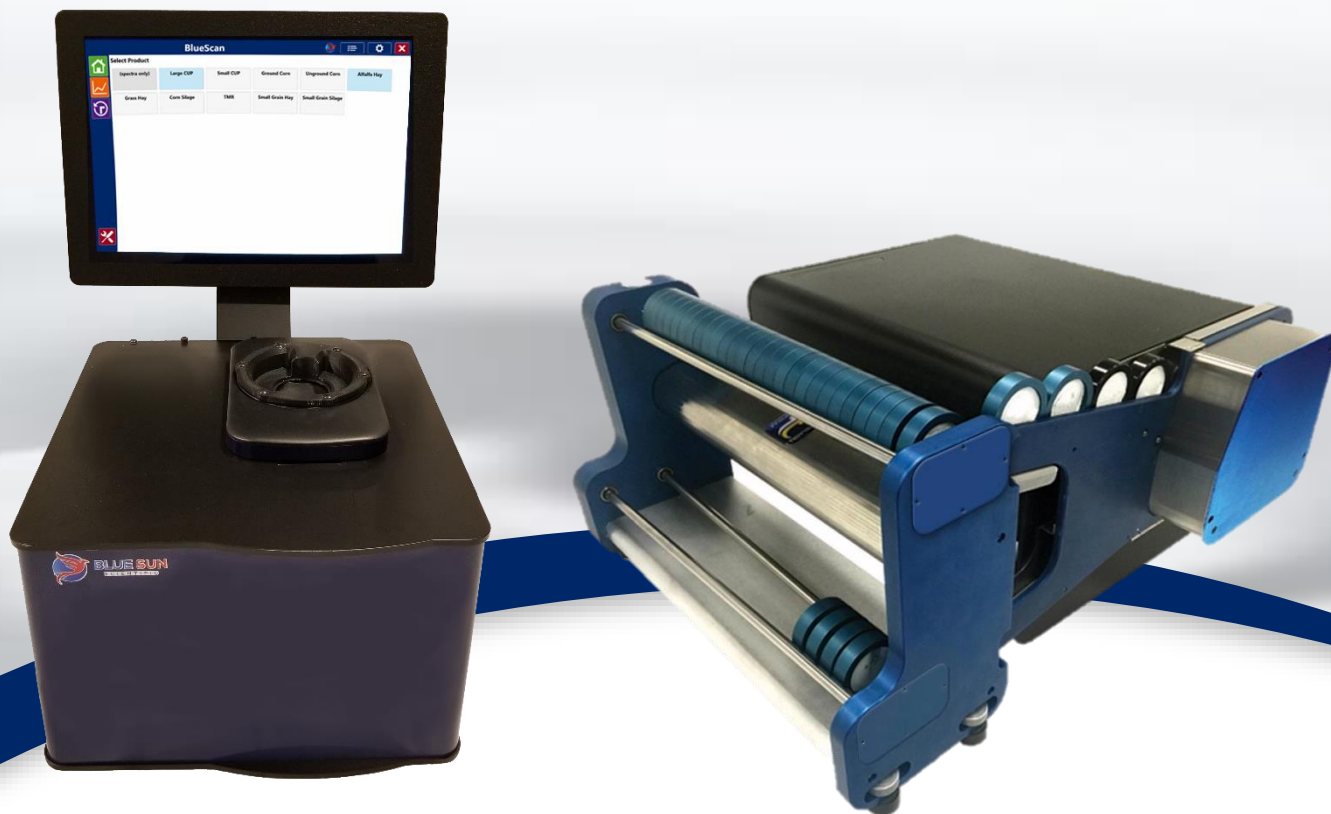


# Phoenix NIR Analyzer

With Internal Drift Prevention



## Next Generation NIR Analyzer

- Innovative sample handling
- Transfer your existing databases
- Ideal for at-line and in the lab
- Rapid analysis
- Internal drift protection
- Flexible data handling
- User friendly software
- Little to no sample prep
- Small footprint
- Blue Sun Guarantee

The new Phoenix NIR Analyzer is an ideal solution for manufacturers and laboratories that require rapid, accurate and reliable analysis.

The Phoenix employs a scanning monochromator, which is the NIR technology most trusted by agriculture and food companies and laboratories around the world.

It can simultaneously measure multiple parameters including moisture, protein, fat, fiber, starch, sugar, ash in addition to many others.

