BLUE-RAY
BIOTECH

Espectrofotómetro

Análisis de microvolúmenes

Dibbiotek
La solución a tu laboratorio

Más que velocidad

El espectrofotómetro EzDrop 1000 Análisis de microvolúmenes acelera la eficacia de su investigación, mientras que la ventana de la muestra está equipada con un revestimiento nanohidrófobo, lo que garantiza resultados altamente precisos.

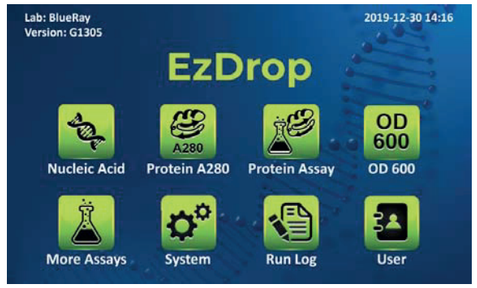
Con una pantalla de funcionamiento intuitivo, EzDrop hace que cada paso sea rápido y sencillo, ayudándoles a completar la medición sin esfuerzo.

Rendimiento sin precedentes

Cuantifica eficazmente ácidos nucleicos / proteinas en 3 seg.

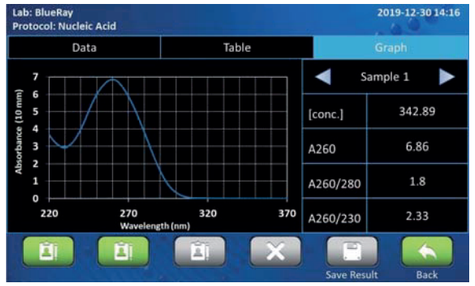
El valor de Coeficiente de variación de la absorbencia es <1%.

Amplia experiencia operativa



Interfaz gráfica Intuitiva

- Pantalla táctil de alta resolución 7" y software que permite integrar y simplificar el trabajo.
- La interfaz gráfica intuitiva incorporada es fácil de usar, y puede ser operada sin equipos informáticos adicionales, ahorrando espacio en el laboratorio.



Cuantificación del ácido nucleico

- Las mítiples funciones incorporadas le permiten medir ácidos nucleicos, proteínas, células y otras muestras con el toque de un botón.
- La función de medición automatizada aumenta la velocidad y la comodidad del funcionamiento.

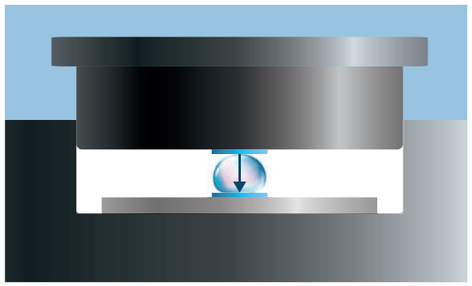
EzDrop 1000 no solo funciona con la misma exactitud y precisión en la concentración de A.N. y calidad en su detección.

También posee un rango de longitud de onda más grande en comparación con las competencias.

Luz de asistencia LED

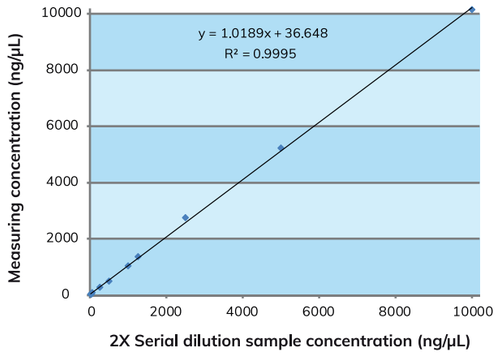
- La luz de asistencia totalmente diseñada compensa la falta de luz ambiental, y minimiza los errores de colocación de las muestras.

