>Wavelength Accuracy</b>	±5 nm	±5 nm
<b>Wavelength Readout</b>	5 nm	5 nm
<b>Wavelength Display</b>	Dial	Dial
<b>Spectral Bandwidth</b>	10 nm	10 nm
<b>Photometric Accuracy</b>	±0.005 Abs at 1.000 Abs	±0.005 Abs at 1.000 Abs
<b>Photometric Resolution</b>	0.1%T, 0.001 Abs	0.1%T, 0.001 Abs
<b>Photometric Readout</b>	4 digit Seven Segment LED	4 digit Seven Segment LED
<b>Grating</b>	600 lines/mm	600 lines/mm
<b>Source</b>	Tungsten halogen lamp	Tungsten halogen lamp
<b>Detector</b>	Wide Range Silicon Photodiode	Wide Range Silicon Photodiode
<b>Sample Holder</b>	Single position 10 mm cuvette holder	Single position 10 mm cuvette holder
<b>Min. Sample Volume</b>	1 ml in 4 ml cuvette	1 ml in 4 ml cuvette
<b>Measuring Mode</b>	Auto a) %Transmittance b) Absorbance c) Concentration	Manual a) %Transmittance b) Absorbance c) Concentration
<b>Power</b>	230V, ±10%, 50Hz	230V, ±10%, 50Hz
<b>Dimension</b>	420(W) X 310(D) X 125(H) mm	420(W) X 310(D) X 125(H) mm
<b>Weight</b>	6.5 Kg (Approx)	6.5 Kg (Approx)
<b>Accessories</b>	Two Glass Cuvettes	Two Glass Cuvettes
<b>Optional Accessories</b>	Single Position 20/50 mm Cuvette Holder (Factory Installed)	Single Position 20/50 mm Cuvette Holder (Factory Installed)

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# UV - VISIBLE SPECTROPHOTOMETER

## 108

0.5nm Bandwidth  
PMT Based



## 118

2nm Bandwidth  
Si-Photodiode



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### SYSTRONICS UV - VISIBLE SPECTROPHOTOMETER 108

(0.5nm bandwidth) is a high resolution, reliable and versatile, single beam, manual instrument for both qualitative and quantitative absorption spectrophotometric studies in Industrial, Agricultural, Chemical, Medical, Bio-technological, Forensic, Teaching and Research Institutions.

The wavelength range from 200 to 900 nm is obtained by a 1200 grooves/mm grating with Czerny - Turner mount. Sine bar linkage is used to get accurate wavelength calibration ( $\pm 0.5$  nm ) on an electronic digital counter with a readability of 0.1 nm intervals. Fused silica deuterium lamp and tungsten halogen sources are used to cover the wavelength range. High sensitivity, wide range, low noise photomultiplier tube (PMT) is used as the detector. The grating spectral order interferences and stray light are eliminated by a set of filters mounted on a filter wheel.

This ensures almost constant throughput over the entire range and combined with fixed slit configuration leads to a constant resolution/constant noise spectrum. The photometric readings of percent transmittance, absorbance and concentration are displayed on an electronic digital display.

### SYSTRONICS UV - VISIBLE SPECTROPHOTOMETER 118

(2nm bandwidth) is a good resolution, reliable and versatile, single beam, manual instrument for both qualitative and quantitative absorption spectrometric studies in Industrial, Agricultural, Chemical, Teaching and Research Institutions.

The wavelength range from 200 to 1000 nm is obtained by a 1200 grooves/mm grating with Czerny - Turner mount. Sine bar linkage is used to get accurate wavelength calibration ( $\pm 1$  nm) on an electronic digital counter with a readability of 0.1 nm intervals. Fused silica deuterium lamp and tungsten halogen sources are used to cover the wavelength range. High sensitivity, wide range, Silicon photo diode is used as the detector. The grating spectral order interferences and stray light are eliminated by a set of filters mounted on a filter wheel.

This ensures almost constant throughput over the entire range and combined with fixed slit configuration leads to a constant resolution/constant noise spectrum. The photometric readings of percent transmittance, absorbance and concentration are displayed on an electronic digital display.

SPECIFICATIONS	108	118
Optics	Complete mirror optics with 1200 grooves/mm grating Czerny-Turner mount	Complete mirror optics with 1200 grooves/mm grating Czerny-Turner mount
Wavelength Range	200 to 900 nm (with Spl. PMT) 200 to 700 nm (with Std. PMT)	200 to 1000 nm
Readout	Electronic Digital counter 0.1 nm increments	Electronic Digital counter 0.1 nm increments
Accuracy	$\pm 0.5$ nm	$\pm 1$ nm
Repeatability	$\pm 0.2$ nm	$\pm 0.5$ nm
Spectral Bandwidth	0.5 nm (constant throughout the spectral range)	2 nm (constant throughout the spectral range)
Photometric Range (Digital)	0 to 2.000 Abs 0-1999 concentration units 0-100% transmission	0 to 2.000 Abs 0-1999 concentration units 0-100% transmission
Accuracy	$\pm 0.005$ Abs at 1 Abs	$\pm 0.005$ Abs at 1 Abs
Repeatability	$\pm 0.002$ Abs at 1 Abs	$\pm 0.002$ Abs at 1 Abs
Stray Light	Less than 0.1% at 220 nm & 370 nm	Less than 0.1% at 220 nm & 370 nm
Source	<ul style="list-style-type: none"><li>• Tungsten-Halogen lamp</li><li>• Deuterium lamp</li></ul>	<ul style="list-style-type: none"><li>• Tungsten-Halogen lamp</li><li>• Deuterium lamp</li></ul>
<b>Detector</b>	<b>Wide range, low noise PMT</b>	<b>Wide range, Solid state, Silicon Photodiode</b>
Filters	Built - in filter wheel with four filters	Built - in filter wheel with four filters
Sample Holder	Manual 4-position sample changer for 10mm cuvettes (cells)	Manual 4-position sample changer for 10mm cuvettes (cells)
Power	230V $\pm$ 10%, 50Hz, 200VA	230V $\pm$ 10%, 50Hz, 200VA
Dimensions	800 (W) x 400 (D) x 300 (H) mm	800 (W) x 400 (D) x 300 (H) mm
Weight	32 kg. (Approx)	32 kg. (Approx)
Accessories	2 matched 10mm path length quartz cuvettes (cells)	2 matched 10mm path length quartz cuvettes (cells)
Optional Accessories	Single Position 20/50 mm Cuvette Holder (Factory Installed)	Single Position 20/50 mm Cuvette Holder (Factory Installed)

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## PHOTOELECTRIC COLORIMETER-112

- %T & ABS (O.D.)
- 1ml Sample volume
- Display : 3 Digit LED
- Eight filters on a turret to cover 400-700 nm.



## PHOTOELECTRIC COLORIMETER-115

- %T, ABS, CONC and K-factor
- 1ml Sample volume
- Display : LCD 2 Line 16 Character
- Eight filters on a turret to cover 400-700 nm.

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**SYSTRONICS** Photoelectric Colorimeters 112 & 115 are versatile models which can effectively serve both the Chemical and the Clinical groups in fields such as Biochemistry, Agriculture, Veterinary, Dyestuff & Pharmaceutical. They can measure Percentage Transmittance (%T) and Absorbance (Abs). Improved optics enable measurement with only 1ml solution. A wide range of wavelength, 400 to 700 nm, is covered with the help of 8 optical filters mounted on a turret.

**Additional** features of 115 are measurement of concentration (Conc), K-Factor & accuracy to 3 decimals.

SPECIFICATIONS	115	112
Wavelength Range	400-700 nm with 8 optical filters	400 nm to 700 nm with 8 optical filters
Filter's peak wavelength (typical)	420 nm, 440 nm, 490 nm, 520 nm, 540 nm, 570 nm, 600 nm, 700 nm.	420 nm, 440 nm, 490 nm, 520 nm, 540 nm, 570 nm, 600 nm, 700 nm.
Measuring Modes	%T, Abs, Conc & K-factor	%T & Abs
Photometric Resolution	0.1% T, 0.001 Abs upto 1.999 Abs (O.D.)	1% T & 0.01 in Abs upto 1.99 Abs (O.D.)
Display	2 Line 16 Character LCD	3-Digit LED
K-Factor Range	0 to 1999	
Concentration	0 to 2 times the absorbance	
Memory	Data can be Stored in memory	
Sample Volume	1ml in 4ml Test tube/Cuvette	1ml in 4ml Test tube
Source	White LED	White LED
Detector	Hermetically Sealed photodiode	Hermetically Sealed photodiode
Printer Port	Epson compatible 80 column D.M. Printer	
Power	230V $\pm$ 10%, 50 Hz	230V $\pm$ 10%, 50 Hz
Dimension	160 (W) X 200 (D) X 100 (H) mm	160 (W) X 200 (D) X 100 (H) mm
Weight	1.5 Kg (Approx)	1.5 Kg (Approx)
Accessories	a) Four test tubes b) Two Glass Cuvettes	a) Four test tubes



#### 115 / 112 use 8 filters with these characteristics

FILTER	PEAK (nm)	PASSBAND (nm)	COLOUR
	420	380-510	Violet
	440	400-530	Blue
	490	460-540	Blue/Green
	520	490-560	Green
	540	510-590	Green/Yellow
	570	570-590	Yellow
	600	570-700	Orange
	720 and above	630 and above	Red and above



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## PHOTOELECTRIC COLORIMETER-112

- %T & ABS (O.D.)
- 1ml Sample volume
- Display : 3 Digit LED
- Eight filters on a turret to cover 400-700 nm.



## PHOTOELECTRIC COLORIMETER-115

- %T, ABS, CONC and K-factor
- 1ml Sample volume
- Display : LCD 2 Line 16 Character
- Eight filters on a turret to cover 400-700 nm.

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**Additional** features of 115 are measurement of concentration (Conc), K-Factor & accuracy to 3 decimals.

SPECIFICATIONS	115	112
Wavelength Range	400-700 nm with 8 optical filters	400 nm to 700 nm with 8 optical filters
Filter's peak wavelength (typical)	420 nm, 440 nm, 490 nm, 520 nm, 540 nm, 570 nm, 600 nm, 700 nm.	420 nm, 440 nm, 490 nm, 520 nm, 540 nm, 570 nm, 600 nm, 700 nm.
Measuring Modes	%T, Abs, Conc & K-factor	%T & Abs
Photometric Resolution	0.1% T, 0.001 Abs upto 1.999 Abs (O.D.)	1% T & 0.01 in Abs upto 1.99 Abs (O.D.)
Display	2 Line 16 Character LCD	3-Digit LED
K-Factor Range	0 to 1999	
Concentration	0 to 2 times the absorbance	
Memory	Data can be Stored in memory	
Sample Volume	1ml in 4ml Test tube/Cuvette	1ml in 4ml Test tube
Source	White LED	White LED
Detector	Hermetically Sealed photodiode	Hermetically Sealed photodiode
Printer Port	Epson compatible 80 column D.M. Printer	
Power	230V $\pm$ 10%, 50 Hz	230V $\pm$ 10%, 50 Hz
Dimension	160 (W) X 200 (D) X 100 (H) mm	160 (W) X 200 (D) X 100 (H) mm
Weight	1.5 Kg (Approx)	1.5 Kg (Approx)
Accessories	a) Four test tubes b) Two Glass Cuvettes	a) Four test tubes



115 / 112 use 8 filters with these characteristics			
FILTER	PEAK (nm)	PASSBAND (nm)	COLOUR
	420	380-510	Violet
	440	400-530	Blue
	490	460-540	Blue/Green
	520	490-560	Green
	540	510-590	Green/Yellow
	570	570-590	Yellow
	600	570-700	Orange
	720 and above	630 and above	Red and above



\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.



# UV - VISIBLE SPECTROPHOTOMETER

108

0.5 nm  
Bandwidth



118

2 nm  
Bandwidth



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SYSTRONICS single beam UV-VISIBLE SPECTROPHOTOMETER 108 (0.5 nm bandwidth) & UV-VISIBLE SPECTROPHOTOMETER 118 (2nm bandwidth) are reliable, versatile single beam semiautomatic digital instruments for both qualitative and quantitative analysis, on spectrophotometric absorption, % transmittance and concentration, for industries, agricultural chemical, medical, bio-technological, forensic, teaching and research institutions

Low bandwidth (0.5 nm bandwidth) single beam UV-VISIBLE SPECTROPHOTOMETER 108 with low noise photomultiplier tube (PMT) as detector is very suitable for pharmaceutical as well as research purpose due its high resolution power, sensitivity and stability

Single beam UV-VISIBLE SPECTROPHOTOMETER 118 (2nm bandwidth) with Silicon photo diode as the detector most preferred instrument for industries as well as institutions due to its high stability and rigidity

Both the instruments having microcontroller based digital wavelength readout with resolution of 0.1nm. The instruments are modified Czerny-Monochromatic geometry for better aberration correction, holographic grating 1200 lines / mm blazed at 250 nm. with manual selection of four glass filters to eliminate spectral order interference