The Phoenix is available in both a top window configuration for NIR operators that require sample flexibility as well as a sideloader configuration with an optional autosampler for NIR operators seeking a high throughput analyzer.

# EXPLORE THE PHOENIX TOP WINDOW



All Phoenix instruments are manufactured at Blue Sun Scientific's headquarters in Jessup, Maryland.

## Easy to Use Interface

- 12.3" Microsoft Surface Touchscreen
- Simple tab design
- Fast access to results
- Flexible data handling



## NIR Monochromator

The most trusted NIR technology used by the food and agriculture industries



## Innovative Sample Car

- Scans large and small cups
- Scans entire sample cup
- Integrated standards



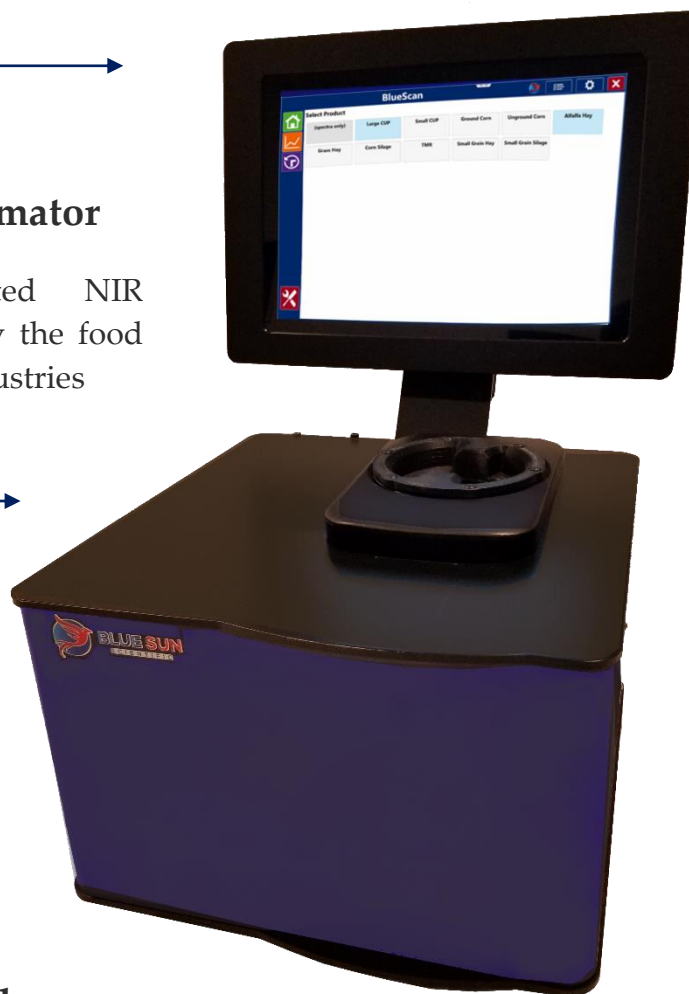
## Easy to Access Lamp

The 5k-10k hour lamp can be replaced in under 5 minutes with no special tools needed.



## Fully Sealed

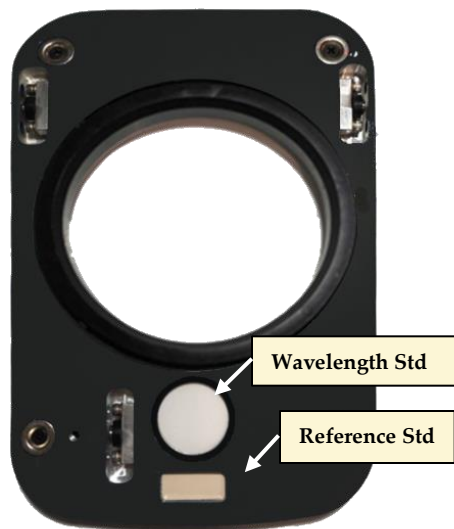
- Rugged and robust
- Ideal for in-lab or at-line analysis



**HIGHLY ACCURATE, RUGGED AND EASY TO MAINTAIN**

# Innovative Sample Car with IDP

The Phoenix sample car offers internal drift prevention (IDP) which improves accuracy and consistency and reduces the need for bias adjustments.