Calidad Garantizada



Sistema de ventanas con revestimiento nano hidrofóbico

- El sistema de ventana de muestra reemplazable reduce en gran medida la posibilidad de contaminación residual.
- Salida espectral completa (190-1000nm)



- El diseño del cojín en el brazo de detección reduce el impacto, lo que a su vez reduce el error en los experimentos.

Espectrofotómetro Análisis de microvolúmenes | **EzDrop 1000**

Specifications

Optics Information

Sample Volume	1 µL minimum volume
Sample Number	1
Pathlength	0.5 mm / 0.05 mm
Wavelength Range	190 - 1000 nm
Bandwidth	1.3 nm
Wavelength Accuracy	1.0 nm
Spectral Resolution	1.5 nm (FWHM at Hg 253.7 nm)
Absorbance Precision (raw)	0.0015 A (0.5 mm)
Absorbance Precision	0.03 A (1 cm equivalent)
Absorbance Accuracy	3.0% at 0.75 A at 300 nm
Absorbance Range (1 cm equivalent)	0 (0.04) - 400 A
Detection Range	dsDNA: 2 - 20000 ng/µL BSA: 0.06 - 600 mg/mL
Sample Surface Material of Construction (Lower and Upper)	Stainless steel and quartz window with hydrophobic treatment
Measurement Time	< 3 sec

Software

Operating System	Custom Linux based OS
Registered User Folder No.	> 500 sets
User Folder Password Protection	Yes

General

Display	7” color LCD with capacitive touch panel
Data Port	1 USB Type-A front port for USB flash drive
Footprint Dimensions (W x D x H)	206 x 333 x 166 mm
Weight	3.5 kg (7.8 lb)
Glove Compatibility	All common lab gloves
Internal Storage	32 GB flash memory
Power Adapter	Input: AC 100-240 V, 50/60 Hz; Output: DC 24 V, 2.08 A
Certifications	CE, RoHS

Specifications are subject to change without prior notice.

Ordering Information

BRED-1000	EzDrop 1000 Micro-Volume Spectrophotometer

ISO 13485

Authorized Distributor

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Brand	Blue-Ray Biotech	DeNovix®	Thermo Fisher ®
Micro-volume model	EzDrop 1000	DS-11	NanoDrop™ ONE
Sample Volume	1 -2 µL	0.5 µL	1 - 2 µL
Wavelength Range	190 - 1000 nm	190 - 840 nm	190 - 850 nm
Pathlength	0.5 mm / 0.05 mm	0.5 mm (auto ranging to 0.02 mm)	1.0 mm (auto ranging to 0.03 mm)
Detection Range	0.06 mg/mL BSA; 2 ng/µL dsDNA	0.04 mg/mL BSA; 0.75 ng/µL dsDNA	0.06 mg/mL BSA; 2 ng/µL dsDNA
	600 mg/mL BSA; 20000 ng/µL dsDNA	1125 mg/mL BSA; 37500 ng/µL dsDNA	820 mg/mL BSA; 27500 ng/µL dsDNA
Light Source	Pulsed Xenon flash lamp	Pulsed Xenon flash lamp	Pulsed Xenon flash lamp
Detector Type	2048 element CMOS	2048 element CCD	2048 element CMOS
Wavelength Accuracy	1.0 nm	0.5 nm	1.0 nm
Spectral Resolution	1.5 nm (FWHM at Hg 253.7 nm)	1.5 nm (FWHM at Hg 253.7 nm)	1.8 nm (FWHM at Hg 253.7 nm)
Absorbance Precision (raw)	0.0015 A (0.5 mm) or 1%, whichever is greater	0.0008 AU (0.5 mm) or 1%, whichever is greater	0.002 A (1 mm) or 1%, whichever is greater (SD of 10 individual measurements at 0.97 A)
Absorbance Precision	0.03 A (1 cm equivalent) or 1%, whichever is greater	0.015 AU (1 cm equivalent) or 1%, whichever is greater	0.02 A (1 cm equivalent) or 1%, whichever is greater (SD of 10 individual measurements at 0.97 A)
Absorbance Accuracy	3.0% at 0.75 A at 300 nm	1.5% at 0.75 AU at 260 nm	3.0% at 0.97 A at 320 nm
Absorbance Range	0 (0.04) - 400 A (1 cm equivalent)	0.015 - 750 AU (1 cm equivalent)	0 (0.04) - 550 A (1 cm equivalent)