SPECIFICATIONS		108	118
Optics Grating	Single Beam 1200 Lines / mm	Single Beam 1200 Lines / mm	
Wavelength Range	200 to 900 nm	200 to 1000 nm	
Readout	Electronic Digital counter, 0.1 nm increments	Electronic Digital counter, 0.1 nm increments	
Accuracy	±0.5 nm	±1 nm	
Repeatability	±0.2 nm	±0.5 nm	
Spectral Bandwidth	0.5 nm	2 nm	
Photometric Range	Digital 0 - 2.000 Abs 0 - 1999 concentration units 0 - 100% transmission	Digital 0 - 2.000 Abs 0 - 1999 concentration units 0 - 100% transmission	
Accuracy	±0.005 Abs at 1 Abs	±0.005 Abs at 1 Abs	
Repeatability	±0.002 Abs at 1 Abs	±0.002 Abs at 1 Abs	
Stray Light	Less than 0.1% at 220 nm, 340 nm	Less than 0.1% at 220 nm, 340 nm	
Source	(a) Tungsten-Halogen Lamp (b) Deuterium Lamp	(a) Tungsten-Halogen Lamp (b) Deuterium Lamp	
Detector	Wide range, low noise PMT	UV-Enhanced wide range solid state Si-photodiode	
Filters	Manual Selection	Manual Selection	
Sample Holder	Manual 4-position sample changer for 10 mm cuvettes (cells)	Manual 4-position sample changer for 10 mm cuvettes (cells)	
Construction	Semi Automated unit consisting of wavelength selection by Micro-controller device & photometric range selection by manual	Semi Automated unit consisting of wavelength selection by Micro-controller device & photometric range selection by manual	
Power	230V ±10%, 50Hz	230V ±10%, 50Hz	
Dimensions	745 (W) X 480 (D) X 200 (H) mm	745 (W) X 480 (D) X 200 (H) mm	
Weight	24 kg	24 kg	
Accessories	Two matched 10mm path length quartz Cuvettes	Two matched 10mm pathlength quartz Cuvettes	
Optional Accessories	Single Position 20 to 50 mm Cuvette Holder (Factory Installed)	Single Position 20 to 50 mm Cuvette Holder (Factory Installed)	





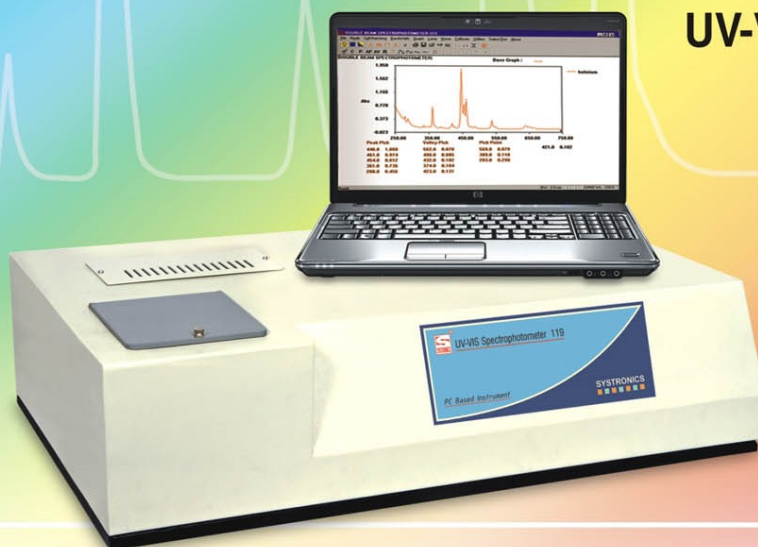
## UV-VIS SPECTROPHOTOMETER 117 MICRO CONTROLLER BASED

1 nm  
Bandwidth



## UV-VIS SPECTROPHOTOMETER 119 (PC BASED)

1 nm  
Bandwidth



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SYSTRONICS UV - VIS SPECTROPHOTOMETER 117 is a micro controller based single beam scanning standalone instrument & UV - VIS SPECTROPHOTOMETER 119 PC based instrument. Both are offers 1 nm bandwidth. It provides three measuring modes : Percent Transmittance (%T), Absorbance (ABS) and Concentration (CONC) with factors. The available operating modes are Single-Wavelength, Multi-Wavelength, Spectrum Scan and Time Scan.

117 is Combination of user friendly software, 20 X 4 alphanumeric LCD display, covers wavelength 200-1100 nm. All measurement results are available on the display except for the Spectrum Scan. A printer prints the scan besides providing hard copy of measurements. RS-232 is optional to enhance data processing ability through PC.

119 is covers the wavelength range from 200-1000 nm Special software supports Multi-standard Calibration with linear or nonlinear curve fitting for concentration measurements, besides the K-factor method. The Personal Computer & application software enhance the data processing ability and offer : Peak-Pick, Point-Pick, Expansion of Spectra, Overlaying of Spectra, 1<sup>st</sup> to 4<sup>th</sup> Derivatives, Averaging of two Scans, Subtraction of two Scans, Concentration Calculations, Spectrum Store / Recall etc.

Both instruments having automatic base line correction such as scans the blank / reference and stores its spectrum in memory to give the base line correction when a sample is scanned. User friendly menu driven operation & self-diagnostic wavelength calibration while switch on the power of the instruments. The instruments are modified Czerny-Monochromatic geometry for better aberration correction, holographic grating 1200 lines / mm blazed at 250 nm. with automatic selection of four glass filters to eliminate spectral order interference.

SPECIFICATIONS		117	119
<b>OPTICS</b>	:	Single Beam	Single Beam
Grating	:	1200 Lines / mm	1200 Lines / mm
<b>WAVELENGTH</b>			
Range	:	200 to 1100 nm	200 to 1000 nm
Resolution	:	0.1 nm	0.1 nm
Accuracy	:	±0.5 nm	±0.5 nm
Repeatability	:	±0.2 nm	±0.2 nm
Bandwidth	:	1 nm	1 nm
<b>PHOTOMETRIC</b>			
Range	:	0 to 3 Abs	-0.3 to 2.5 Abs, 0 to 100% T
Accuracy	:	± 0.005 Abs at 1A	± 0.005 Abs at 1A
Repeatability	:	± 0.002 Abs at 1A	± 0.002 Abs at 1A
Drift	:	0.003 Abs /hr. (After 1 hr. warmup at 500 nm)	0.003 Abs /hr. (After 1 hr. warmup at 500 nm)
<b>STRAY LIGHT</b>	:	Less then 0. 1% T at 220 nm & 340 nm	Less then 0. 1% T at 220 nm & 340 nm
<b>MEASURING MODES</b>			
	:	% Transmittance	% Transmittance
	:	Absorbance	Absorbance
	:	Concentration (K-factor, Multi standard up to 5)	Concentration (K-factor, Multi standard up to 5)
<b>OPERATING MODES</b>	:	Single Wavelength	Single Wavelength
	:	Multi Wavelength	Multi Wavelength
	:	Spectrum Scan	Scan (with Multiscan facility)
	:	Time Scan	Time Scan
<b>SOURCE</b>	:	Tungsten Halogen Lamp (320 to 1100 nm) Deuterium Lamp (200 to 340 nm)	Tungsten Halogen Lamp (320 to 1000 nm) Deuterium Lamp (200 to 340 nm)
<b>SCAN SPEED</b>	:	Slow, Medium and Fast	Slow, Medium and Fast (minimum at a span of 100 nm)
<b>DETECTOR</b>	:	UV-enhanced wide range solid state Si-photodiode	UV - enhanced wide range solid state Si-photodiode
<b>BASELINE CORRECTION</b>	:	Automatic baseline correction	Automatic baseline correction
<b>BASELINE FLATNESS</b>	:	±0.003 Abs / hr. (After 40 minutes warm-ups)	±0.003 Abs / hr. (After 40 minutes warm-ups)
<b>DATA PROCESSING</b>	:	Stand Alone • Peak-Pick • Spectrum printout	• Peak Pick, Point Pick, Valley Pick
<b>DISPLAY</b>	:	20 character, 4 line backlit alphanumeric LCD	• Zoom / Overlaying of Spectra
<b>KEYBOARD</b>	:	18 keys (11 numeric and 7 functional)	• 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> Derivatives
<b>DATA INTERVAL</b>	:	Depends on wavelength Scan-span & Scan-speed	• Averaging of Two Scans
<b>SAMPLE HOLDER</b>	:	5 position for 10 mm cuvette (automatically)	• Subtraction of Two Scans
<b>PRINTER PORT</b>	:	Epson compatible 80 Column D. M. Printer	• Spectrum Store/Recall
<b>RS-232 PORT</b>	:	PC Link data transfer	• Concentration of scan compared to base scans
<b>POWER</b>	:	230V ±10%, 50 Hz	<b>DATA PRESENTATION</b> : Display of graphic and tabular data on computer monitor, Permanent data storage on hard disk, Hard Copy of graphic and tabular data on printer
<b>DIMENSIONS</b>	:	745 (W) X 480 (D) X 200 (H) mm	<b>SAMPLE HOLDER</b> : 5 position for 10 mm cuvette (automatically)
<b>WEIGHT</b>	:	24 kg	<b>POWER</b> : 230V ±10%, 50 Hz
<b>ACCESSORIES</b>	:	Two matched 10 mm pathlength Quartz cuvettes, dust cover & manual	<b>DIMENSIONS</b> : 745 (W) X 480 (D) X 200 (H) mm
<b>OPTIONAL ACCESSORIES</b>			<b>WEIGHT</b> : 24 kg
			<b>ACCESSORIES</b> : Two matched 10 mm pathlength Quartz cuvettes, Dust cover & Manual
			<b>OPTIONAL ACCESSORIES</b>
			• Holder for 50 mm or 100 mm cylindrical and rectangular cuvettes
			• Personal Computer / Laptop
			• Epson compatible 80 column D.M. Printer
			• PC link Software for Spectrum Display, Storage/Retrieve, Peak -Pick, Point Pick, Expansion of spectra, 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> Derivatives, Averaging of Scans, Subtraction of Two Scans & Special software for kinetic by standard / factor

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# NEPHELO- TURBIDITY METER



**132**  
Manual



**135**  
Micro-Controller Based

## SYSTRONICS (INDIA) LIMITED (SYSTRONICS DIVISION)

**Works :** 89-92, Industrial Area, Naroda, Ahmedabad - 382 330. Gujarat, INDIA.  
Phones : (079) 22813017 / 22813117, Fax : (079) 22821592,

**Regd. Office :** B/116-129, Supath-II Complex,  
Near Juna Wadaj Bus Terminus, Ashram Road, Ahmedabad-380 013.  
Ph. : 079-27557072, 27556077, Fax : 079-27552902

Email : sales@systronicsindia.com • mktg@systronicsindia.com  
Website : www.systronicsindia.com

MANUFACTURERS OF ELECTRONIC INSTRUMENTS AND SCIENTIFIC EQUIPMENTS.

BRANCH ADDRESS :

BRANCHES AT : BENGALURU, BHOPAL, BHUBANESHWAR,  
CHANDIGARH, CHENNAI, GUWAHATI, HYDERABAD, JAIPUR, KOLKATA,  
LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.

**SYSTRONICS NEPHELO - TURBIDITY METER 132 & 135** is an accurate and elegant instrument designed for conducting nephelometric and turbidity measurements of suspended particles and colloids in solution. The principle of operation of this instrument is based on the well-known Tyndall effect. A beam of light passing through a turbid liquid being tested, scatters the light which, in turn, is collected at right angles by a Photodiode and indicated in a display. The amount of scattered light is proportional to the turbidity of the solution under test. The applications of turbidity measurements are vast in Municipal, Public Health, Sewage Works and in Industrial Establishments for determining quality of water/waste water.

## SPECIFICATIONS

	132	135
<b>Ranges</b>	0-1000 NTU in 4 Ranges (Manual) (a) 0-1 NTU (b) 0-10 NTU (c) 0-100 NTU (d) 0-1000 NTU	0-1000 NTU in 4 Ranges (Automatic) (a) 0-1 NTU (b) 0-10 NTU (c) 0-100 NTU (d) 0-1000 NTU
<b>Accuracy</b>	±3% of FSD in 0-1 and 0-1000 NTU ±2% of FSD in 0-10 and 0-100 NTU	±1.5% of FSD in 0-500 NTU ±2% of FSD in 500-1000 NTU
<b>Repeatability</b>	±2% of FS (Std.)	±1% of FS (Std.)
<b>Source</b>	Projector Lamp	LED
<b>Detector</b>	Photodiode	Photodiode
<b>Display</b>	3½ Digit	2 Line 16 Ch. LCD
<b>Calibration</b>	Formazine Standard Solution	Formazine Standard Solution
<b>Data Storage</b>		Calibration & Data Stored in Memory
<b>Printer Port</b>		Epson Compatible 80 Column Dot Matrix
<b>Power</b>	230 Volts ±10%, 50Hz	230 Volts ±10%, 50Hz
<b>Dimensions</b>	265(W) X 300(D) X 170(H) mm	160(W) X 200(D) X 100(H) mm
<b>Weight</b>	3.7 kg (Approx)	1.5 kg (Approx)
<b>Accessories</b>	Flat Bottom Test tubes-(25 mm Ø) 4 Nos. & Light Shield	Flat Bottom Test tubes-(25 mm Ø) 4 Nos. & Light Shield



\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# NEPHELO- TURBIDITY METER



**132**  
Manual



**135**  
Micro-Controller Based

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## SPECIFICATIONS

	132	135
<b>Ranges</b>	0-1000 NTU in 4 Ranges (Manual) (a) 0-1 NTU (b) 0-10 NTU (c) 0-100 NTU (d) 0-1000 NTU	0-1000 NTU in 4 Ranges (Automatic) (a) 0-1 NTU (b) 0-10 NTU (c) 0-100 NTU (d) 0-1000 NTU
<b>Accuracy</b>	±3% of FSD in 0-1 and 0-1000 NTU ±2% of FSD in 0-10 and 0-100 NTU	±1.5% of FSD in 0-500 NTU ±2% of FSD in 500-1000 NTU
<b>Repeatability</b>	±2% of FS (Std.)	±1% of FS (Std.)
<b>Source</b>	Projector Lamp	LED
<b>Detector</b>	Photodiode	Photodiode
<b>Display</b>	3½ Digit	2 Line 16 Ch. LCD
<b>Calibration</b>	Formazine Standard Solution	Formazine Standard Solution
<b>Data Storage</b>		Calibration & Data Stored in Memory
<b>Printer Port</b>		Epson Compatible 80 Column Dot Matrix
<b>Power</b>	230 Volts ±10%, 50Hz	230 Volts ±10%, 50Hz
<b>Dimensions</b>	265(W) X 300(D) X 170(H) mm	160(W) X 200(D) X 100(H) mm
<b>Weight</b>	3.7 kg (Approx)	1.5 kg (Approx)
<b>Accessories</b>	Flat Bottom Test tubes-(25 mm Ø) 4 Nos. & Light Shield	Flat Bottom Test tubes-(25 mm Ø) 4 Nos. & Light Shield



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# SPECTROPHOTOMETERS

106



166



## SYSTRONICS (INDIA) LIMITED (SYSTRONICS DIVISION)

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Phones : (079) 22813017 / 22813117, Fax : (079) 22821592,

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LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.