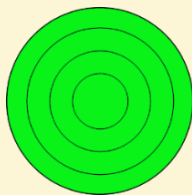


**1. IDP Embedded Standards:** The sample car contains embedded wavelength and reference standards, which are measured at the sample plane. This ensures your reference standards are never lost or damaged.

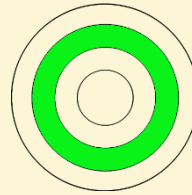
**2. IDP Automatic Reference Scans:** Reference scans are taken before each sample scan to ensure consistent, reliable results.



**3. Scans the Entire Sample Cup:** The sample car moves both laterally as well as rotates, allowing you to scan the entire sample cup compared to less than 25% on other NIR instruments. This reduces sampling error and improves repeatability in your testing.



Phoenix Scan Area



Other Instruments' Scan Area

## Sample Flexibility

The Phoenix is compatible with multiple sample cups for a variety of sample types.



Large cups for unground and heterogeneous samples



Small cups for ground and homogeneous samples



Custom cups for unique or disposable samples

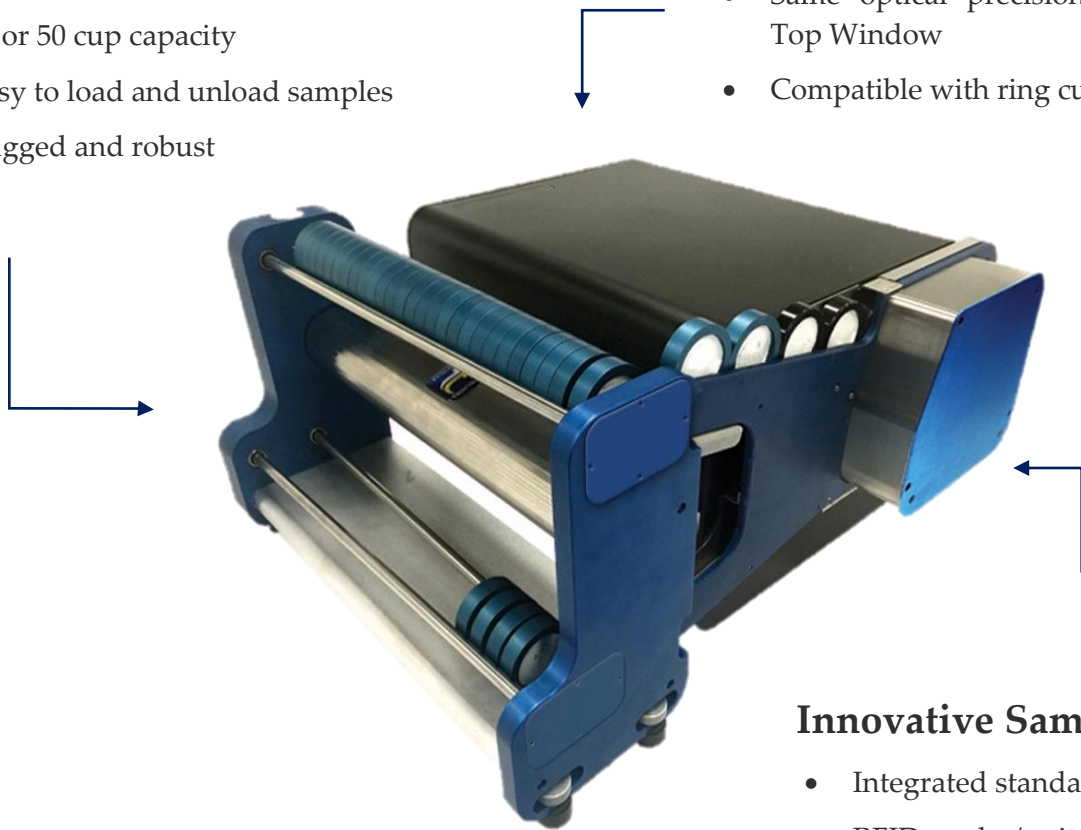
# Phoenix Sideloader with Autosampler

## Autosampler

- 30 or 50 cup capacity
- Easy to load and unload samples
- Rugged and robust

## Phoenix Sideloader

- High throughput solution when paired with autosampler
- Same optical precision as Phoenix Top Window
- Compatible with ring cups



## Innovative Sample Carousel

- Integrated standards
- RFID reader/writer

For high throughput testing, the Phoenix 5000 is available in a sideloading configuration with optional autosampler

Operators can streamline NIR testing with this highly automated and reliable solution.