Table 1. Specification comparison of four micro-volume UV/Vis spectrophotometers.
The characteristics of four UV/Vis micro-volume spectrophotometers, EzDrop 1000 (Blue-Ray Biotech), NanoDrop ™ ONE (Thermo Fisher®), NanoDrop ™ 2000 (Thermo Fisher®) and DS-11 (DeNovix®).

Accuracy Comparison

The accuracy tests show the ability to measure the true concentration of a substance in a sample. Model sample (10 mg/mL salmon sperm DNA, Invitrogen, Thermo Fisher®) was twofold serial diluted and the concentration and A260/A280 ratio of each sample were detected with the EzDrop 1000, DS-11 and NanoDrop ™ 2000, shown in Table 2, and with the EzDrop 1000 and NanoDrop ™ ONE, shown in Table 3. The R2 was also calculated from Table 2 and Table 3 and both displayed above 0.99 (Figure 1 and 2). The results prove that the accuracy of these micro-volume UV/Vis spectrophotometers was similar, demonstrating that EzDrop 1000 is a great competitor to other micro-volume spectrophotometers.

Brand		Blue-Ray Biotech		DeNovix®	
Model		EzDrop 1000		DS-11	
Sample concentration		Nucleic Acid (ng/µL)	A260/A280	Nucleic Acid (ng/µL)	A260/A280
2X serial dilution	10000	9430.7928	1.89	9457.141	1.88
	5000	4774.432	1.90416	4756.202	1.8
	2500	2531.412	1.82	2464.629	1.77
	1250	1228.88	1.88329	1264.469	1.73
	625	654.5	1.89	748.736	1.77
	312	337.1	1.79972	326.869	1.68
	156	170.51	1.82	163.486	1.71
	78	92.29	1.76494	82.788	1.67
	39	47.58	1.96	41.053	1.66
	20	24.62	1.67696	20.494	1.6
	10	12.41	1.63	10.028	1.6
	5	6.56	2.84123	4.689	2.17
	2.5	3.81	2.09	2.615	6.56

Table 2. The accuracy test among EzDrop 1000, DS-11 and NanoDrop ™ 2000.
The model sample was twofold serial diluted. The concentration and A260/A280 ratio of each sample were detected by EzDrop 1000, DS-11 and NanoDrop ™ 2000.

Brand		Blue-Ray Biotech		Thermo Fisher ®	
Model		EzDrop 1000		NanoDrop™ ONE	
Sample concentration		Nucleic Acid (ng/μL)	A260/A280	Nucleic Acid (ng/μL)	A260/A280
2X serial dilution	10000	9710.536	1.91	9932.729	1.86
	5000	5033.347	1.9	4938.379	1.88
	2500	2538.602	1.86	2618.794	1.87
	1250	1307.317	1.83	1324.658	1.82
	625	634.667	1.84	667.683	1.79
	312	319.044	1.79	325.346	1.77
	156	158.433	1.77	163.22	1.69
	78	80.729	1.65	80.947	1.62
	39	41.712	1.54	39.352	1.62
	20	21.835	1.46	19.02	1.52
	10	11.297	1.21	9.429	1.55
	5	4.4	1.66	3.86	1.61
	2.5	2.222	1.57	1.72	1.64

Table 3. The accuracy test between EzDrop 1000 and NanoDrop ™ ONE.
The model sample was twofold serial diluted. The concentration and A260/A280 ratio of each sample were detected by EzDrop 1000 and NanoDrop ™ ONE.