**SYSTRONICS SPECTROPHOTOMETERS 106 & 166** are a set of **micro controller** based having facility in accuracy, reliability and time saving. Wide spectral coverage and high resolution is achieved by using a powerful light source and a grating-based monochromator. A conveniently placed control enables the user to quickly orient the grating to provide monochromatic light of desired wavelength. The electronic processing circuits and power supplies are solid-state/LSI-based to ensure high accuracy, stability and long life. Two different models, catering to the varying needs of end-users are presented here.

SPECIFICATIONS	106	166
Wavelength	340 to 960 nm	340 to 990 nm
Absorbance Range	-0.3 to 2.500 Abs	-0.3 to 2.500 Abs
Spectral Bandwidth	5 nm	5 nm
Wavelength Resolution	5 nm	1 nm
Wavelength Display	Dial	3 Digit Digital
Wavelength Accuracy	±5 nm	±2 nm
Photometric Resolution	0.1%T	0.1%T
Photometric Accuracy	±0.005 Abs at 1 Abs	±0.005 Abs at 1 Abs
Modes	%T, Abs, Concentration & Factor	%T, Abs, Concentration & Factor
Concentration	0.000 to 9999 with floating Decimal point	0.000 to 9999 with floating Decimal point
K factor	0.000 to 9999 with floating Decimal point	0.000 to 9999 with floating Decimal point
Photometric Readout	4 Digit LED Display	4 Digit LED Display
0 & 100%T Setting	Manual	Manual
Grating	600 lines/mm	600 lines/mm
Detector	Si-Photo- Diode	Si-Photo- Diode
Source	Halogen Lamp	Halogen Lamp
Sample holder	10mm path length, Two Position Manual Sample Changer	10mm path length, Two Position Manual Sample Changer
Power	230V ±10%, 50Hz	230V ±10%, 50Hz
Dimension	420(W) X 310(D) X 125(H) mm	420(W) X 310(D) X 125(H) mm
Weight	6.5 Kg (Approx)	6.5 Kg (Approx)
Accessories	Two Glass Cuvettes	Two Glass Cuvettes
Optional Accessories	Single Position 20/50 mm Cuvette Holder (Factory Installed)	Single Position 20/50 mm Cuvette Holder (Factory Installed)

Note : **Systronics** also offers

- Visible Spectrophotometer-169
- Visible Scanning Spectrophotometer-167 & 1203
- UV-Visible Spectrophotometer-108 & 118
- UV-Visible Scanning Spectrophotometer-117, 119, 2201, 2202, 2203 & 2205



**106**



**166**

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# VISISCAN-167



- Micro-controller based
- Single Beam Optics
- Band width 5 nm
- 2 Line 20 Characters LCD Display

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LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.

# S P E C I F I C A T I O N S



## WAVELENGTH

Range	340 to 999 nm
Accuracy	±2.0 nm
Readout	1 nm step
Bandwidth	5.0 nm

## PHOTOMETRIC

Range	-0.04 to 2.5 Abs
Accuracy	±0.005 Abs at 1.0 Abs
Repeatability	±0.005 Abs
Resolution	0.1 in %T mode, 0.001 Abs in Abs mode
Digital Readout	2 line 20 characters LCD
Drift	±0.003 Abs/hour at 500 nm
Baseline Flatness	±0.005 Abs
Stray Light	Less than 0.3%T at 370 nm

## GRATING

600 lines/mm
--------------

## SOURCE

Tungsten-Halogen lamp
-----------------------

## DETECTOR

Silicon Photodiode
--------------------

## SAMPLE HOLDER

Two-position manual sample changer or factory installed single position holder for 20 mm / 50 mm (Max) path length cell.
--

## MINIMUM. VOLUME

1 ml in 4 ml cuvette
----------------------

## 0,100%T, ORDER

Automatic
-----------

## CUTOFF SETTING

Automatic
-----------

## OPERATING MODES

i) Single Wavelength
ii) Multi Wavelength (max 6)
iii) Scan

## MEASURING MODES

i) Absorbance
ii) %Transmittance
iii) Concentration (with factor and curve fitting)

K-Factor Range	0.100 to 9999 with floating Decimal point
----------------	---

Concentration Range	0.100 to 9999 with floating Decimal point
---------------------	---

## DATA PROCESSING

1) Peak Pick (6 peaks in Abs value)
2) Spectrum printout (on Epson compatible Dot Matrix printer)

## DATA PRESENTATION

Display	2 line 20 char. Alphanumeric LCD
Hard Copy	On printer (Graph and Data both)

## PRINTER PORT

Epson compatible 80 Column Dot Matrix
---------------------------------------

## RS 232 PORT

PC Link data transfer
-----------------------

## POWER

230V ±10%, 50 Hz
------------------

## DIMENSIONS

420 (W) X 310 (D) X 125 (H) mm
--------------------------------

## WEIGHT

6.5 kg (Approx)
-----------------

## ACCESSORIES

2 matched 10 mm path length Glass cuvettes
--

## OPTIONAL ACCESSORIES

- 4 -Position automatic sample changer for 10 mm cuvettes
- Holder for 50 mm cylindrical and rectangular Cuvettes
- Epson compatible 80 column D.M. Printer
- Standard RS 232 interface for Window based PC link Software for Spectrum Display, Storage / Retrieve, Peak -Pick, Point - Pick, 1<sup>st</sup> to 4<sup>th</sup> Derivatives, Zoom, Averaging / Subtraction of Two Scans

Note : **Systronics** also offers

Visible D. B. Scanning Spectrophotometer-1203

UV-Visible Spectrophotometer-108 & 118

UV-Visible Scanning Spectrophotometer-117 & 119

UV-Visible D. B. Scanning Spectrophotometer- 2201,

2202, 2203 & 2205

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# Visible Spectrophotometer 168

Micro Controller Based



◆ Bandwidth 2 nm

Concentration /  
Scanning Graph  
on display

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(SYSTRONICS DIVISION)

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**Website :** www.systronicsindia.com • CIN : U32201 GJ1973 PLC002437

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# Visible Spectrophotometer 168

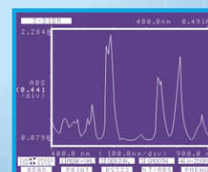
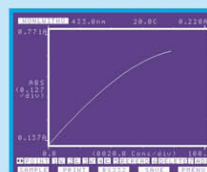
## Micro Controller Based



### SPECIFICATIONS

<b>OPTICS</b>	Single beam Czerny-Turner Monochromator with grating of 1200 line / mm
<b>WAVELENGTH</b>	
Range	: 340 to 1100 nm
Accuracy	: $\pm 1.0$ nm
Resolution	: 0.1 nm
Repeatability	: $\pm 0.5$ nm
Bandwidth	: 2.0 nm
<b>PHOTOMETRIC</b>	
Range	: - 0.04 to 3.0 Abs
Accuracy	: $\pm 0.005$ Abs at 1.0 Abs
Repeatability	: $\pm 0.002$ Abs at 1.0 Abs
<b>STRAY LIGHT</b>	Less than 0.1%T at 340 nm
<b>BASELINE FLATNESS</b>	Within $\pm 0.005$ Abs (excluding noises)
<b>SCAN SPEED</b>	Slow, Medium, Fast
<b>DATA INTERVAL</b>	Depends on wavelength scan range and scan speed, Minimum possible 0.1 nm for slow, 0.2 nm for medium and 0.4 nm for fast scan speeds.
<b>SAMPLE HOLDER</b>	Automatic selection for Four cuvette (10 mm Pathlength)
<b>SOURCE</b>	Tungsten-Halogen lamp,
<b>DETECTOR</b>	Si-Photodiode
<b>ORDER CUT-OFF FILTER</b>	Four glass filters, automatically positioned to eliminate grating spectral order interferences
<b>MEASURING MODES</b>	i) Absorbance ii) %Transmittance iii) Concentration (K factor, Multi standard)
<b>OPERATING MODES</b>	i) Single Wavelength ii) Multi Wavelength iii) Scan iv) Time Scan v) Online measurement facility
<b>AUTOMATIC CALIBRATIONS/ OPTIMISATIONS</b>	i) Wavelength calibration ii) LCD contrast adjustment iii) System check at power ON

<b>DATA PROCESSING</b>	i) Peak Pick / Valley Pick ii) Zoom (Expansion) of Spectra iii) Derivative iv) Smoothing of spectra
<b>DATA PRESENTATION</b>	Display of graphic and tabular data on Graphics LCD (320* 240 pixels); hard copy of graphic and data on printer.
<b>DATABANK</b>	For each operating mode ten users defined method can be storage using memory backup.
<b>DATA STORAGE</b>	For each operating mode five users defined files can be storage using memory backup. For each mode one default file which stores last readings taken
<b>PRINTER PORT</b>	Epson compatible Dot Matrix printer
<b>RS-232 PORT</b>	PC Link Data transfer
<b>ACCESSORIES</b>	Two matched 10 mm pathlength glass cuvettes
<b>OPTIONAL ACCESSORIES</b>	<ul style="list-style-type: none"> <li>• Holders for 50 mm rectangular cuvettes Factory Installed</li> <li>• Epson compatible Dot Matrix printer</li> </ul>
<b>Pc Link Software for :</b>	<ul style="list-style-type: none"> <li>• Windows based interface</li> <li>• Permanent data storage on harddisk</li> <li>• Peak Pick/ Point Pick/ Valley Pick</li> <li>• Expansion of spectra</li> <li>• 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Derivative</li> <li>• Averaging of scans</li> <li>• Subtraction of two scans</li> <li>• Ratio, Corrected ratio, 2 point to Point net Abs</li> <li>• Comparison of concentration</li> </ul>
<b>POWER</b>	230V, $\pm 10\%$ , 50Hz
<b>DIMENSION</b>	480 (W) X 410 (D) X 215 (H) mm
<b>WEIGHT</b>	13 Kg. (Approx.)







## DIGITAL CONDUCTIVITY METER 304

## DIGITAL CONDUCTIVITY TDS METER 307



- Conductivity
- Manual Temperature
- Cell Constant (1C.C.)



- Conductivity
- Auto/Manual Temperature
- TDS
- Temp. Co-efficient
- Cell Constant (1C.C. & 0.1C.C.)

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**Systronics Digital Conductivity Meter 304 and 307** are convenient instrument for routine measurements of conductivity of various electrolytes such as Caustic content of rinse water, Electrolytic impurities in Distilled / Demineralised water, Sulphuric Acid concentration in pickling baths, Anodizing tanks, Soil Conductivity and other applications.

The instrument uses state of the art IC technology and consumes very little power. Source frequency (100 Hz or 1 KHz) gets automatically selected in the appropriate range. **Type 307** also measures Total Dissolved Solid (TDS) in liquid.

The unit is housed in compact, shock / rust proof & light weight injection molded cabinet.

Specifications	304	307
<b>Source Frequency</b>	: 100 Hz or 1 KHz automatically selected	100 Hz or 1 KHz automatically selected
<b>Conductivity Range</b>	: 0 $\mu$ S to 200 mS with 1.0 cell constant (5 decadic ranges)	0 $\mu$ S to 20 mS with 0.1 cell constant and 0 $\mu$ S to 200 mS with 1 cell (5 decadic ranges)
<b>TDS</b>	:	0 ppm to 20 ppt with 0.1 cell constant and 0 ppm to 200 ppt with 1 cell constant in 5 decadic ranges
<b>Temperature</b>	: 0° C to 100° C (Manual)	0° C to 100° C (Auto / Manual)
<b>Display</b>	: 3 digits LED	3 digits LED
<b>Resolution</b>		
Conductivity	: 0.1 $\mu$ S	0.01 $\mu$ S is lowest range with cell constant of 0.1
TDS	:	0.01 ppm in lowest range with cell constant of 0.1
Temperature	:	1° C
<b>Accuracy</b>		
Conductivity / TDS	: $\pm 1\%$ of f.s. $\pm 1$ digit (Conductivity )	$\pm 1\%$ of f.s. $\pm 1$ digit
Temperature	:	$\pm 1^\circ$ C $\pm 1$ digit
<b>Cond. Cell Compensation</b>		
0.1 Cell Constant	:	0.09 to 0.11
1 Cell Constant	: 0.9 to 1.1	0.9 to 1.1
<b>TDS - Factor</b>	:	0 to 1.00
<b>Cond. Tempco Range</b>	:	0.0 to 10.0% per °C
<b>Temperature Range</b>	:	0 to 100° C
<b>Temperature Sensor</b>	:	PT 100
<b>Power</b>	: 230 V $\pm 10\%$ 50 Hz	230 V $\pm 10\%$ 50 Hz
<b>Dimensions</b>	: 235(W) X 185(D) X 85(H) mm	210(W) X 220(D) X 105(H) mm
<b>Weight</b>	: 1.25 kg (Approx)	1.7 kg (Approx)
<b>Accessories</b>	: (1) 1 Cell Constant Cell (2) Clamp & Stand	(1) 1 Cell Constant Cell (2) 0.1 Cell Constant Cell (3) Temperature probe (Pt. 100 sensor) (4) Clamp & Stand

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





## $\mu$ C BASED CONDUCTIVITY METER 306

## $\mu$ C BASED CONDUCTIVITY - TDS METER 308



- Conductivity 0.1  $\mu$ S to 100 mS
- Temp. Co-efficient

- Conductivity 0.1  $\mu$ S to 100 mS
- TDS 0.1 ppm to 100 ppt
- Temp. Co-efficient

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**SYSTRONICS  $\mu$ C BASED CONDUCTIVITY 306 & CONDUCTIVITY-TDS METER 308** are a micro controller based system for accurate measurement for conductivity of liquids along with specific conductivity using temperature probe or manual temperature setting. The conductivity range is covered from 0.1  $\mu$ S to 100 mS in six decade range having the facility of automatic conductivity cell recognition (0.1 to 5 CC) & user's selectable temperature coefficient. Calibration data can be stored in memory and printer interface port for 80 column DM printers for hard copy of data.

