



## **ADP400** Series Polarimeters

DIGITAL POLARIMETERS AND SACCHARIMETERS WITH OR WITHOUT XPC TEMPERATURE CONTROL

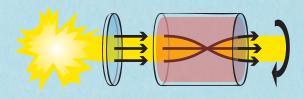


a xylem brand

## **Precision Measurement**

### Optical Rotation for all kinds of applications

When plane-polarised light passes through an optically active substance or chiral compound, the plane of polarisation will rotate by an amount that is specifically related to the product through which it travelled.



As many chemical compounds display this chiral characteristic, the measurement of optical rotation using a polarimeter is commonplace within many different industries as a production control and quality assurance tool. Industries include:

- Sugar
- Food
- Chemical
- Pharmaceutical
- Manufacturing

Optical rotation is relative to the concentration of the dissolved sample and the length over which the measurement is taken and so it is common to quote chemicals as a specific rotation based on all the affecting factors, including temperature and wavelength. Concentration and purity may also be calculated by transformation.

# 100 Years of Excellence

## Who are Bellingham + Stanley?

In 1915, Leonard Bellingham and Frank Stanley were making their mark as pioneers in the development of high quality optical instruments. Over one hundred years later the company they founded is recognised as one of the world's leading manufacturers of refractometers and polarimeters.

At key stages in its history, Bellingham + Stanley® achieved notable advances in the fields of refractometry and polarimetry, producing innovative designs and breakthroughs in technology that are used extensively around the world to this day.

This tradition of excellence and innovation continues today at the purpose-built manufacturing site in Europe.

Continuous research and development means new designs continue to emerge, whilst rigorous testing and calibration procedures ensure instruments are manufactured to the high standards set by Leonard Bellingham and Frank Stanley over 100 years ago.

## Xylem

Having been family owned for almost a century, Bellingham + Stanley is now part of Xylem - a leading provider of laboratory instrumentation. Xylem Lab Solutions' instruments are relied upon every day across more than 150 countries for analysis, measurement and monitoring.

#### **Customer Support**

Bellingham + Stanley prides itself on first class customer service before, during and after each sale. Whether dealing directly with Bellingham + Stanley's knowledgeable customer service team, or indirectly through one of many approved distributors you can be certain of a level of service worthy of its 100 years heritage.

#### Verification & Calibration

On-site instrument verification contracts are available. This service can help keep your instrument delivering accurate results consistently. Service contracts with general maintenance and verification of instrument performance are performed using UKAS certified samples.

Bellingham + Stanley's commitment to quality and customer service ensures that customers throughout Europe and beyond can benefit from services via an approved local distributor. All verification, validation, commissioning and calibration of instruments is carried out using traceable standards.

#### Our Instrumentation

Bellingham + Stanley is a manufacturer of high quality digital refractometers, polarimeters and density meters used globally in industries including food & beverage, chemical, petrochemical, and pharmaceutical.



## **Common Features**

## Easy to use software & intuitive instrumentation for your laboratory

Bellingham + Stanley prides itself on easy-to-use instrumentation with intuitive software. This harmonious design language can be seen throughout ADP Polarimeters, DSG Density Meters and RFM Refractometers offering customers a consistent look and feel.

The joined-up thinking seen throughout Bellingham + Stanley's high quality engineering means that users of our instrumentation will benefit from continuity across devices. Whether taking readings on an ADP450 polarimeter with a tactile keypad, or measuring Brix with an RFM340-T with touchscreen technology. Customers will also discover fast networking abilities, USB functionality for optional peripheral devices and exporting of data (via PDF/.CSV/.XML) to USB drives. Large capacity memory means room for over 10,000 readings without the need to purchase costly storage.

Our instrumentation stands out from the crowd with ocean-blue durable plastic casing, reminiscent of Xylem's water values, and are hardy enough to withstand the rigors of a busy laboratory or factory.

#### Method System

Methods are a simple way to get to the measurements you require, fast. This effective system simplifies the reading and calibration process with "one touch recipes" for common measurements.

#### Fast Read Time

Results displayed in rapid time, with readings in less than 5 seconds depending on model and mode selected. Smart temperature stabilisation is activated prior to reading to give the most accurate results in super-fast time.