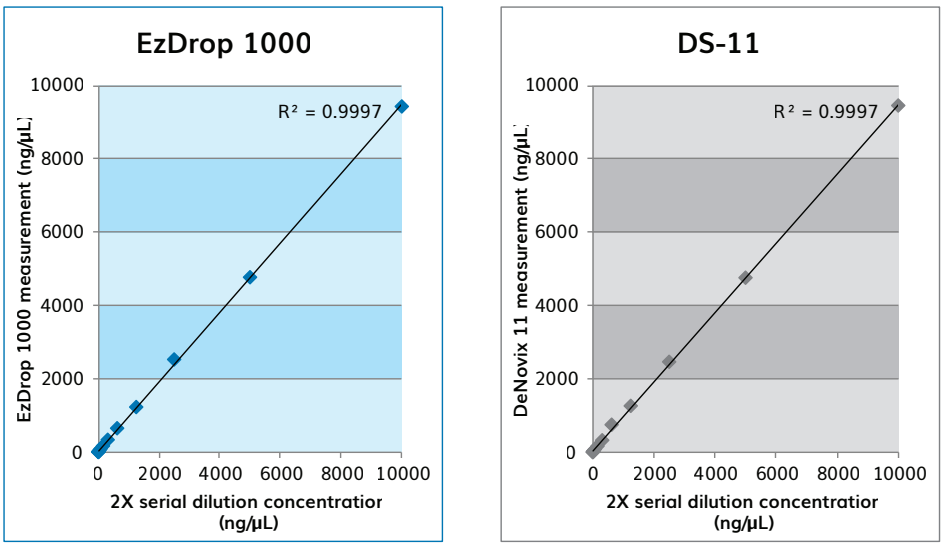

Figure 1. The accuracy test between EzDrop 1000, DS-11 and NanoDrop ™ 2000.
The model sample was twofold serial diluted. The concentration of each sample was detected with the EzDrop 1000, DeNovix® DS-11 and NanoDrop ™ 2000. The R^2 was calculated to represent the accuracy.

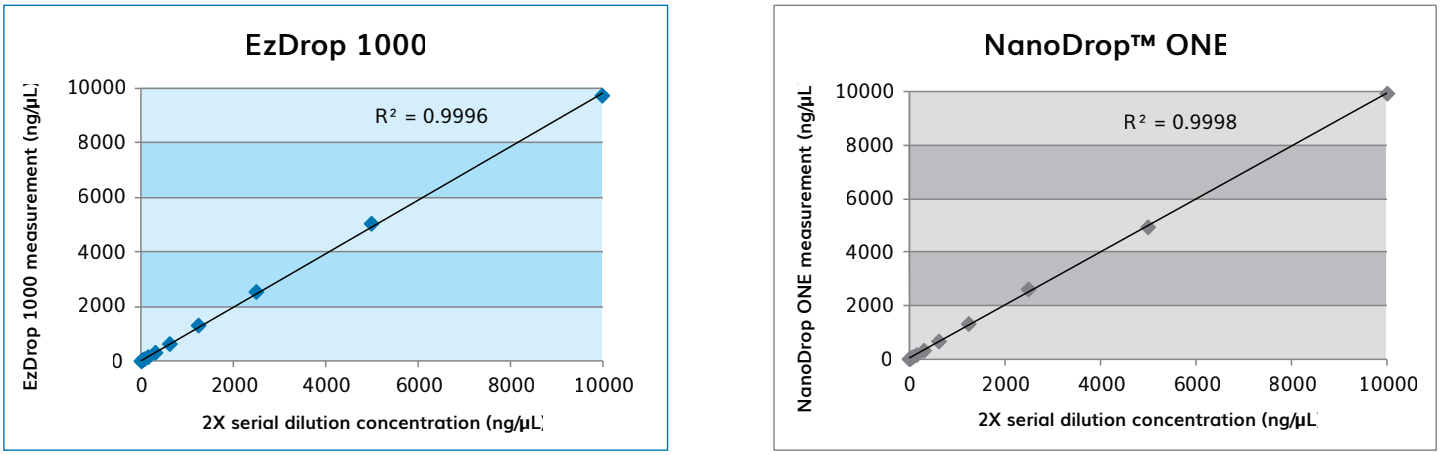

Figure 2. The accuracy test between EzDrop 1000 and NanoDrop ™ ONE.
The model sample was twofold serial diluted. The concentration of each sample was detected with the EzDrop 1000 and NanoDrop ™ ONE. The R^2 was calculated to represent the accuracy.