Additional facility for conductivity / TDS meter 308 to measure Total Dissolved Solids (T.D.S.) from 0.1 ppm to 100 ppt by multiplying the conductivity with user-defined TDS factor.

This versatile instrument is useful where large number of samples have to be tested viz. D.M. Plants, Soil testing labs, Environmental labs, Effluent treatment plants.

The unit is housed in compact, shock / rust proof & light weight injection molded cabinet.

SPECIFICATIONS	306	308
<b>Frequency</b>	: 100 Hz or 1 KHz Automatic	100 Hz or 1 KHz Automatic
<b>Conductivity</b>		
Range	: 0.1 $\mu$ S to 100 mS. (6 decadic ranges)	0.1 $\mu$ S to 100 mS. (6 decadic ranges)
Accuracy	: $\pm 1\%$ of F.S. $\pm 1$ digit	$\pm 1\%$ of F.S. $\pm 1$ digit
Resolution	: 0.001 $\mu$ S	0.001 $\mu$ S
<b>TDS</b>		
Range	:	0.1 ppm to 100 ppt. (6 decadic ranges)
Accuracy	:	$\pm 1\%$ of F.S. $\pm 1$ digit
<b>Temperature</b>		
Range	: 0° C to 100° C (Auto / Manual)	0° C to 100° C (Auto / Manual)
Resolution	: 0.1° C	0.1° C
Accuracy	: $\pm 0.2^\circ$ C $\pm 1$ digit	$\pm 0.2^\circ$ C $\pm 1$ digit
<b>Cell Constant</b>	: Acceptable from 0.1 to 5.0	Acceptable from 0.1 to 5.0
<b>Auto Temp. Compensation</b>	: 0° C to 100° C with PT 100 sensor	0° C to 100° C with PT 100 sensor
<b>Manual Temp. Compensation</b>	: 0° C to 60° C user selectable	0° C to 60° C user selectable
<b>Conductivity Temp. Co-efficient</b>	: 0.0% to 9.9% user selectable	0.0% to 9.9% user selectable
<b>Display</b>	: 7 digits, 7 segment LEDs (3 digits for TEMP/TEMPCO 4 digits for Conductivity) With automatic decimal point selection	7 digits, 7 segment LEDs (3 digits for TEMP/TEMPCO 4 digits for Conductivity/TDS) With automatic decimal point selection
<b>TDS-factor</b>	:	0.00 to 9.99 user selectable
<b>Printer Port</b>	: Epson compatible 80 Column Dot Matrix	Epson compatible 80 Column Dot Matrix
<b>Power</b>	: 230V AC. $\pm 10\%$ , 50 Hz	230V AC. $\pm 10\%$ , 50 Hz
<b>Dimensions</b>	: 250(W) X 205(D) X 75(H) mm	250(W) X 205(D) X 75(H) mm
<b>Weight</b>	: 1.25 Kg (Approx)	1.25 Kg (Approx)
<b>Accessories</b>	: i) Conductivity cell, cell constant 0.1 ii) Conductivity cell, cell constant 1.0 iii) Temperature probe (PT-100 sensor) iv) Stand & Clamp	i) Conductivity cell, cell constant 0.1 ii) Conductivity cell, cell constant 1.0 iii) Temperature probe (PT-100 sensor) iv) Stand & Clamp





## DIGITAL CONDUCTIVITY METER 304

## DIGITAL CONDUCTIVITY TDS METER 307



- Conductivity
- Manual Temperature
- Cell Constant (1C.C.)



- Conductivity
- Auto/Manual Temperature
- TDS
- Temp. Co-efficient
- Cell Constant (1C.C. & 0.1C.C.)

### SYSTRONICS (INDIA) LIMITED (SYSTRONICS DIVISION)

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**Systronics Digital Conductivity Meter 304 and 307** are convenient instrument for routine measurements of conductivity of various electrolytes such as Caustic content of rinse water, Electrolytic impurities in Distilled / Demineralised water, Sulphuric Acid concentration in pickling baths, Anodizing tanks, Soil Conductivity and other applications.

The instrument uses state of the art IC technology and consumes very little power. Source frequency (100 Hz or 1 KHz) gets automatically selected in the appropriate range. **Type 307** also measures Total Dissolved Solid (TDS) in liquid.

The unit is housed in compact, shock / rust proof & light weight injection molded cabinet.

Specifications	304	307
<b>Source Frequency</b>	: 100 Hz or 1 KHz automatically selected	100 Hz or 1 KHz automatically selected
<b>Conductivity Range</b>	: 0 $\mu$ S to 200 mS with 1.0 cell constant (5 decadic ranges)	0 $\mu$ S to 20 mS with 0.1 cell constant and 0 $\mu$ S to 200 mS with 1 cell (5 decadic ranges)
<b>TDS</b>	:	0 ppm to 20 ppt with 0.1 cell constant and 0 ppm to 200 ppt with 1 cell constant in 5 decadic ranges
<b>Temperature</b>	: 0° C to 100° C (Manual)	0° C to 100° C (Auto / Manual)
<b>Display</b>	: 3 digits LED	3 digits LED
<b>Resolution</b>		
Conductivity	: 0.1 $\mu$ S	0.01 $\mu$ S is lowest range with cell constant of 0.1
TDS	:	0.01 ppm in lowest range with cell constant of 0.1
Temperature	:	1° C
<b>Accuracy</b>		
Conductivity / TDS	: $\pm 1\%$ of f.s. $\pm 1$ digit (Conductivity )	$\pm 1\%$ of f.s. $\pm 1$ digit
Temperature	:	$\pm 1^\circ$ C $\pm 1$ digit
<b>Cond. Cell Compensation</b>		
0.1 Cell Constant	:	0.09 to 0.11
1 Cell Constant	: 0.9 to 1.1	0.9 to 1.1
<b>TDS - Factor</b>	:	0 to 1.00
<b>Cond. Tempco Range</b>	:	0.0 to 10.0% per °C
<b>Temperature Range</b>	:	0 to 100° C
<b>Temperature Sensor</b>	:	PT 100
<b>Power</b>	: 230 V $\pm 10\%$ 50 Hz	230 V $\pm 10\%$ 50 Hz
<b>Dimensions</b>	: 235(W) X 185(D) X 85(H) mm	210(W) X 220(D) X 105(H) mm
<b>Weight</b>	: 1.25 kg (Approx)	1.7 kg (Approx)
<b>Accessories</b>	: (1) 1 Cell Constant Cell (2) Clamp & Stand	(1) 1 Cell Constant Cell (2) 0.1 Cell Constant Cell (3) Temperature probe (Pt. 100 sensor) (4) Clamp & Stand

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





## $\mu$ C BASED CONDUCTIVITY METER 306

## $\mu$ C BASED CONDUCTIVITY - TDS METER 308



- Conductivity 0.1  $\mu$ S to 100 mS
- Temp. Co-efficient

- Conductivity 0.1  $\mu$ S to 100 mS
- TDS 0.1 ppm to 100 ppt
- Temp. Co-efficient

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**SYSTRONICS  $\mu$ C BASED CONDUCTIVITY 306 & CONDUCTIVITY-TDS METER 308** are a micro controller based system for accurate measurement for conductivity of liquids along with specific conductivity using temperature probe or manual temperature setting. The conductivity range is covered from 0.1  $\mu$ S to 100 mS in six decade range having the facility of automatic conductivity cell recognition (0.1 to 5 CC) & user's selectable temperature coefficient. Calibration data can be stored in memory and printer interface port for 80 column DM printers for hard copy of data.

Additional facility for conductivity / TDS meter 308 to measure Total Dissolved Solids (T.D.S.) from 0.1 ppm to 100 ppt by multiplying the conductivity with user-defined TDS factor.

This versatile instrument is useful where large number of samples have to be tested viz. D.M. Plants, Soil testing labs, Environmental labs, Effluent treatment plants.

The unit is housed in compact, shock / rust proof & light weight injection molded cabinet.

SPECIFICATIONS	306	308
<b>Frequency</b>	: 100 Hz or 1 KHz Automatic	100 Hz or 1 KHz Automatic
<b>Conductivity</b>		
Range	: 0.1 uS to 100 mS. (6 decadic ranges)	0.1 uS to 100 mS. (6 decadic ranges)
Accuracy	: $\pm 1\%$ of F.S. $\pm 1$ digit	$\pm 1\%$ of F.S. $\pm 1$ digit
Resolution	: 0.001 $\mu$ S	0.001 $\mu$ S
<b>TDS</b>		
Range	:	0.1 ppm to 100 ppt. (6 decadic ranges)
Accuracy	:	$\pm 1\%$ of F.S. $\pm 1$ digit
<b>Temperature</b>		
Range	: 0° C to 100° C (Auto / Manual)	0° C to 100° C (Auto / Manual)
Resolution	: 0.1° C	0.1° C
Accuracy	: $\pm 0.2^\circ$ C $\pm 1$ digit	$\pm 0.2^\circ$ C $\pm 1$ digit
<b>Cell Constant</b>	: Acceptable from 0.1 to 5.0	Acceptable from 0.1 to 5.0
<b>Auto Temp. Compensation</b>	: 0° C to 100° C with PT 100 sensor	0° C to 100° C with PT 100 sensor
<b>Manual Temp. Compensation</b>	: 0° C to 60° C user selectable	0° C to 60° C user selectable
<b>Conductivity Temp. Co-efficient</b>	: 0.0% to 9.9% user selectable	0.0% to 9.9% user selectable
<b>Display</b>	: 7 digits, 7 segment LEDs (3 digits for TEMP/TEMPCO 4 digits for Conductivity) With automatic decimal point selection	7 digits, 7 segment LEDs (3 digits for TEMP/TEMPCO 4 digits for Conductivity/TDS) With automatic decimal point selection
<b>TDS-factor</b>	:	0.00 to 9.99 user selectable
<b>Printer Port</b>	: Epson compatible 80 Column Dot Matrix	Epson compatible 80 Column Dot Matrix
<b>Power</b>	: 230V AC. $\pm 10\%$ , 50 Hz	230V AC. $\pm 10\%$ , 50 Hz
<b>Dimensions</b>	: 250(W) X 205(D) X 75(H) mm	250(W) X 205(D) X 75(H) mm
<b>Weight</b>	: 1.25 Kg (Approx)	1.25 Kg (Approx)
<b>Accessories</b>	: i) Conductivity cell, cell constant 0.1 ii) Conductivity cell, cell constant 1.0 iii) Temperature probe (PT-100 sensor) iv) Stand & Clamp	i) Conductivity cell, cell constant 0.1 ii) Conductivity cell, cell constant 1.0 iii) Temperature probe (PT-100 sensor) iv) Stand & Clamp





# Dissolved Oxygen Meter 314



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# Dissolved Oxygen Meter 314

SYSTRONICS Micro controller based D.O. meter 314 is handheld, rugged and user friendly. Simple to operate and extended range is ideal for laboratories and field for quick and accurate D.O. Measurement. Instrument can be operated on 9V battery or on mains by using external adaptor (9V-12V). Dissolved Oxygen Meter measures the amount of dissolved oxygen gases in solution.

## Salient Features

Measures Concentration of D.O. (up to 20 ppm) and Temperature (up to 0° C to 50° C) Accurate results under varying condition such as salinity, Temperature and pressure compensation.

## Applications

D.O. meter can be used in field of Environmental monitoring Laboratories, Water Treatment Plants, Aquaculture, Aquarium and Fermentation applications.