#### **Durable Construction**

Designed and built to the highest standards for over 100 years. All ADP Polarimeters and ADS Saccharmimeters are made using premium quality parts, durable ABS casing and have been designed for accuracy and efficiency.



# The Method System

## The beating heart of our products

At the heart of all Bellingham + Stanley digital benchtop instrumentation is the Method System. A Method is a predetermined, named set of measurement criteria that can be accessed at the touch of a button, allowing customers to access their desired settings instantly and consistently. A single Method includes all the settings necessary for the instrument to take and check a particular sample, including scale, temperature compensation type, temperature set point, stability type, limit check and more.

If a workflow requires several products with different reading requirements, then a Method can be added for each of them. For example, in the food and beverage industry a range of individual soft drinks could be regularly measured and the display can show whether each product is within its set tolerance. Alternatively, within pharmaceutical, Methods may be created to fulfil different Pharmacopoeia requirements or Monographs.

When working within strict procedural conditions, such as FDA regulations 21 CFR Part 11, using the Method system will offer tighter security and peace of mind if so desired. Once set, Methods access only allows for a change of Method. Only users with higher "setup security rights" are able to change the measurement settings of a Method. This will ensure an analysis is performed the same way every time.

ADP Polarimeters come fully equipped with a library of commonly used Methods but for those that need to refine a Method or create a completely new Method for regular use, this is also possible. User created Methods (along with other settings) can be copied to other ADP Polarimeters via USB stick.



Advanced Co	onfiguration	8	₿√ 20.0	20.2	08:40			
1. Stability			smart					
2. <b>Lim</b>	2. Limits			yes				
з. <b>Res</b>	з. Resolution			high				
4. Mul	4. Multiplication			1.0				
5. Ran	5. <b>Range</b> 89° to +89° (std)							
Quit	Up	Do	wn	Sel	ect			

ADP/S Series Advanced Configuration

Measurement Display			₿✓ 20.0	0 20.0	12:17
Please wait Temp ±0.2, stable 23 of 30 secs					
Temp:	20.0	Scale	e: an	gular (	°a)
OD:	0.0	TC:		n	one
Zero	Print	Мо	de	Me	nu

ADP/S Series Reading Sample

Maintenanc	e Report	8	₿✓ 20.0	0 20.0	09:16	
Last Servio Interval:	ce/Inspect	tion 🥋 Once e	every si	ix mon	ths	
Service/In: days.	Service/Inspection is due within the next 5 days.					
Quit				Ne	∋xt	

ADP/S Series Service Announcement

Saveo	l Result	ts		8	₿ <b>√</b> 2	0.0 20	.2 08:37
Date	Time	Batch	Ope	Reading	Temp	OD	Settings
10/03/17	08:31:17	gcp33	admin	33.595	20.2	0.1	°a gc
10/03/17	08:30:12	jwa68	susie	72.418	20.2	1.1	°a nc
10/03/17	08:29:51	jwa68	susie	71.119	20.2	1.1	°a qc
10/03/17	08:29:27	jwa68	susie	69.591	20.2	1.1	°a qc
10/03/17	08:28:22	qcp33	admin	33.599	20.2	0.1	°a qc
10/03/17	08:27:18	qcp30	joanna	33.763	20.2	0.1	°a qc
10/03/17	08:26:04	jgw01	edw	20.677	20.2	0.5	°a nc
10/03/17	08:25:14	jgw01	edw	22.364	20.2	0.5	°a nc
10/03/17	08:24:48	wjm26	admin	-0.001	20.2	0.0	°a nc
10/03/17	08:24:07	wjm26	admin	0.003	20.2	0.0	°a nc
					Se	lected re	esult: 6 of 10
Qı	lit	U	р	D	own	(	Options

ADP/S Series Saved Results



#### ADP Polarimeters

Visit the Bellingham + Stanley website to learn more about our polarimeters and accessories.

## ADP400 Series Digital Polarimeters

The ADP400 Series is a range of general-purpose single wavelength polarimeters suitable for sugar, food, chemical and pharmaceutical industries. ADP400 polarimeters are available in two distinct models: ADP450 with Xylem Peltier Control (XPC) - Xylem's patented internal Peltier temperature control system, and ADP430 - a fully featured single wavelength polarimeter without temperature control.