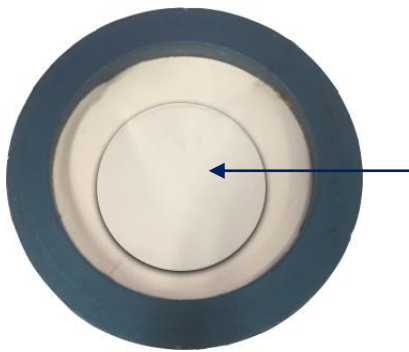
Samples can be easily loaded into the autosampler and NIR testing runs can be quickly programmed so that the instrument can be left to run unattended.

A built in RFID tag system ensures results are captured correctly.

# Autosampler RFID Tag System

The Phoenix's RFID tag system ensures the highest throughput and consistent results by eliminating the need for work lists or tracking the order of sample cups.

Small RFID tags are affixed to the sample cup cardboard backs and are programmed via an external RFID reader/writer.



## RFID Tag

- Attaches to sample cup back
- Contains sample ID and product type
- Programmed via RFID reader/writer
- Reusable



## RFID Reader/Writer

- Easy to program sample cups
- Connects to PC via standard USB cable



After the RFID tag is programmed, sample cups can be loaded directly onto the autosampler via the upper rail in any order.

The Phoenix Sideloader has an integrated RFID reader which reads the sample information from the RFID tag before scanning the sample cup.

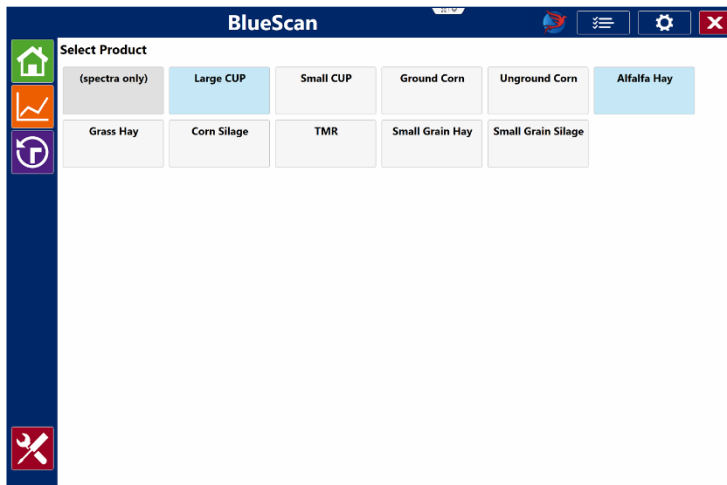
The Phoenix software matches the sample with the correct calibration to ensure correct results.

After each analysis, the sample cups are released onto the lower rail of the autosampler for easy removal.