## SPECIFICATIONS

### Oxygen Measurement

Range	: 0-20 ppm
Accuracy	: $\pm 1$ % of full scale
Resolution	: 0.1 ppm

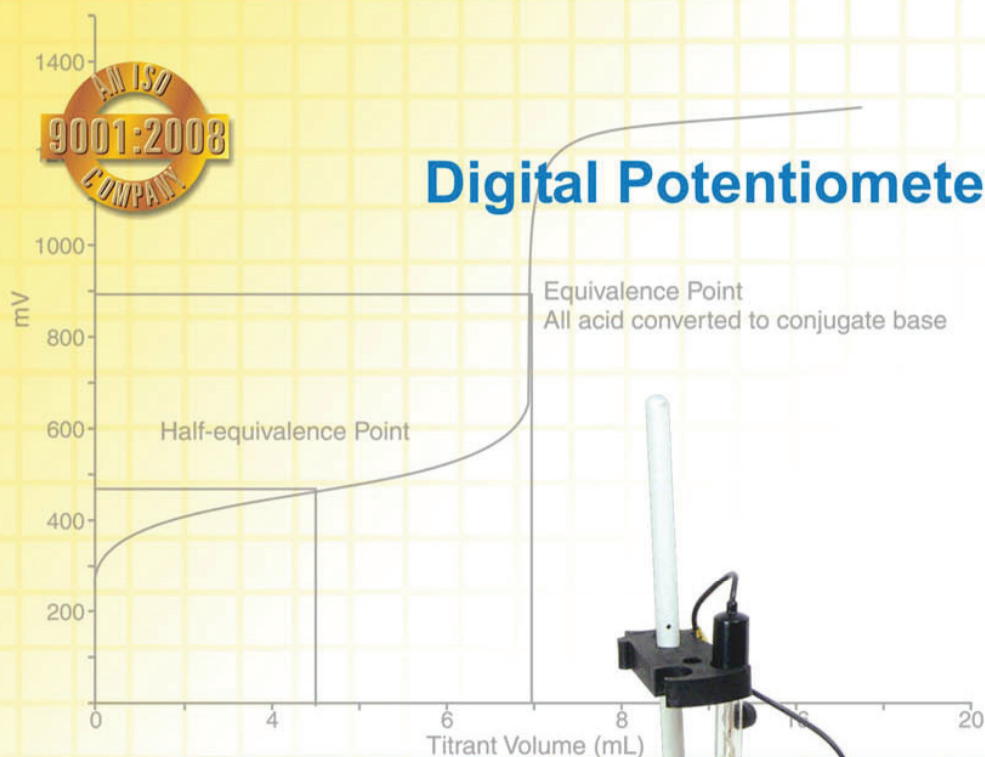
### Temperature Measurement

Range	: 0 to 50° C
Accuracy	: $\pm 0.5$ ° C
Resolution	: 0.1° C
Temperature compensation	: 0 to 50° C
Salinity compensation	: 0-50 ppt
Pressure (Barometric correction)	: 500 to 1499 mm Hg
Display	: 1 line, 8 characters LCD
Power	: 9V battery or mains adaptor 9-12V
Dimension	: 80(W) X 42(D) X 175(H) mm
Weight	: 500gm (Approx)
Sensor D O Probe	: Gold and Silver with FEP Gas permissible membrane
Temperature Probe	: PT 100
Accessories	: a) Combined D.O. and Temp. Probe along with protective cover b) 9 V battery c) FEP Teflon membrane





## Digital Potentiometer 318



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318  
TITRATION

# Digital Potentiometer 318

## SPECIFICATIONS

<b>Input Configuration</b>	Bipolar
<b>mV</b>	
Range	0 to $\pm 1999$ V
Resolution	1 mV
<b>Control</b>	
Set Zero Range	0 to $\pm 1500$ mV input
Stirrer Speed	0 to full speed
Switch	Hold reading when pressed
<b>Polarization Current</b>	10 $\mu$ A for Metal to Metal electrode
<b>Input Impedance</b>	$10^{11}$ Ohms
<b>Polarity</b>	Automatic
<b>Over Range</b>	Last 3 digits blinking
<b>Magnetic Stirrer</b>	In-built with variable control
<b>Display</b>	3½ Digit LED
<b>Power</b>	230 V AC $\pm 10\%$ , 50Hz
<b>Dimensions</b>	235(W) X 185(D) X 85(H) mm
<b>Weight</b>	1.25 Kg (Approx)
<b>Accessories</b>	(1) Combined Pt. & Ref. Electrode or Pt. & Ref. Electrode (2) Electrode Stand & Clamp (3) Stirrer Pedal

The unit is Injection Molded Cabinet.



\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# Digital pH Meter

Base - 14

Neutral - 7

Acid - 0



**335**  
LED Based



**802**  
LCD Based

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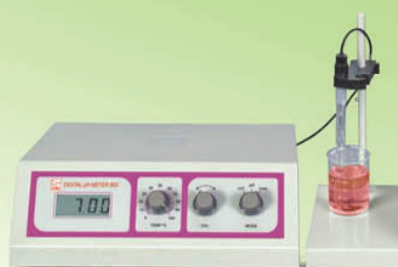
SYSTRONICS DIGITAL pH METER 335 & 802 are high quality precision instruments designed specially to take care of accurate pH measurements in chemical research laboratories. Minimum control on the front panel and the easy of operation make it handy even for routine analysis. Precision is ensured using very low temperature co-efficient components, latest IC regulators, very high input impedance op-amps and LSI circuits. In model 802 can be used for polarizing current is provided to facilitate Karl-Fischer titration, recorder output enables recording of pH/mV measurements on a Strip Chart Recorder, for a continuous monitoring of a permanent record of the results.

The unit is housed in a compact, shock / rust proof & light weight injection molded cabinet.

### Digital pH Meter 335



### Digital pH Meter 802



SPECIFICATIONS	335	802
<b>pH Range</b>	: 0 to 14.00 pH	0 to 14.00 pH
<b>Millivolt Range</b>	: 0 to $\pm 1999$ mV	0 to $\pm 1999$ mV
<b>Slope Correction</b>	: 85% to 115%	85% to 115%
<b>Resolution</b>	: 0.01 pH, 1 mV in mV mode	0.01 pH, 1 mV in mV mode
<b>Repeatability</b>	: $\pm 0.01$ pH $\pm 1$ digit for pH $\pm 1$ mV $\pm 1$ digit for mV	$\pm 0.01$ pH $\pm 1$ digit for pH $\pm 1$ mV $\pm 1$ digit for mV
<b>Standardization Range</b>	: $\pm 1$ pH (Approx)	$\pm 1$ pH (Approx)
<b>Temp. Compensation</b>	: 0 to 100° C Dig. Display (Manual)	0 to 100° C Dig. Display (Manual)
<b>Display</b>	: 3½-Digit Red LED Seven Segment with automatic polarity & decimal point	3½-Digit Red LCD Seven Segment with automatic polarity & decimal point
<b>Polarization Current</b>	:	10 $\mu$ A
<b>Recorder Output</b>	:	$\pm 10$ mV / pH in pH Mode $\pm 10$ mV / 100mV in mV Mode
<b>Power</b>	: 230V $\pm$ 10% 50 Hz	230V $\pm$ 10% 50 Hz
<b>Dimension</b>	: 235 (W) X 185 (D) X 85 (H) mm	235 (W) X 185 (D) X 85 (H) mm
<b>Weight</b>	: 1.25 Kg (Approx)	1.25 Kg (Approx)
<b>Accessories</b>	: Combined Electrode Stand & Clamp	Combined Electrode Stand & Clamp
<b>Optional Accessories</b>	: Pt. Electrode & Calomel Electrode for Potentiometric Titration Temp. Sensor pt 100	Pt. Electrode & Calomel Electrode for Potentiometric Titration

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.



## AUTO UNIVERSAL TITRATOR 354



**Potentiometric  
Titration with  
Graphic Display**

### SALIENT FEATURES

- Burette-less accurate dispensing system
- Internal and external calibration
- Save the programs & test
- Magnetic stirrer with adjustable speed
- Large Graphic LCD 240\*128 Pixel to display titration Curves
- Potentiometric Titration.
- pH & mV measurement
- Temperature measurement
- Temperature Compensation for pH.
- Dispenser (Delivery pump)
- Data memory
- Prints the Data and Graph on 80 column DMP

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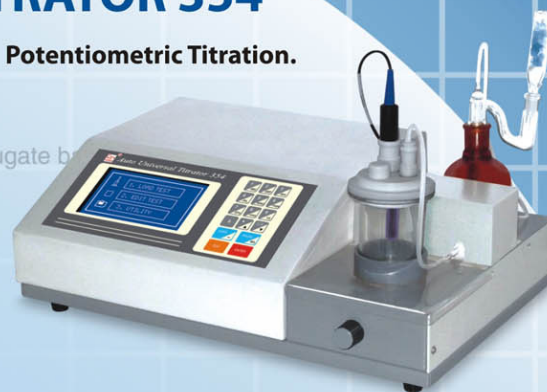
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# AUTO UNIVERSAL TITRATOR 354

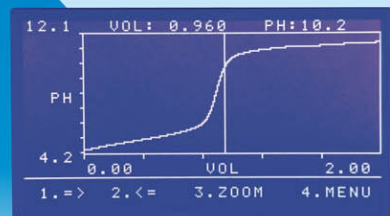
## Karl-Fischer Titration.



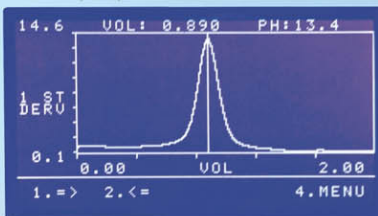
## Potentiometric Titration.



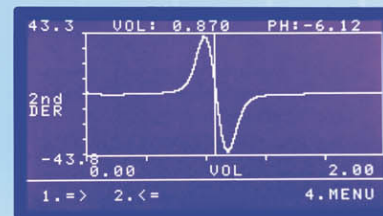
- Potentiometric : Acid-base titration  
Karl-Fischer titration  
Precipitation titration  
Redox titration



Potentiometric titration.



First derivative for Peak Point determination (pH / mV)



Second derivative for Volume determination (ml)

## SPECIFICATION

### MEASURING RANGE

	Range	Resolution	Accuracy
pH	: 0.00 to 14.00	0.01 pH	± 0.01
mV	: 0.00 to ±1999	0.1mV	± 0.5 mv
Temp.	: 0.0 to 100°C	0.1°C	± 1°C

### pH CALIBRATION

pH Calibration with 2, 3 & 5 points Standard Buffer or user selectable standard with Auto or Manual Temp. compensation

### SOLUTION DISPENSING MECHANISM

Highly accurate Sipper pump with auto calibration

### DISPLAY RANGE & RESOLUTION OF VOLUME DISPENSES

0-99.9 ml with 0.001 ml resolution by using Statistic Analysis

### CALIBRATION FOR KF-FACTOR

Inbuilt automatic KF factor calculation facilities, After Standardization one can use same factor for different Sample or can re-standardize the KF reagent

### MOISTURE CONTENT CALCULATION

0 to 100 % Display with % as well as mg

### END POINT ALARM

After Titration is over it gives audible beep

### HOLD TIME FOR END POINT

10 to 50 Second hold time, when end point is achieved, unit waits for stable end point

### POTENTIOMETRIC TITRATION

1<sup>st</sup> derivative for Peak Point (pH / mV) determination

2<sup>nd</sup> derivative for Volume (ml) determination

### DISPLAY & KEYBOARD

Graphic LCD 240\*128 display & Soft touch keyboard with 16 keys

### PRINTER PORT

Epson compatible 80 Column D. M. Printer

### RS-232

PC Link data transfer

### STIRRER

Inbuilt Magnetic stirrer with adjustable speed

### ACCESSORIES

- Reservoirs bottle with air tight attachments
- Reaction vessel with Teflon based air tight cover
- Glass Electrode
- Reference Electrode
- Combined Electrode
- Dual Pt electrode for KF titration
- Temperature probe (Pt -100)

**POWER** : 230V ±10%, 50 Hz

**DIMENSION** : 430 (H) X 250 (W) X 120 (L) mm

**WEIGHT** : 4 kg

### OPTIONAL ACCESSORIES

- Gel field Combined Electrode
- Silver Electrode
- Dual Junction reference electrode
- P C link software





## $\mu$ C pH System 361

### SALIENT FEATURES

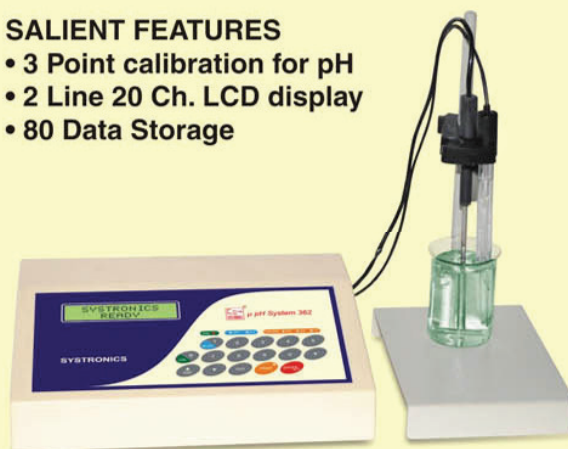
- 2 Point calibration for pH
- 7 Digits 7 Segment LED (3 for Temp. 4 for pH)



## $\mu$ C pH System 362

### SALIENT FEATURES

- 3 Point calibration for pH
- 2 Line 20 Ch. LCD display
- 80 Data Storage



## $\mu$ C Based pH System

Acid - 0

Neutral - 7

Base - 14

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LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.

**SYSTRONICS pH System 361 & 362** is an intelligent high resolution and precise instrument. It measures pH of a solution, using a pH electrode. The unit can also measure millivolt (mV) generated by the sensing electrode. It is named as mV-Absolute when the unit is asked to work like a conventional voltmeter and as mV-Relative when the voltage is measured with reference to a 7 pH solution. Facility to measure temperature using a Pt 100 sensor is also provided.

The unit is housed in a compact, shock / rust proof & light weight injection molded cabinet.