Both models use standard ICUMSA polarimeter tubes with a maximum length of 200mm. For utmost performance in the Peltier controlled version, stainless steel tubes should be used. Low volume samples are also catered for with the addition of stainless steel, leur taper tubes.

These polarimeters contain proven optics, designed by Bellingham + Stanley, featuring "no maintenance" yellow LED and interference filter. Combined with a photodiode detector these technologies allow for the reading of samples of up to 3.0 OD at the commonly used sodium (589nm) wavelength.

ADP400 Series polarimeters feature angular and sugar scales (ISS). They can be programmed with user scales, industry standard methods for displaying invert sugar, inversion (A-B) or when applying other factors such as tube length and concentration, Specific Rotation (or concentration when entering specific rotation). This flexibility makes them ideal for use within laboratories where compliance with Pharmacopoeia is required.

Measuremer	ıt Display	8 ℓ√ 20	.0 19.9 16:28
	77	ГП	
		58	
Temp:	19.9	Scale: a	ngular (°a)
OD:	0.0	TC:	none
Zero	Print	Mode	Menu

ADP400 Series Measurement Display

Measurement Display			} ₿√ 20.	0 20.0	12:17	
specif. rotation-m			°a:		5.26	
	<b>ПП</b>	]		26.0		
	10.12			Moist.%: 0.0750 Len: 2.000dm		
Temp:	20.0	Sca	le: Spe	cif. Rot	ation	
OD:	0.0	TC:			one	
00.	0.0				0110	
Zero	Print	Me	thods	Me	enu	

ADP400 Series Measurement Display for Specific Rotation



## Three decimal place precision makes for reliable results

ADP400 Series polarimeters have a resolution of 0.001 angular degrees (°A) and are capable of reading to an accuracy of ±0.010 °A. When working under laboratory controlled conditions, ADP400 polarimeters also offer excellent reproducibility of up to 0.002 °A.

Additionally an easy-to-use Method system gives convenient access to popular measurement types including continual measurement of Optical Rotation, Specific Rotation, Concentration, Inversion, or our new "single-shot" measurement which gives a snapshot result at any given time.

#### Choose how to take your readings

You can take readings with the ADP400 Series polarimeter in either continuous measurement or the convenient 'single-shot' mode. In continuous mode a reading is taken over a set period of time and a stabilised result displayed at the end of the period. It is excellent for monitoring instrument and sample stability, giving the user a "feel" for the reading obtained.

The "single-shot" mode is ideal for pharmaceutical applications where a discrete value is provided without the interpretation of the operator, satisfying operating procedures where interpretation by a third-party, the operator, is not permitted.

#### Your data, your choice

ADP400 Series polarimeters come equipped with a new full colour 4" high definition display meaning results are clearly visible to the operator. The expanded memory ensures that over 8000 measurements and recorded logs of instrument configuration can be saved and viewed or output to LIMS or Secure PDF.

Calibration and configuration of the instruments can be password protected, accessible by keypad entry or, for convenience, using a fully configurable RFID tag. This, together with the audit trail, facilitates operation in environments conforming to FDA regulation 21 CFR Part 11 or GLP.

The ADP400 Series polarimeters incorporate a number of industry standard interfaces making it easy to connect to peripheral devices including barcode readers, printers and USB memory sticks for external storage.

With the addition of a USB memory stick operators can output results to a secure PDF using the "Print to Secure PDF" feature that is now commonplace amongst many Bellingham + Stanley laboratory instruments. The USB port can also be used to accept RS232 via an available adaptor.

#### **Key Features**

- High accuracy polarimeters
- Simple Method system
- FDA regulation 21 CFR Part 11 compliant
- US/EP/BP/JP compliant
- External keyboard support
- RFID security for user clearance
- Ethernet port for networking



#### **Xylem Peltier Control**

Our patented XPC temperature control system ensures fast, reliable temperature stability on ADP450 polarimeters without the need for a cumbersome waterbath.

If your application doesn't require temperature control then choose the ADP430. A fully featured polarimeter suited to waterbaths and where temperature control is unrequired.