Precision Comparison

The precision tests show the ability to obtain similar results by repeating analysis on the same sample. The concentration of the model sample labeled as 2500 ng/ µL or 312 ng/ µL was detected three times with the EzDrop 1000 and DS-11 individually. The concentration detected from two spectrophotometers were similar; however, the CV value from the EzDrop 1000 was more stable than that of the DS-11 under different concentrations of model sample detection (Table 4 and Figure 3). These results indicate that EzDrop 1000 is more reliable.

Brand	Model	High concentration sample comparison				Normal concentration sample comparison			
		2500 (ng/µL)	Average	Standard deviation	CV value	312 (ng/µL)	Average	Standard deviation	CV value
Blue-Ray Biotech	EzDrop 1000	2521.92	2522.85	6.64	0.26%	335.44	336.65	0.87	0.26%
		2531.41				337.1			
		2515.22				337.42			
Denovix®	DS-11	2464.63	2459.54	12.33	0.50%	326.87	326.25	0.63	0.19%
		2442.56				325.39			
		2471.44				326.49			

Table 4. The precision test between EzDrop 1000 and DS-11.
The concentration of sample with same volume was measured three times to show the reproducibility of EzDrop 1000 and DS-11 (n=3).

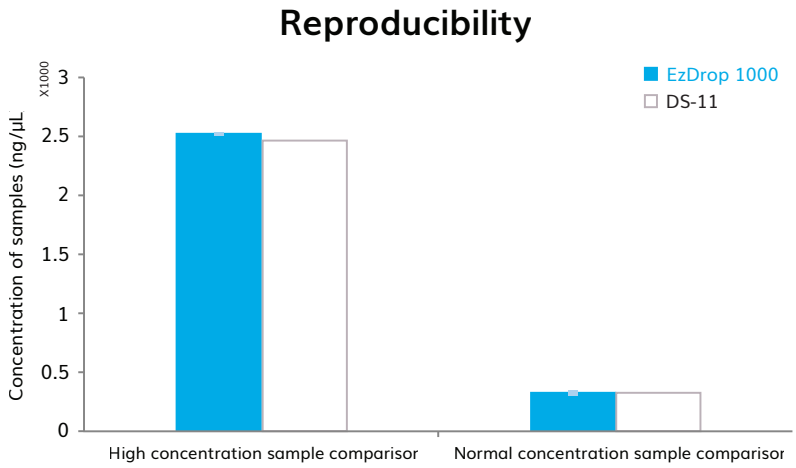

Figure 3. The precision test between EzDrop 1000 and DS-11.
The concentration of sample with same volume was measured three times to show the reproducibility of EzDrop 1000 and DS-11 (n=3).

Summary

NanoDrop ™ ONE, NanoDrop ™ 2000 and DS-11 are widely used micro-volume UV-Vis spectrophotometers by scientists. Although EzDrop 1000 is a newcomer, our results revealed that the accuracy was well matched to these popular micro-volume spectrophotometers. Moreover, the more stable CV value during the precision test demonstrated that EzDrop 1000 possesses better reproducibility. Additionally, though the performance of the EzDrop 1000 and DS-11 were better than the technical specifications, the measurement results of the EzDrop 1000 were more stable.

In conclusion, EzDrop 1000 not only performs with equal accuracy and precision in nucleic acid concentration and quality detection, but it also possesses larger wavelength range compared with competitors.