SPECIFICATIONS 361		362
<b>PH</b>		
Range	: 0 to 14 pH	0 to 14 pH
Resolution	: 0.01 pH	0.001 pH
Stability	: 0.01 pH per hour	0.002 pH per hour
Relative Accuracy	: $\pm 0.02$ pH $\pm 1$ Digit	$\pm 0.002$ pH $\pm 1$ Digit
Slope	: 85% to 115%	85% to 115%
Standard Buffers	: 7.000, 4.004 or 9.183	1.679, 4.004, 7.000, 9.183, 12.454 Acceptable
Buffer Deviation	: $\pm 0.5$ pH	$\pm 0.5$ pH
Other working buffers :		0 to 14 pH (value entered through numerical keys)
<b>mV</b>		
Range	: 0 to $\pm 1999$ mV	0 to $\pm 1999.9$ mV
Resolution	: 1mV	0.1mV
Accuracy	: $\pm 1$ mV $\pm 1$ Digit	$\pm 0.5$ mV $\pm 1$ Digit or $\pm 0.05\%$ of reading
<b>Temperature</b>		
Compensation	: Auto / Manual	Auto / Manual
Range	: 0 to 99.9° C	0 to 99.9° C
Resolution	: 0.1° C	0.1° C
Accuracy	: $\pm 0.5^\circ$ C $\pm 1$ Digit	$\pm 0.5^\circ$ C $\pm 1$ Digit
<b>Display</b>	: 7digits, 7segment LED (3 digits for temp. and 4 digits for pH)	2 line, 20 - character alphanumeric LCD
<b>Annunciation</b>	: With auto-polarity and decimal point. Mode annunciation by LED.	Individual LED with keys for calibration, pH, ABS mV, REL mV and print.
<b>Data Storage</b>	:	80 Reading
<b>Printer port</b>	: Epson compatible 80 column Dot Matrix	Epson compatible 80 column Dot Matrix
<b>Power</b>	: 230 V AC $\pm 10\%$ , 50Hz.	230 V AC $\pm 10\%$ , 50Hz.
<b>Dimensions</b>	: 250(W) X 205(D) X 75(H) mm	250(W) X 205(D) X 75(H) mm
<b>Weight</b>	: 1.25 kg (Approx)	1.25 kg (Approx)
<b>Accessories</b>	: i) pH Electrode (Combined) ii) Temperature Probe (PT-100 Sensor) iii) Electrode Stand & Clamp	i) pH Electrode (Combined) ii) Temperature Probe (PT-100 Sensor) iii) Electrode Stand & Clamp
<b>Optional</b>		
<b>Accessories</b>	: i) Redox Electrode (Pt. Electrode ) ii) Calomel Electrode iii) 80 Column Dot Matrix Printer	i) Redox Electrode (Pt. Electrode ) ii) Calomel Electrode iii) 80 Column Dot Matrix Printer

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





## μC pH System 361

### SALIENT FEATURES

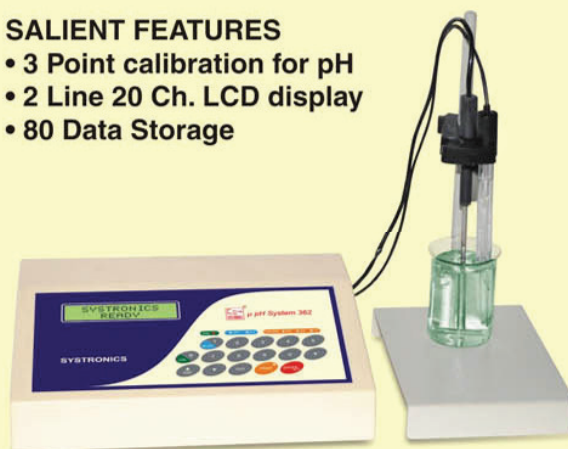
- 2 Point calibration for pH
- 7 Digits 7 Segment LED (3 for Temp. 4 for pH)



## μC pH System 362

### SALIENT FEATURES

- 3 Point calibration for pH
- 2 Line 20 Ch. LCD display
- 80 Data Storage



## μC Based pH System

Acid - 0

Neutral - 7

Base - 14

## SYSTRONICS (INDIA) LIMITED

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**SYSTRONICS pH System 361 & 362** is an intelligent high resolution and precise instrument. It measures pH of a solution, using a pH electrode. The unit can also measure millivolt (mV) generated by the sensing electrode. It is named as mV-Absolute when the unit is asked to work like a conventional voltmeter and as mV-Relative when the voltage is measured with reference to a 7 pH solution. Facility to measure temperature using a Pt 100 sensor is also provided.

The unit is housed in a compact, shock / rust proof & light weight injection molded cabinet.

SPECIFICATIONS 361		362
<b>PH</b>		
Range	: 0 to 14 pH	0 to 14 pH
Resolution	: 0.01 pH	0.001 pH
Stability	: 0.01 pH per hour	0.002 pH per hour
Relative Accuracy	: $\pm 0.02$ pH $\pm 1$ Digit	$\pm 0.002$ pH $\pm 1$ Digit
Slope	: 85% to 115%	85% to 115%
Standard Buffers	: 7.000, 4.004 or 9.183	1.679, 4.004, 7.000, 9.183, 12.454 Acceptable
Buffer Deviation	: $\pm 0.5$ pH	$\pm 0.5$ pH
Other working buffers :		0 to 14 pH (value entered through numerical keys)
<b>mV</b>		
Range	: 0 to $\pm 1999$ mV	0 to $\pm 1999.9$ mV
Resolution	: 1mV	0.1mV
Accuracy	: $\pm 1$ mV $\pm 1$ Digit	$\pm 0.5$ mV $\pm 1$ Digit or $\pm 0.05\%$ of reading
<b>Temperature</b>		
Compensation	: Auto / Manual	Auto / Manual
Range	: 0 to 99.9° C	0 to 99.9° C
Resolution	: 0.1° C	0.1° C
Accuracy	: $\pm 0.5^\circ$ C $\pm 1$ Digit	$\pm 0.5^\circ$ C $\pm 1$ Digit
<b>Display</b>	: 7digits, 7segment LED (3 digits for temp. and 4 digits for pH)	2 line, 20 - character alphanumeric LCD
<b>Annunciation</b>	: With auto-polarity and decimal point. Mode annunciation by LED.	Individual LED with keys for calibration, pH, ABS mV, REL mV and print.
<b>Data Storage</b>	:	80 Reading
<b>Printer port</b>	: Epson compatible 80 column Dot Matrix	Epson compatible 80 column Dot Matrix
<b>Power</b>	: 230 V AC $\pm 10\%$ , 50Hz.	230 V AC $\pm 10\%$ , 50Hz.
<b>Dimensions</b>	: 250(W) X 205(D) X 75(H) mm	250(W) X 205(D) X 75(H) mm
<b>Weight</b>	: 1.25 kg (Approx)	1.25 kg (Approx)
<b>Accessories</b>	: i) pH Electrode (Combined) ii) Temperature Probe (PT-100 Sensor) iii) Electrode Stand & Clamp	i) pH Electrode (Combined) ii) Temperature Probe (PT-100 Sensor) iii) Electrode Stand & Clamp
<b>Optional</b>		
<b>Accessories</b>	: i) Redox Electrode (Pt. Electrode ) ii) Calomel Electrode iii) 80 Column Dot Matrix Printer	i) Redox Electrode (Pt. Electrode ) ii) Calomel Electrode iii) 80 Column Dot Matrix Printer

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





# Water Analyser 371



A MICRO CONTROLLER BASED

## SALIENT FEATURES

MEASURES

pH  
mV / ORP  
Conductivity / TDS  
Salinity  
Dissolved Oxygen  
Temperature  
Colorimeter  
Turbidity

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LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.

## SPECIFICATIONS

### pH

Range	: 0 to 14.00 pH
Resolution	: 0.01 pH
Accuracy	: $\pm 0.01$ pH $\pm 1$ Digit
Sensor	: Combined Electrode
Temp. Compensation	: Auto & Manual

### mV / ORP

Range	: $\pm 1999$ mV
Resolution	: 1 mV
Accuracy	: $\pm 1$ mV $\pm 1$ Digit
Sensor	: Combined Electrode

### Conductivity / TDS

Range	: 0 to 100 mS (5 ranges) 0 ppm to 100 ppt (5 ranges) at TDS factor 0.5 (Approx) & TEMPCO 2%
Accuracy	: $\pm 1\%$ of FS $\pm 1$ Digit
Sensor	: Conductivity Cell (Acceptable from 0.1 to 5.0 cell constant)
Temp. Compensation	: Auto / Manual

### Salinity

Range	: 0 to 40 ppt
Resolution	: 0.1 ppt
Accuracy	: $\pm 2\%$ of FS $\pm 1$ Digit
Sensor	: Conductivity Cell (Acceptable from 0.1 to 5.0 cell constant)
Temp. Compensation	: Auto / Manual

### Dissolved Oxygen

Range	: 0 to 20 ppm
Resolution	: 0.1 ppm
Accuracy	: $\pm 1\%$ of FS $\pm 1$ Digit $\pm 0.1$
Sensor	: Au / Ag Probe
Temp. compensation	: Auto / Manual

### Temperature

Range	: 0 to 100°C
Resolution	: 0.1°C
Accuracy	: $\pm 0.5^\circ\text{C}$ $\pm 1$ Digit
Sensor	: PT 100

### Colorimeter

Range	: 0 to 2.00 Abs 0 to 100 %T Conc : 0 to 1999
Accuracy	: $\pm 0.05$ Abs
Resolution	: 0.001 Abs / 0.1 % T
Sensor	: Photodiode
Source	: Tungsten Lamp
Filters	: Blue (440 nm) Green (540 nm) Red (660 nm)

### Turbidity

Range	: 0 to 1 NTU 0 to 10 NTU 0 to 100 NTU
Accuracy	: $\pm 2\%$ of FS
Sensor	: Photodiode
Source	: Tungsten Lamp

### General

Display (LCD)	: 2 line 20 char. Alphanumeric
Printer Port	: Epson Compatible 80 Column D.M. Printer
Power	: 230 V 50 Hz $\pm 10\%$ or Internal Battery with charger
Dimensions	: 420(W) X 520(D) X 175(H) mm
Weight	: 9 kg (Approx)

### Accessories

Combined  
Electrode

pH / mV / ORP



Conductivity  
Cell

Conductivity / TDS / Salinity



D. O. Probe

Dissolved Oxygen



Temperature  
Probe

Temperature



4 Nos. Test tubes  
for Colorimeter &  
Turbidity Meter  
3 Nos. Filters for  
Colorimeter

Colorimetric - Abs, %T &  
Conc. Turbidity (NTU)



\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.



# pH / EC / TDS / Salinity Meter - 372 (PETS)



- Measurement of pH, mV, EC (Electrolyte Conductivity), TDS and Salinity are possible
- pH, EC, TDS & Salinity any of one at a time (parameters displayed along with temperature of sample and selected parameter)
- 240\* 128 Monochrome LCD Display
- 500 Measured readings data stored for all four parameters along with temperature
- Integrated IC backup for calibration data
- Recall saved data for view, print etc
- In pH mode : 2, 3, 4 & 5 point calibration option, with user & standard buffer selections
- Measurement Display with big font
- Hold Function
- Auto / Manual both type temperature compensation (ATC / MTC)

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E-mail : sales@systronicsindia.com • mktg@systronicsindia.com

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## Specifications

### pH

Range	: 0 to 14.00 pH
Resolution	: 0.01 pH
Repeatability	: $\pm 0.01$ pH $\pm 1$ digit
Deviation of buffer	: $\pm 0.5$ pH approx Acceptable for calibration
Calibration Points	: 2, 3, 4 or 5
Standard Buffer	: 1.679, 4.004, 7.000, 9.183 & 12.454 (NIST Standard)
User Buffer	: 0 to 14 pH (User choice)

### mV

Range	: 0 to $\pm 1999$ mV
Resolution	: 1mV
Repeatability	: $\pm 1$ mV $\pm 1$ digit

### EC / TDS / Salinity

A C Voltage source	: 100 Hz or 1 KHz (Automatic Selection)
Temp. Co-efficient	: 0.00% to 9.99%, User Selectable

### Electrical Conductivity (EC)

Range	: 0.2 $\mu$ S to 200 mS. (6 decadic ranges)
Accuracy	: $\pm 1\%$ of F.S $\pm 1$ digit
Resolution	: 0.01 $\mu$ S in lower range
Cell constant	: Acceptable from 0.1 to 5.0

### Total Dissolved Solid (TDS)

Range	: 0.2 ppm to 200 ppt. (6 decadic ranges)
Accuracy	: $\pm 1\%$ of F.S $\pm 1$ digit
TDS Factor	: 0.1 to 0.99, User Selectable (At 2.0 % Tempco)
Cell constant	: Acceptable from 0.1 to 5.0

### Salinity

Range	: 0.1 to 40 ppt (> Sea water)
Resolution	: 0.1ppt
Accuracy	: $\pm 2\%$ of F.S. $\pm 1$ digit
Cell constant	: 1.0 C.C.

<b>Batch ID No</b>	: 1 to 10, User Selectable
--------------------	----------------------------

<b>Sample ID No</b>	: 1 to 50, User Selectable
---------------------	----------------------------

### Temperature Range & Compensation for pH / EC / TDS & Salinity

Automatic Temp. Range	: 0°C to 99.9°C with PT 100 sensor
Manual Temp. Range	: 0°C to 99.9°C User Selectable

<b>Memory</b>	: Calibration & data storage (even when the power is off)
---------------	--

<b>Data Backup</b>	: Max 500 (10* 50)
--------------------	--------------------

<b>Display</b>	: 240* 128 Monochrome LCD
----------------	---------------------------

<b>RTC</b>	: Date & Time
------------	---------------

<b>Printer Port</b>	: Epson compatible 80 Column D. M. Printer
---------------------	---

<b>RS-232 Port</b>	: PC Link data transfer
--------------------	-------------------------

<b>Power</b>	: 230V AC $\pm 10\%$ , 50Hz
--------------	-----------------------------

<b>Dimension</b>	: 295 (W) X 300 (D) X 145 (H) mm
------------------	----------------------------------

<b>Weight</b>	: 3 kg
---------------	--------

<b>Accessories</b>	<ul style="list-style-type: none"> <li>• pH Combined Electrode</li> <li>• Glass-Conductivity cell 1.0 C.C. <math>\pm 10\%</math></li> <li>• Glass-Conductivity cell 0.1 C.C. <math>\pm 10\%</math></li> <li>• Temperature probe (PT 100 sensor)</li> <li>• Clamp / Stand</li> </ul>
--------------------	---

<b>Optional Accessories</b>	: PC Link software
-----------------------------	--------------------

## pH / EC / TDS / Salinity Meter - 372

### pH / mV Sensor with Temp. Probe



### Conductivity / TDS / Salinity Sensor with Temp. Probe







# Digital pH Meter

Base - 14

Neutral - 7

Acid - 0



**335**  
LED Based



**802**  
LCD Based

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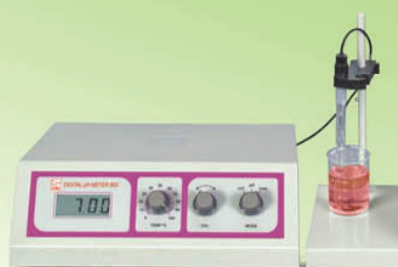
SYSTRONICS DIGITAL pH METER 335 & 802 are high quality precision instruments designed specially to take care of accurate pH measurements in chemical research laboratories. Minimum control on the front panel and the easy of operation make it handy even for routine analysis. Precision is ensured using very low temperature co-efficient components, latest IC regulators, very high input impedance op-amps and LSI circuits. In model 802 can be used for polarizing current is provided to facilitate Karl-Fischer titration, recorder output enables recording of pH/mV measurements on a Strip Chart Recorder, for a continuous monitoring of a permanent record of the results.