# ADS400 Series Digital Saccharimeters

## Purpose built for the sugar industry

The ADS400 Series Saccharimeter is a purpose built polarimeter that displays results in the ISS (°Z) scale.

This series of Bellingham + Stanley instruments has been primarily designed for busy sugar laboratories, factories and tare houses. The ADS400 Series is available in 2 wavelengths: Sodium (589nm), and NIR (850nm) which facilitates "lead-free measurement".

Both of the wavelength variations can be purchased with or without XPC Technology - Xylem's patented on-board Peltier temperature control system for measuring optically active samples at stable temperatures.

Funnel flow tubes are easily installed thanks to the interchangeable lid of the ADS400 Series. Funnel flow tubes are ideal for areas of your business that have a rapid throughput of samples. Customers may use standard ICUMSA tubes with the ADS400 Series, so existing tubes can be used whilst replacements are easy to obtain.

Measureme	nt Display	8 ₿√ 20.	0 20.0 16:13
	ПЛ	ГП	
	<b>7</b> ].	77	
-	• • • •	Scale:	iss (°z)
Temp:	20.0	TC:	sugar
OD:	0.0	Tube Len:	200 m m
Zero	Save	Mode	Menu

ADS400 Series Measurement Display

Measuremer	nt Display		8 16:12
purity	10.84	°z: POL Brix Len:	28.00
Temp: OD:	26.2 0.0	Method Scale: TC:	: normal purity sugar
Zero	Save	Metho	ds Menu

ADS400 Series Measurement Display for ISS Scale



### Available as part of a complete Automatic Purity System

The ADS400 Series Saccharimeters are designed to operate in isolation (no PC required) but work best when connected to an RFM300 or RFM700 Series Refractometer from Bellingham + Stanley. By connecting a digital refractometer to the ADS400 you can create a complete Purity system which will offer automatic, accurate purity readings directly pushed to the ADS400 Series display. Automatic Purity Systems not only speed up your process, but can save you money with accurate and consistent results.

Speak to your Bellingham + Stanley representative today to find out more about a low cost complete Automatic Purity System.

#### **Key Features**

- ATC, waterbath or XPC options
- Sodium or NIR
- Glass, XPC or funnel tube options
- Continuous or single-shot readings
- ISS, purity or concentration display

## Robust casing, energy efficient and easy to use

The ADS400 Series is built using a corrosion-free polyurethane foam case - sealed to prevent moisture and dust ingress to its optics, as well as keeping out insects and small rodents that can sometimes



find their way into other instruments in certain environments. Low power consumption and low maintenance is achieved using an LED light source which offers light for the length of the product lifetime.

The external power unit keeps internal temperatures minimal, and in combination with the sealed casing makes the ADS400 Series Saccharimeter a great choice for working in high humidity environments. Waterproof power supplies are also available.

Thanks to its intelligent setup wizard, easy-to-use keypad with colourful HD display and intuitive software, operating the ADS400 Series is quick and simple. RFID login allows several levels of access, as well as offering an audit trail, meaning settings can be hidden away so users can only take readings; ideal for allowing use of the instrument no matter what level of training.

#### **RFM Refractometers**

With over 100 years experience, Bellingham + Stanley offers one of the largest choices of digital refractometers in the world today.

Choose between RFM700-M/RFM300-M Series or RFM300-T Series digital refractometers to complete your Automatic Purity System.

Our refractometers are precision instruments offering accurate measurements whilst also being robust enough to use in a factory or Tare house.

## **Quartz Control Plates**



### **Certified Reference Materials**

Bellingham + Stanley offer a choice of Quartz Control Plates (QCP) for verifying and calibrating polarimeters. QCPs are made to the highest standard and may be supplied with optional Certificates of Calibration showing traceability to PTB. (UKAS Certificate calibrated in accordance with ISO/IEC 17025:2017 @ specified wavelength between 546-900nm; Manufacturers certificate at specified wavelengths between 300-545nm).

When used with an ADP polarimeter manufactured by Bellingham + Stanley, a thermal block may be used to provide mechanical contact to the instrument's external temperature sensor, allowing the use of quartz temperature compensation for added accuracy.