# Introducing BlueScan

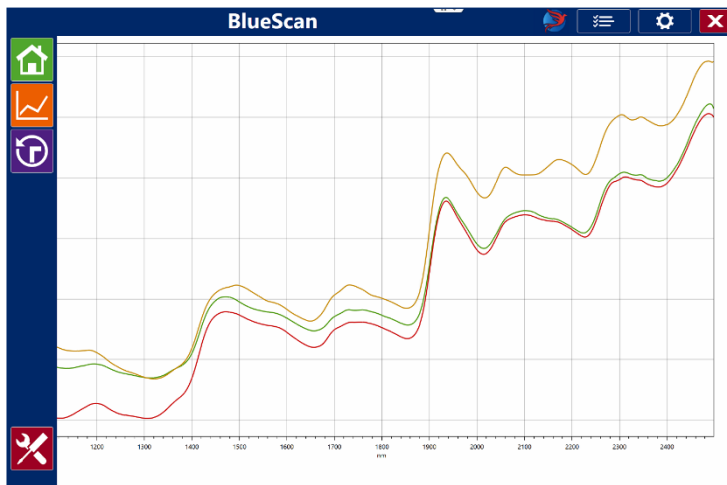
*Software Designed for Ease of Use*



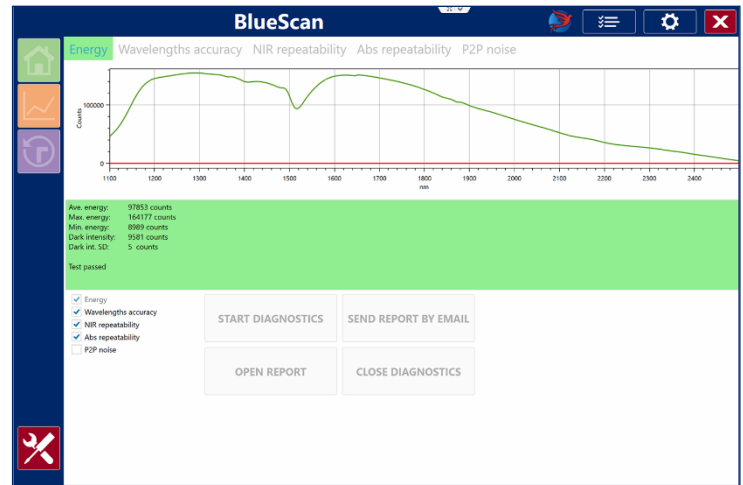
*Easily switch between multiple sample types*

Selected	Name	Description	Date	PROTEIN	ADF	ADP	P	CA	K	MG	DM	NDF	INSOLUBLE	H
272			2019-08-28 17:04:30	23.71	33.81	1.08	0.20	1.51	3.11	0.18	90.75	26.44	14.40	9.56
272			2019-08-28 17:03:35	23.74	33.62	1.07	0.20	1.52	3.08	0.18	90.73	26.41	14.41	9.63
271			2019-08-28 17:02:42	23.68	33.60	1.06	0.20	1.51	3.07	0.18	90.72	26.56	14.39	9.62
270			2019-08-28 17:01:47	23.67	33.85	1.07	0.20	1.51	3.06	0.18	90.75	26.77	14.40	9.72
269			2019-08-28 17:00:53	23.70	33.66	1.06	0.20	1.51	3.09	0.18	90.73	26.70	14.38	9.56
268			2019-08-28 17:00:00	23.71	33.86	1.07	0.20	1.52	3.07	0.18	90.71	26.82	14.40	9.61
267			2019-08-28 16:59:05	23.74	33.98	1.07	0.20	1.53	3.07	0.18	90.71	26.84	14.40	9.67
266			2019-08-28 16:58:11	23.70	33.56	1.06	0.20	1.51	3.08	0.18	90.69	26.64	14.39	9.61
265			2019-08-28 16:57:18	23.66	33.76	1.07	0.20	1.51	3.11	0.18	90.71	26.72	14.35	9.57
264			2019-08-28 16:56:23	23.74	33.88	1.08	0.20	1.51	3.09	0.18	90.72	26.68	14.43	9.59
263			2019-08-28 16:55:29	23.70	33.57	1.06	0.20	1.51	3.10	0.18	90.70	26.33	14.38	9.62
262			2019-08-28 16:54:35	23.69	33.87	1.08	0.20	1.52	3.07	0.18	90.74	26.51	14.39	9.65
261			2019-08-28 16:53:41	23.70	33.63	1.08	0.20	1.51	3.10	0.18	90.75	26.43	14.40	9.57
260			2019-08-28 16:52:47	23.68	33.68	1.07	0.20	1.51	3.10	0.18	90.74	26.76	14.40	9.56
259			2019-08-28 16:51:53	23.81	33.61	1.06	0.20	1.52	3.09	0.18	90.72	26.54	14.43	9.54
258			2019-08-28 16:50:59	23.79	33.54	1.06	0.20	1.52	3.10	0.18	90.73	26.48	14.40	9.60
257			2019-08-28 16:50:06	23.67	33.83	1.07	0.20	1.51	3.10	0.18	90.73	26.70	14.37	9.64
256			2019-08-28 16:49:11	23.82	33.48	1.07	0.20	1.53	3.09	0.18	90.71	26.09	14.41	9.56
255			2019-08-28 16:48:16	23.67	33.94	1.07	0.20	1.51	3.10	0.18	90.75	26.93	14.38	9.50
254			2019-08-28 16:47:24	23.78	33.82	1.07	0.20	1.52	3.10	0.18	90.70	26.34	14.38	9.59
253			2019-08-28 16:46:29	23.79	33.63	1.07	0.20	1.52	3.07	0.18	90.71	26.52	14.40	9.52
252			2019-08-28 16:45:35	23.77	33.80	1.07	0.20	1.52	3.07	0.18	90.73	26.62	14.38	9.53
251			2019-08-28 16:44:41	23.78	33.64	1.07	0.20	1.52	3.07	0.18	90.71	26.69	14.41	9.52
250			2019-08-28 16:43:47	23.80	33.70	1.07	0.20	1.52	3.09	0.18	90.69	26.85	14.38	9.60
249			2019-08-28 16:42:53	23.81	33.82	1.08	0.20	1.52	3.09	0.18	90.72	26.92	14.41	9.58
248			2019-08-28 16:41:59	23.74	33.75	1.06	0.20	1.51	3.10	0.18	90.69	26.45	14.38	9.56
247			2019-08-28 16:41:05	23.69	34.02	1.07	0.20	1.51	3.11	0.18	90.71	26.47	14.36	9.63
246			2019-08-28 16:40:11	23.78	33.78	1.07	0.20	1.52	3.09	0.18	90.71	26.44	14.38	9.50