The unit is housed in a compact, shock / rust proof & light weight injection molded cabinet.

### Digital pH Meter 335



### Digital pH Meter 802



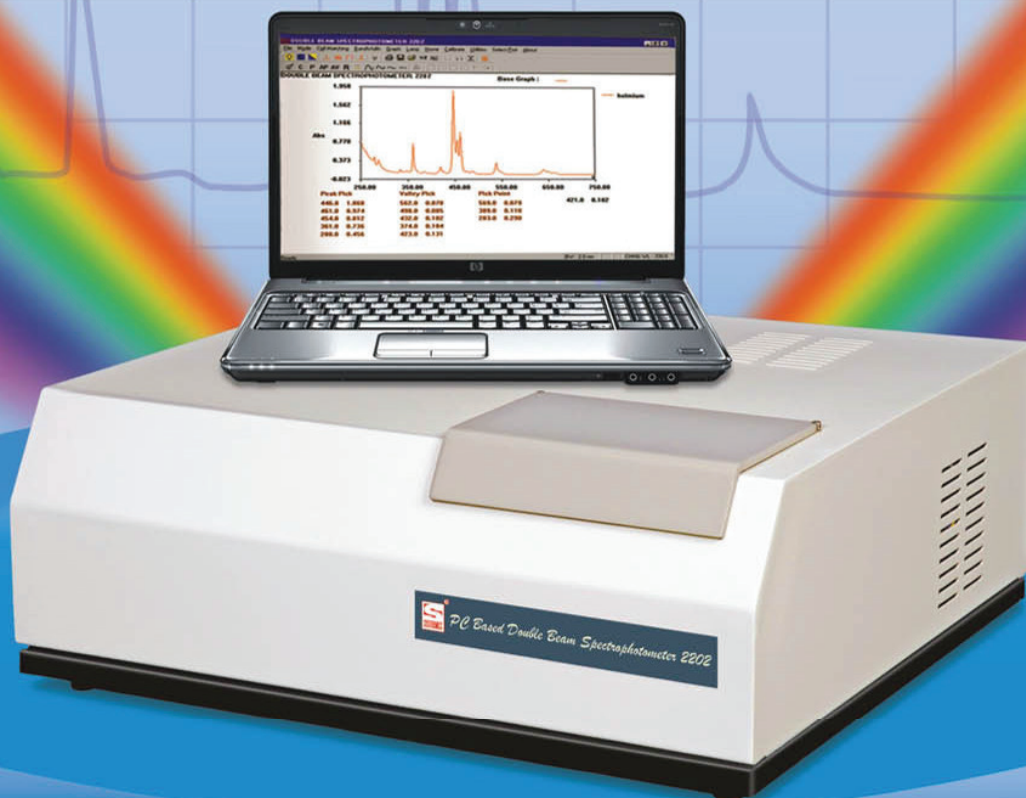
SPECIFICATIONS	335	802
<b>pH Range</b>	: 0 to 14.00 pH	0 to 14.00 pH
<b>Millivolt Range</b>	: 0 to $\pm 1999$ mV	0 to $\pm 1999$ mV
<b>Slope Correction</b>	: 85% to 115%	85% to 115%
<b>Resolution</b>	: 0.01 pH, 1 mV in mV mode	0.01 pH, 1 mV in mV mode
<b>Repeatability</b>	: $\pm 0.01$ pH $\pm 1$ digit for pH $\pm 1$ mV $\pm 1$ digit for mV	$\pm 0.01$ pH $\pm 1$ digit for pH $\pm 1$ mV $\pm 1$ digit for mV
<b>Standardization Range</b>	: $\pm 1$ pH (Approx)	$\pm 1$ pH (Approx)
<b>Temp. Compensation</b>	: 0 to 100° C Dig. Display (Manual)	0 to 100° C Dig. Display (Manual)
<b>Display</b>	: 3½-Digit Red LED Seven Segment with automatic polarity & decimal point	3½-Digit Red LCD Seven Segment with automatic polarity & decimal point
<b>Polarization Current</b>	:	10 $\mu$ A
<b>Recorder Output</b>	:	$\pm 10$ mV / pH in pH Mode $\pm 10$ mV / 100mV in mV Mode
<b>Power</b>	: 230V $\pm$ 10% 50 Hz	230V $\pm$ 10% 50 Hz
<b>Dimension</b>	: 235 (W) X 185 (D) X 85 (H) mm	235 (W) X 185 (D) X 85 (H) mm
<b>Weight</b>	: 1.25 Kg (Approx)	1.25 Kg (Approx)
<b>Accessories</b>	: Combined Electrode Stand & Clamp	Combined Electrode Stand & Clamp
<b>Optional Accessories</b>	: Pt. Electrode & Calomel Electrode for Potentiometric Titration Temp. Sensor pt 100	Pt. Electrode & Calomel Electrode for Potentiometric Titration

\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.





## PC - Based Double Beam Spectrophotometer - 2202



Versatile instrument for Research and Industrial Laboratories. The instrument is designed with precision and technique for accurate qualitative and quantitative Spectrophotometric analysis in Agricultural, Chemical, Pharmaceutical, Medical, Bio-technological, Forensic etc. fields. The PC based operation is user friendly for beginners and gives enough scope for data handling to experienced scientists.

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# PC - Based Double Beam Spectrophotometer - 2202



## SPECIFICATIONS

### OPTICS

Modified Czerny-Turner Monochromator geometry for better aberration correction. Holographic diffraction grating with 1200 lines/mm blazed at 250 nm & Advanced Split Beam Technology with PC controlled settings.

### WAVELENGTH

Range : 200 to 1100 nm  
Accuracy :  $\pm 0.5$  nm  
Repeatability :  $\pm 0.2$  nm  
Resolution : 0.1 nm (200 to 1100 nm)  
Bandwidth : 2.0 nm

### PHOTOMETRIC

Range : -2.5 to 2.5 Abs ( $\pm 4.0$  Abs)  
Accuracy :  $\pm 0.005$  Abs at 1.0 Abs  
Repeatability :  $\pm 0.002$  Abs at 1.0 Abs

### STRAY LIGHT

Less than 0.05%T at 220 nm and 370 nm

### BASELINE CORRECTION

Automatic Baseline correction using Advanced Digital Signal Processing (DSP) techniques

### BASELINE FLATNESS

Within  $\pm 0.003$  Abs from 200 to 1100 nm (excluding noises) after baseline calibration

### SCAN SPEED

Slow, Medium and Fast

### DATA INTERVAL

Depends on wavelength scan range and scan speed

### SAMPLE HOLDER

Five position automatic positioning 10 mm cuvette for Samples and one fixed position for Reference cuvette

### SOURCE

Tungsten-Halogen lamp (320 to 1100 nm)  
Deuterium lamp (200 to 340 nm)

### DETECTOR

Two Si-Photodiodes

### ORDER CUT-OFF FILTER

Four glass filters, automatically positioned to eliminate grating spectral order interferences

### MINIMUM VOLUME

- (i) Without Cell riser 500 $\mu$ l in 1 ml cuvette, 2 ml in 4 ml cuvette
- (ii) With Cell riser 250 $\mu$ l in 1 ml cuvette, 1 ml in 4 ml cuvette

### OPERATING MODES

- (i) Single Wavelength
- (ii) Multi Wavelength (Max. 15 wavelengths)
- (iii) Scan (With multi-scan facility)
- (iv) Time / Kinetic\* Scan (With Derivative facility)

### MEASURING MODES

- (i) Absorbance
- (ii) %Transmittance
- (iii) Concentration (K factor, multi standard)
- (iv) Multi-Component Analysis (Max. 10 components)

### AUTOMATIC CALIBRATIONS / OPTIMISATIONS (GLP/GMP)

- (i) Base line calibration
- (ii) Source optimisation
- (iii) Cell optimisation
- (iv) Wavelength calibration
- (v) Electronics calibration
- (vi) Self-diagnosis

### DATA PROCESSING

- (i) Peak Pick / Point Pick / Valley pick
- (ii) Expansion / Compression of Spectra
- (iii) 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Derivative
- (iv) Averaging of Scans
- (v) Subtraction of first two scans
- (vi) Three levels of smoothening of Spectra
- (vii) Ratio, Corrected ratio, 2 point and 3 point net Abs  
(The facilities can be used for DNA & Protein Analysis)
- (viii) Comparison of concentration

### DATA PRESENTATION

Display of graphic and tabular data on Computer Monitor, permanent data storage on hard disk, hard copy of graphic and tabular data on printer

### COMPUTER SYSTEM

PENTIUM-IV or higher version with Colour Monitor, RS-232 port or USB port with WIN-XP Operating System or above

### RS 232 PORT

PC control (RS-232 or USB to serial)

### POWER

230V,  $\pm 10\%$ , 50Hz

### DIMENSION

520(W) X 500(D) X 190(H) mm

### WEIGHT

23 kg (Approx)

### ACCESSORIES

2 matched 10 mm Quartz cuvettes

### OPTIONAL ACCESSORIES

- Holder for 50 mm or 100 mm cylindrical and rectangular cuvettes
- Personal Computer / Laptop / Windows compatible printer
- \* For Kinetic Scan, use External Control Dry Bath / Incubator





# Flame Photometer KLiNaCa 120



**Electrolyte Analysis Made Easy**

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# Flame Photometer KLiNaCa 120

## SYSTRONICS FLAME PHOTOMETER KLiNaCa 120

is ideally suitable for clinical/medical applications. It is a dual channel instrument capable of quick, simultaneous estimation of Na and K. Facilities are incorporated to select Calcium (Ca) in addition to Sodium (Na) and/or Lithium (Li), in addition to Potassium (K). Simultaneous estimation of two elements minimizes operation time, sample consumption and cost of operation.

### APPLICATIONS:

KLiNaCa120 is specially designed for Biomedical applications. For serum estimation, it offers linearized electronics circuitry enabling direct reading of Na & K values simultaneously. The instrument gives final results in milli-equivalents and therefore no calculation need be done. Calcium can be estimated at a full scale of 100 ppm, which is useful for analysis of drugs, medicines etc.

### SYSTEM PACKAGE

Main Unit 120 &  
Compressor 126



## SALIENT FEATURES

- Dual Channel
- Oil and Moisture free Compressor
- Simultaneous Estimation of two Elements at a time

## SPECIFICATIONS

Scale Range				
Element	Direct Scale	Scale (Medical)	Dilution	Molecular Wt.
Sodium	0-2 meq/l	0-200 meq/l	1:100	23
Potassium	0-0.1 meq/l	0-10 meq/l	1:100	39
Lithium	0-0.2 meq/l	0-2 meq/l	1:10	07
Calcium	0-100 ppm	0-100 ppm	1:1	40

**Reproducibility** ±2% & ±1 digit

**Min. Sample** 5 ml

**Detector** Two Si-Photodiode / Photo IC

**Filters** Narrow band interference filters (Na & K as standard accessories)

**Aspiration time** 30 Seconds

**Fuel Gas** LPG supplied by end user

**Air Compressor** Built-in air regulator, air filter, oil & moisture free having pressure 1 kg /cm<sup>2</sup>

**Power** 230V ±10%, 50 Hz, 10VA

**Weight** Main unit 5.5 kg + 6 kg Compressor

**Dimensions** 400 (W) X 235 (D) X 270 (H) mm (Main unit)  
255 (W) X 210 (D) X 205 (H) mm (Compressor)

**Accessories** (i) Sample beakers with Rack  
(ii) Dust Cover  
(iii) Gas Lighter

**Optional Accessories** Ca & Li filters (at extra cost)





# FLAME PHOTOMETER 128

M I C R O   C O N T R O L L E R   B A S E D



## SYSTRONICS INDIA LIMITED

(SYSTRONICS DIVISION)

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• Website : www.systronicsindia.com • CIN : U32201 GJ1973 PLC002437

MANUFACTURERS OF ELECTRONIC INSTRUMENTS AND SCIENTIFIC EQUIPMENTS.

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CHANDIGARH, CHENNAI, GUWAHATI, HYDERABAD, JAIPUR, KOLKATA,  
LUCKNOW, MUMBAI, NEW DELHI, PATNA & THIRUVANANTHAPURAM.



**SYSTRONICS FLAME PHOTOMETER 128** is a micro-controller based instrument designed to provide automation in operation, measurements and end-result presentation. It does the estimation of Sodium (Na), Potassium (K), Lithium (Li), and Calcium (Ca) in single aspiration of a sample. For user's convenience, the instrument offers two measuring modes : (i) Low Concentration and (ii) High Concentration. There is facility of curve fitting correction for non-linear emission characteristics of element, at higher concentration, store (save) setup for frequently used, measurement and the same can be recalled whenever required with a press of a button. Also re-standardization using single standard to minimize the effect of any unforeseen drift without going for the full recalibration. 4 Line 20-character LCD readout provides easy user interface & presentation of results.