For added performance, an XPC Adaptor is also available for use with Peltier temperature controlled Bellingham + Stanley polarimeters that incorporate XPC Technology.

As part of Good Laboratory Practice, it is recommended that Quartz Control Plates are sent to our UKAS laboratory at regular intervals determined by the user's own Standard Operating Procedure for inspection and recertification.



0834

# A Range of Sample Tubes

## Standard Glass Polarimeter Tubes

Standard glass tubes feature nylon (plastic) end caps with a choice of filling style and are ideal for non-volatile or corrosive samples in food, sugar, chemical, and academic applications.

- Bubble tubes: To remove any bubbles from the light path
- Centre fill tubes: For easy filling of samples from a beaker or pipette
- Cup fill tubes: For easy filling of viscous samples

### Special Glass Polarimeter Tubes

Special polarimeter sample tubes such as those with metal (stainless steel) end caps are available. These tubes have replaceable seals between the glass tube and end cap making them ideal for applications where the sample may degrade the adhesive used with standard tubes.

Glass polarimeter tubes with replaceable PEEK end caps are commonly used in the chemical and pharmaceutical industries where Hydrochloric Acid (HCl) forms part of the sample under test.

- Centre fill tubes with metal or PEEK end caps
- Cup fill is available on tubes with metal end caps only

### XPC Tubes for use with Peltier Controlled Polarimeters

For the best temperature response during measurement, choose stainless steel polarimeter tubes which work in harmony with the XPC Peltier Temperature Control of the ADP450 (and ADP600 Series) digital polarimeters. These tubes have removable filler cups so that sample may be introduced easily. Temperature sensors may also be applied to the sample itself by using special collars that prevent the probe from disturbing the light path.

- Removable filler cups
- Perfect for temperature sensors

## Low Volume Sample Tubes

Low volume tubes are especially suited to "closed systems" where the prevention of sample loss through evaporation is imperative, or for when working with automated workflows.

- UNF female threads (10, 25 & 50 mm)
- UNF 28 pipe adaptors included (10, 25 & 50 mm)
- Serrated nozzle adaptors available
- Luer taper female nozzles (5 mm only)

### **Funnel Flow Tubes**

Designed for use in the sugar industry where many samples are required to be taken repeatedly and at speed. Supplied as standard with ADS400 Flow models. To accommodate Funnel Flow and Low Sample tubes, slotted lids are also available.

- For rapid sample throughput
- XPC and Water Jacketed Tubes available



## Keeping In Line With Strict Regulations

## What is 21 CFR Part 11?

FDA Regulation Title 21 CFR Part 11 (also known as 21 CFR 11) Electronic Records/Electronic Signatures, is the part of the Code of Federal Regulations that establishes the United States Food and Drug Administration (FDA) regulations on electronic records and electronic signatures. Specifically, 21 CFR 11 defines the requirements for submitting documentation in electronic form and the criteria for approved electronic signatures.

## Who needs to comply?

All FDA-regulated industries, which includes pharmaceutical, production of medical devices, food & beverage manufacturers and cosmetics companies, must comply with 21 CFR 11. Computer systems (including analytical instruments with onboard computers) which store or produce data to make quality control decisions, or reporting data for the FDA must comply with 21 CFR 11. This includes any laboratory results used to determine quality, safety, strength, efficacy, or purity. In manufacturing environments, this includes data used to make decisions related to product release and product quality.

Bellingham + Stanley has designed a selection of its instruments to help customers easily comply to regulations. The ADP digital polarimeters offer a wealth of benefits for users working in industries with strict procedures and processes.

### Key Benefits

- Compliance without an intermediate PC
- Server synchronised clock to prevent data tampering
- Multi-reading PHR Method for batch measurement
- Print to Secure PDF with custom header
- Electronic signatures including multi-verification (Submitter > Reviewer >> Approver)
- XML output strings with encryption & MD5 check for easy connection to LIMS/Server
- Configurable users enforcing unique login & signatures
- Full instrument configuration audit trail
- Full validation documentation, service & support

"By removing the need for an intermediate PC, our 21 CFR 11 compliant polarimeters can deliver great performance simply and efficiently."