*View historical data to monitor trends*



*Examine and compare spectra*



*Rapid built-in diagnostics*

The Phoenix NIR analyzer is powered by BlueScan. This custom software has been designed to simplify routine analysis and is packed with features making it ideal for research and development, monitoring quality and optimizing production.

BlueScan's tab-based interface ensures your information is always a click away. You can easily view results, historical data, spectra, generate reports and run diagnostics with the press of a button.

A diagnostic protocol can be run in seven minutes. This rapid tool ensures your instrument is properly aligned and that your results can always be trusted.

# Database Options

The Phoenix NIR Analyzer has flexible database options for standard and custom applications.



**Transfer an existing database:** The Phoenix is compatible with customer owned legacy databases from many other NIR manufacturers.



**Develop your own:** We can assist you in developing your own custom databases using Alligator, our proprietary chemometric software.



## Blue Sun Guarantee

The Blue Sun Guarantee is the NIR industry's most comprehensive service and warranty program. It guarantees you start up quickly and avoid downtime and repairs. Every Blue Sun instrument comes standard with the Blue Sun Guarantee, which includes:



Free  
Phone  
Support



Free  
Remote  
Support



Free  
Software  
Upgrades



1 Year  
Calibration  
Development



1 Year  
Warranty  
On Parts

# Specifications

## Hardware

Dimensions	Top Window(TW): 12.5 in x 12.5 in x 20.75 in ; 318 mm x 318 mm x 527 mm (LxWxH) Sideload(SL): 15.5 in x 18.0 in x 10.125 in ; 394 mm x 457 mm x 257 mm (LxWxH)
Weight	TW: 24 lbs ; 11 kg ; SL: 35 lbs ; 16 kg
IP Rating	TW:62 ; SL: N/A
Power Connection	Via external power supply; Input:100-240VAC, 50/60Hz, 65watt Output: 24VDC, 2.7A.
Light Source	Tungsten Quartz Halogen Lamp, MTBF > 5k-10k hours
Measurement Mode	Reflectance or Transflectance
Detector	High Performance InGaAs extended ranged detector(s)
Wavelength Selection	Scanning diffraction grating monochromator with nominal bandwidth of 10nm (FWHH). Configurable Data presented in 0.5nm, 1nm or 2nm increments

## Performance

Spectral Resolution	0.5 nm, 1.0 nm or 2.0 nm	
Absorbance Range	Up to 4 absorbance units (scan and wavelength dependent)	
Analysis Time	10-60 seconds (24 scans / sample = 32 seconds)	
Wavelength Reproducibility	< 0.02 nm (based on Blue Sun Scientific specific diagnostic test)	
Wavelength Accuracy	< 0.05 nm matched to an internal reference standard	
Photometric Noise	< 15 $\mu$ Au in standard range	
Phoenix Models	<b>Phoenix 5000</b>	<b>Phoenix 6000</b>
Wavelength Range	1100-2500 nm	600-2500 nm
Number of Data Points	Up to 2800	Up to 3800
Number of Detectors	1	2

## User Interface

Operating System	Windows 10
Display	12.3" Microsoft Surface Pro Touch Screen
Data Export Options	LIMS, Modbus, Excel

## Installation Requirements

Ambient Temperature	10-40°C
Storage Temperature	-20-40°C
Ambient Humidity	< 85% RH
Mechanical Environment	Stationary during use
EMC environment	Laboratory use, Industry requirements