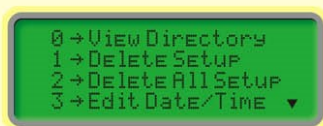
### SALIENT FEATURES

- Micro-controller based automation for ease of operation
- Determination up to four elements with single aspiration (Na, K, Li & Ca)
- Curve Fitting Correction for non-linear emission characteristics of element at higher concentration, maximum five-point calibration
- Storing facility for setups and results (date wise & batch wise, maximum 700 results), the same can be recalled whenever need arise
- 4 Line 20-character LCD readout
- Facility for re-standardization with single standard
- Built-in real time clock for date and time of analysis
- Printout facility for individual sample, batch sample, total day's samples or entire results in the memory (700 max.)
- Air compressor with built-in air regulator and air filter
- PC Link software for transferring data to computer & manipulation of data in computer using RS-232

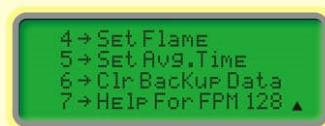
### EASY MENU DRIVEN OPERATION



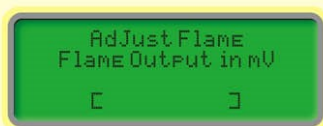
Display



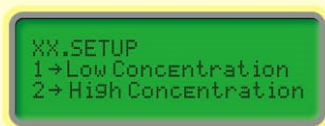
Main Menu



Main Menu



Set Flame



Conc. Measurement



**SYSTEM PACKAGE**  
Main Unit 128 & Compressor 126

### SPECIFICATIONS

ELEMENTS	LOW CONC. MODE (Max.) Without Dilution	HIGH CONC. MODE (Max.) Without Dilution
Na	10 ppm	100 ppm
K	10 ppm	100 ppm
Li	2 ppm	50 ppm
Ca	100 ppm	300 ppm

Suitable dilutions should be made for solutions of higher concentrations than given in the above table

Inbuilt curve fitting software is provided for the high concentration mode

FULL SCALE SENSITIVITY			
Na : 2 ppm	K : 1 ppm	Li : 1 ppm	Ca : 30 ppm
RESOLUTION			
0.02 ppm	0.01 ppm	0.01 ppm	0.03 ppm

- Interference Filters : Na & K Standards, Ca & Li Optional
- Reproducibility : Low Conc. :  $\pm 1\%$  f.s., High Conc. :  $\pm 2\%$  f.s.
- Minimum Sample : 3 ml / element (Approx)
- Averaging Time : 2 to 15 seconds
- Operating Air Pressure: 0.45 kg / cm<sup>2</sup>
- Air Compressor : With built-in air regulator and air filter to deliver stable and moisture / oil free air supply with Pressure of 1 kg / cm<sup>2</sup>
- Fuel Gas : LPG supplied by end user
- Printer Port : Epson compatible 80 Column D.M. Printer
- RS-232 Port : PC Link data transfer
- Memory : Storage of 700 results
- Power : 230V  $\pm 10\%$ , 50 Hz
- Dimensions : 415 (W) X 255 (D) X 305 (H) mm (Main unit)  
255 (W) X 210 (D) X 205 (H) mm (Compressor)
- Weight : Main unit 6.5 kg + Compressor 6 kg
- Accessories : Gas Lighter, Air & Gas Tube
- Optional Accessories : Li & Ca Filter  
Inbuilt automatic flame Ignition  
Epson compatible 80 column D.M. Printer  
PC Link software





# FLAME PHOTOMETER 129



## MICRO CONTROLLER BASED AUTOMATION

### SYSTRONICS FLAMEPHOTOMETER 129

is a micro controller based unit designed for medical applications. The micro controller provides automation in operation, measurements, and end-result presentation. The unit can do the estimation of Sodium (Na), Potassium (K), Calcium (Ca) and Lithium (Li) in single aspiration of a sample.

For user's convenience, the unit offers three measuring modes : 1. Serum 2. Urine 3. Bio-fluid (General). The last mode is helpful for analysing Biological samples other than Serum and Urine.

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## SALIENT FEATURES

- Specifically designed for Medical Applications
- Upto four elements measured with single aspiration
- Automatic Filter selection (Narrow Band interference)
- Curve fittings for Nonlinear Range (Up to 5 Standards)
- Restandardisation avoids Full Recalibration
- Record kept of Date and Time of Analysis
- Measurement Results can be recalled later on Display and Printout (700 Max.)
- Measurement Results can be printed (Individual, Full Batch, of the Day, All in Memory)
- 4-Line, 20-Character Alphanumeric LCD Readout
- Centronics Printer Port for Epson Compatible Dot Matrix
- RS - 232 Interface
- Compressor with built-in Air Filter and Air Regulator

## TECHNICAL SPECIFICATIONS

### RANGE OF OPERATION

ELEMENT	SERUM	URINE	BIO-FLUIDS
Na	0 - 200 meq / ℓ 1 : 100 dilution	0 - 250 meq / ℓ 1 : 100 dilution	All the four elements upto 250 meq / ℓ with 1 : 200 dilution
K	0 - 10 meq / ℓ 1 : 100 dilution	0 - 100 meq / ℓ 1 : 1000 dilution	
Li	0 - 2 meq / ℓ 1 : 10 dilution	-----	
Ca	-----	0 - 10 meq / ℓ 1 : 2 dilution	

- (i) Inbuilt curve fitting software is provided for Serum, Urine and Bio-Fluids  
(ii) Curve fit accuracy :  $\pm 2\%$  f.s.  
(iii) Suitable dilution must be made for concentrations higher than given in the above table

- Filters : Narrow band interference filters Na and K  
Li and Ca (optional)
- Reproducibility :  $\pm 2\%$  f.s.
- Averaging Time : 2 to 15 seconds selectable
- Minimum Sample: Approx 3 ml per element (at Avg. time of 4 sec.)
- Detector : Si-Photodiode
- Aspiration Time : (5 Sec. + Avg. Time) per element + 4 Sec.
- Operating
  - Air Pressure : 0.45 kg / cm<sup>2</sup>
- Air Compressor : With built-in air regulator and air filter to deliver stable and moisture / oil free air supply with pressure of 1 kg / cm<sup>2</sup>
- Fuel Gas : LPG supplied by end user
- Printer Port : Epson compatible 80 Column D. M. Printer
- RS-232 Port : PC Link data transfer
- Memory : Storage of 700 results
- Power : 230 VAC  $\pm 10\%$ , 50Hz
- Dimension : 415 (W) X 255 (D) X 305 (H) mm (Main unit)  
255 (W) X 210 (D) X 205 (H) mm (Compressor)
- Weight : Main unit 6.5 kg + 6 kg Compressor
- Optional : Li & Ca Filter  
Inbuilt automatic flame Ignition  
Epson compatible 80 column D.M. Printer  
PC Link software

## EASY MENU DRIVEN OPERATION

SYSTRONICS  
FLAME PHOTOMETER -129  
READY

Main Menu

SETUP-1  
1 SERUM  
2 URINE  
3 BIO-FLUIDS

Specifically designed for medical use.

SETUP-1 SERUM  
1 VIEW 2 EDIT  
3 RUN 4 SAVE

Operating Menu

SETUP-1 SERUM  
1 Na 2 K\*  
3 Ca 4 Li

Step-by-step guidance for operation.

SETUP-1 SETUP-5  
SETUP-2 SETUP-6  
SETUP-3 SETUP-7  
SETUP-4 SETUP-8

Memories of different setups

1 VIEW DIRECTORY  
2 DELETE SETUP  
3 DELETE ALL SETUPS  
4 EDIT DATE/TIME

Operating steps.



**SYSTEM PACKAGE**  
Main Unit 129 & Compressor 126





# FLAME PHOTOMETER - 130

Electrolyte Analysis Made Easy

Na

K

Li

Ca



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# FLAME PHOTOMETER - 130

## SYSTRONICS FLAME PHOTOMETER 130

Enables speedy and accurate estimation of minute quantities of Sodium (Na), Potassium (K) Calcium (Ca) and lithium (Li). Based on a very simple process, this instrument eliminates the difficult and laborious process involved in classical chemical methods. Analytical laboratories in the following fields would find it a great use :

• Agriculture • Fertilizer • Food • Water Analysis • Cement • Geology • Ceramics • Metallurgy • Plastics • Oil refining

### PRINCIPLE

The solution under analysis is sprayed as a fine mist into a non-luminous flame which becomes coloured according to the characteristic emission of the metal. Wavelengths, corresponding to the element being analysed are selected by a narrow band optical filter and are allowed to fall on a photodetector, whose output is a measure of the concentration of the element. The output of the photodetector is connected to Digital Display to provide the read-out.

### SYSTEM

The total system consists of Main unit and Compressor unit. The main unit of the flame photometer, consists of an atomizer, mixing chamber, burner, optical lens, filters, photodetector and digital display.

Compressor unit consists of control valve, pressure indicator & Air filter to Provide Moisture free & Oil free Air

### SPECIFICATIONS

**System Package** : Main unit-130 & Compressor unit-126

**Sensitivity (FS)**

• Sodium (Na) : 2 ppm

• Potassium (K) : 1 ppm

• Lithium (Li) : 7 ppm

• Calcium (Ca) : 30 ppm

**Accuracy** :  $\pm 2\%$  of FSD

**Display** : 2 ½ Digit LED

**Minimum**

**Sample Volume** : 3.5 ml

**Aspiration Time** : 30 Sec. (Approx)

**Air Pressure** : 0.3 to 0.6 Kg/cm<sup>2</sup>

**Fuel Gas** : LPG supplied by end user

**Power** : 230V,  $\pm 10\%$ , 50Hz

**Dimension Main Unit** : 275(W) X 235(D) X 270(H) mm

**Weight Main Unit** : 4.5 Kg (Approx)

**Accessories** : Gas and Air Tube

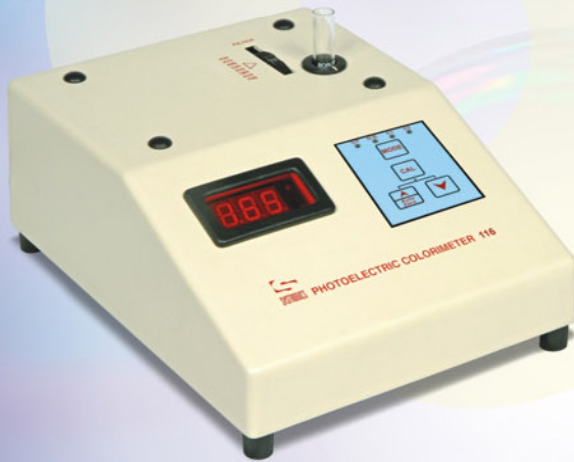
**Optional Accessories** : Li and Ca Filters



\*Technical Specifications, Appearance & model number are subject to change without prior notice in keeping up with the state of art.



## Photoelectric Colorimeter 113 (8 Filter)



## µP Based Photoelectric Colorimeter 116 (8 Filter)

## Photoelectric Colorimeter 114 (5 Filter)



Sold & Serviced by :

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**COLORIMETERS 113 and 114** are designed for use in various colorimetric analysis in fields such as biochemistry, agriculture, veterinary, dyestuffs and pharmaceuticals. They are easy to operate, accurate and reliable.

The colorimeters are operated by passing white light sequentially through an optical colour filter, a fixed opening, and a test-tube containing an unknown solution, whose concentration needs to be determined. The transmitted light from the sample is then detected by a photocell and displayed. The display is calibrated directly in optical density. The power supply is stabilized against voltage fluctuations using electronic regulators. The instruments operate on 230 volts, 50 Hz AC mains supply. The electronic components are easily accessible for better serviceability.

**MICROPROCESSOR BASED COLORIMETER 116** is a virtual mini semi auto analyzer. Easy to use, and accurate. This colorimeter uses sealed narrow band filters to cover the full visible spectrum and a long life silicon photocell. The display is microprocessor based and can store a factor for calculation of concentration. Stored factor is retained in memory even after power off.

The instrument has a 3 digit display and 4 ranges : Percentage Transmission (T), Optical Density (OD) and 2 ranges for Concentration C1 and C2. **It has an automatic Zero setting function** with a keyboard switch to set 0.00 OD or 100% T.

## SPECIFICATIONS

### 113 / 114

Light Source	: Long Life, Broad Spectrum LED covering full visible range
Detector	: Sealed, high sensitivity Silicon Photocell.
Display	: 3-Digit digital display calibrated in optical density only
Resolution	: 0.01 in O.D. or Abs
Power	: 230V AC $\pm 10\%$ , 50Hz
Weight	: 1.5 kg. each
Accessories	: 4 nos. flat bottom test- tubes

### 116

Light Source	: Long Life, Broad Spectrum LED covering full visible range
Detector	: Sealed, high sensitivity Silicon Photocell.
Display	: 3 digit Digital display
Mode	: %T, Abs. (O.D.) & 2 ranges for Concentration C1 and C2
Range	: %T : 0 to 130 (with a normally used range of 0 to 100) Abs. : -0.10 to 1.99 Concentration C1 : 0 to 99.9 Concentration C2 : 0 to 999
Power	: 230V AC $\pm 10\%$ , 50 Hz
Weight	: 1.5 kg
Accessories	: 4 nos. flat bottom test tubes

## FILTERS

### Salient Features :

- Small convenient sample size of 1 ml only
- Long Life Broad Spectrum LED light Source
- Very few controls makes for ease of operation
- Compact space saving design
- Wavelength : 400 to 700 nm selected by filters mounted on a turret
- Light Source : 6 V LED

Type		113	114	116
Sr. No.	Colour	Wavelength (nm)	Wavelength (nm)	Wavelength (nm)
1	Violet	420	420	430
2	Blue	440	490	470
3	Blue/Green	490	-	490
4	Green	520	540	520
5	Yellow /Green	540	-	550
6	Yellow	570	590	580
7	Orange	600	-	610
8	Red	720	650	700

Photoelectric  
Colorimeter