#### Read more online

Read our blog to learn how our products can help you comply to regulation 21 CFR Part 11.

## Multi-wavelength Polarimeters

## High accuracy polarimeters with XPC temperature control technology

The ADP600 Series polarimeters are XPC temperature controlled polarimeters designed to meet the needs of the most demanding applications within the chemical and pharmaceutical industries. Available in a variety of single, dual and multiple wavelengths.

### A range of polarimeters to suit your needs

Bellingham + Stanley manufactures high quality digital polarimeters for use in a variety of applications with the ADP600 Series polarimeters satisfying a demand for intense workloads, such as researching the characteristics of chiral compounds.

These XPC Peltier temperature controlled digital polarimeters vary by wavelength of measurement, including the highly sensitive ultra-violet region. No matter which model you choose, they all feature an integral Method system (seen across all of Bellingham + Stanley's benchtop instrumentation), a robust high definition touchscreen and are capable of measuring to 4 decimal places.

RFID user clearance comes as standard in the ADP600 Series Polarimeters. This simple but effective technology gives users unique access to the instrument via a personalised key fob, and allows for certain settings to be tailored to individuals (or predetermined groups). Using RFID and individual users allows for a detailed audit trail of the polarimeter's use.

Common software is present throughout Bellingham + Stanley's range of polarimeters and refractometers, through coloured accents to our Method system and key commands, making it easier to learn, adapt, and train others. Choose to make Bellingham + Stanley standard in your lab or factory and benefit from joined-up thinking across instruments including digital polarimeters, refractometers and density meters.

## **ADP General Specifications**

Specifications	ADP450	ADP430
<b>Scales</b> Angular Degrees (°A) International Sugar Scale (°Z) User Scales/Methods	-355 to +355 -225 to +225 100	-355 to +355 -225 to +225 100
<b>Resolution</b> Angular Degrees (°A) International Sugar Scale (°Z)	0.01/0.001 (selectable)	0.01/0.001 (selectable)
<b>Accuracy</b> Angular Degrees (°A) International Sugar Scale (°Z)	±0.010 ±0.030	±0.010 ±0.030
<b>Precision (Reproducibility)</b> Angular Degrees (°A) International Sugar Scale (°Z)	±0.002 ±0.005	±0.002 ±0.005
Temperature Control	XPC Technology	ATC only (waterbath ready)
<b>Temperature Range</b> Ambient Sample Operating	5-40 °C 5-95 °C 15-35 °C	5-40 °C 5-95 °C 5-40 °C
Sensor Accuracy	±0.1 °C	±0.1 °C
Temperature Stability	±0.2 °C	Waterbath dependent
Stability Checks	None/delay on Single-S	hot
Temperature Compensation	None, ICUMSA, Quartz	or User Defined
User Scales & Methods Library	PHR-MEAN statistical, S B), Invert Sugar, User De	pecific Rotation, Concentration, Inversion (A- efined.
Reading Time	Continuous measureme	ent and display or single shot
Tube Length	10 to 200 mm	
Sample Illumination	Sodium (589nm) Light E	Emitting Diode (100,000+ hours)
Beam Diameter	4 mm	
Optical Density	0.0 to 3.0 OD	
Instrument Housing	Polyurethane foam with	aluminium base
Interfaces	1 x USB (A), 1 x Ethernet	, RS232 via USB adaptor (optional accessory)
Power	Instrument: 24 V DC, ±5 External PSU: 100-240V	
Humidity Range	<90% RH (non condens	ing)

## **ADS General Specifications**

Specifications	ADS400 (589nm)	ADS400 (850nm)		
Wavelength	Sodium	NIR		
<b>Scales</b> International Sugar Scale (°Z) User Scales/Methods	-225 to +225 100	-225 to +225 100		
<b>Resolution</b> International Sugar Scale (°Z)	0.01/0.001 (selectable)	0.01/0.001 (selectable)		
<b>Accuracy</b> International Sugar Scale (°Z)	±0.030	±0.060		
<b>Precision (Reproducibility)</b> International Sugar Scale (°Z)	±0.005	±0.010		
User Scales & Methods Library	Rotation (°Z), % Concentration, P Sugar, % Inversion (A-B).	'urity, angular (°A), % Invert		
Reading Time	Continuous measurement and d (selectable)	isplay or single shot		
Tube Length	100 to 200 mm			
Sample Illumination	Light Emitting Diode (100,000+ hours)			
Beam Diameter	4 mm			
Optical Density	0.0 to 3.0 OD (using OD filters a	t 589nm & 850nm)		
Instrument Housing	Polyurethane foam with aluminiu	ım base		
Interfaces	1 x USB (A), 1 x Ethernet, RS232 v accessory)	ia USB adaptor (optional		
Power	Instrument: 24 V DC, ±5%, <2A External PSU: 100-240V, 50-60H:	z (supplied)		
Humidity Range	<90% RH (non condensing)			
Temperature Specifications	ADS400 (ATC)	ADS400 (XPC)		
Temperature Control	ATC	Xylem Peltier Control (XPC)		
Temperature Compensation	None, ICUMSA, Quartz or User E	Defined		
Measuring Range	5-40 °C	15-35 °C		
Sensor Accuracy	±0.1 °C	±0.1 °C		
Temperature Stability	Waterbath dependent	±0.2 °C		
Stability Checks	None/delay on Single-Shot	None/delay or SMART		

# Product Order Guide

### Choose your configuration

ADP400 Series digital polarimeters and ADS400 Series digital saccharimeters are available in the configuration of your choice. The most common of which are listed in this brochure. Should you have different requirements please speak to our Customer Care team who will be happy to help you configure your ideal setup.

Features	Code	Sodium	NIR	XPC	100 mm	200 mm	Funnel Flow
ADP430	37-30	•	-	-	-	•	-
ADP450	37-50	•	-	•	-	•	-
ADP450 (100)	37-51	•	-	•	•	-	-
ADP450-HCI	37-98	•	_	•	_	٠	_
ADS435	37-25	•	-	-	-	•	-
ADS455	37-45	•	_	•	_	٠	_
ADS438	37-85	-	•	-	-	•	-
ADS458	37-95	_	•	•	_	•	_
ADS435-F100	37-26	•	-	-	•	-	•
ADS435-F200	37-27	•	_	_	_	•	•
ADS455-F100	37-46	•	-	•	•	-	•
ADS455-F200	37-47	•	_	•	_	•	•
ADS438-F100	37-86	-	•	-	•	-	•
ADS438-F200	37-87	_	•	_	_	٠	•
ADS458-F100	37-96	_	•	•	•	_	•
ADS458-F200	37-97	_	•	•	_	•	•

## ADS400 Funnel Flow configurations

ADS400 Funnel Flow packages come complete with either XPC or water-jacketed funnel flow tubes, associated slotted lids and XPC adaptors as appropriate.



**Different Requirements?** 

Scan the QR code to visit our website and contact us using the form or call us today.

## Xylem |'zīləm|

The tissue in plants that brings water upward from the roots;
a leading global water technology company.

Bellingham + Stanley is part of Xylem Lab Solutions and is a leading provider of refractometers, polarimeters and density meters.

Xylem Lab Solutions' global brands have been leaders in the laboratory instrumentation market for decades, and are relied upon every day across more than 150 countries. Working in true partnership with our clients, we listen, learn and adapt to individual needs, offering deep application expertise built upon our long history of innovation in instruments and services. Our solutions for analysis, measurement and monitoring help enable many of today's modern laboratories and industrial processes, and provide our customers the trusted and high performing solutions they need to succeed.

Xylem Lab Solutions is part of Xylem Inc., a global company focused on solving the world's most challenging and fundamental water issues. As accurate analysis is crucial to the water industry, Xylem Lab Solutions taps its diverse product brands for leadership in that field and beyond, providing the best laboratory and field monitoring instrumentation across a wide variety of industries.

#### For more information on how Xylem can help you, go to www.xylem.com



The United Kingdom Accreditation Service (UKAS) is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of calibration certificates.



#### Bellingham + Stanley, a Xylem brand

Xylem Am Achalaich 11, 82362 Weilheim, Germany

sales.bs.uk@xylem.comwww.bellinghamandstanley.com