

## WHY CHOOSE ISED TECHNOLOGY OVER MODIFIED WESTERGREN ESR METHODS?



Results within 20 seconds



Walk-away automation



No per-test disposables



Sampling from primary EDTA tube



100 µL aspirated volume

### EFFICIENT WORKFLOW:

iSED analyzers produce **results within 20 seconds** after appropriate sample mixing. Truly STAT ESR results are now possible.

**Less than 3 seconds of hands-on time** per per sample is needed with iSED analyzers. Walkaway automation frees up valuable technologist time and improves laboratory efficiency.

Automation and sampling from the primary tube limits the risk of biohazard exposure to test operators.

An **automated standardized workflow** reduces subjectivity and operator errors. In addition, miniISED and iSED provide more flexibility in terms of barcode label placement.

### FASTER METHODOLOGY:

The methodology used by a manufacturer can determine the limitations impacting the accuracy of ESR results. Gravity-based methodologies have the same limitations as the Westergren method and can be affected by environmental and sample variables.

iSED analyzers use photometric rheology to **accurately** measure the intensity of red blood cell aggregation, which occurs in the first phase of the sedimentation process. iSED analysis is performed rapidly in a closed environment, so the sample is not as exposed to environmental variables.

Unlike many modified Westergren methods, iSED analyzers do not require the use of per-test reagents or disposables.

### SMALLER SAMPLE:

The advantage of the iSED system is that it requires the **smallest test volume** (up to 500 µL depending on the tube brand being used). **Only 100 µL** is aspirated for testing, making it possible to reuse the tube for other hematology tests. Low volume and pediatric samples can also be easily run.

Modified Westergren methods require higher sample volumes, increasing the potential for QNS errors and making it more difficult to run pediatric samples.

Some modified Westergren methods also require the use of special tubes, increasing workflow complexity and biohazard exposure risk.

iSED<sup>®</sup>  
Product  
Comparison



# iSED<sup>®</sup> Comparison of Modified Westergren Methods



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# iSED<sup>®</sup> Comparison of Modified Westergren Methods



	iSED <sup>®</sup> /iSED <sup>®</sup> ELITE	Diesse Mini-Cube	Diesse Cube 30 Touch	Diesse Ves-Matic Cube 200	Diesse Ves-Matic 5	Diesse Ves-Matic Cube Track	ELITech Microsed <sup>®</sup> -System	ELITech Mix-Rate <sup>®</sup> X20	YHLO VISION	YHLO VISION Pro	RR Mechatronics Starrsed ST	
<b>Methodology</b>	Photometric rheology (measures RBC aggregation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared sensor (measures RBC sedimentation)	Optical infrared photoelectric cell RBC sedimentation	Optical infrared photoelectric cell LED (measures RBC sedimentation)	Optical infrared photoelectric cell LED (measures RBC sedimentation)	Optical infrared LED emitter and receiver (measures RBC sedimentation)	
<b>Sample Volume</b>	<b>Aspirated volume:</b> 100 µL <b>Minimum test volume:</b> 500 µL EDTA whole blood	<b>Minimum test volume:</b> 2.0 mL; 500 µL if using BD Microcontainer <sup>®</sup> or BD Microcontainer <sup>®</sup> MAP tubes	1.5-4.0 mL EDTA whole blood	1.5-4.0 mL EDTA whole blood	1.5-4.0 mL EDTA whole blood	1.5-4.0 mL EDTA whole blood	<b>Minimum/testing volume:</b> 1.0 or 1.36 mL <b>Must use Excyte ESR tubes</b>	<b>Minimum/testing volume:</b> 1.0 or 1.36mL <b>Must use Excyte ESR tubes</b>	<b>Minimum/test volume:</b> 2.0mL	<b>Minimum volume:</b> 2.0-2.5 mL <b>Test volume:</b> 1.5 mL	<b>Minimum volume:</b> 2.0 mL <b>Test volume:</b> 1.2 mL	
<b>Sample Tube Requirements</b>	13x75 mm EDTA tubes with pierceable cap, BD Microcontainer <sup>®</sup> MAP tubes (refer to iSED <sup>®</sup> analyzers tube compatibility chart)	13x75 mm EDTA tubes, 500 µL BD Microcontainer <sup>®</sup> tubes or BD Microcontainer <sup>®</sup> MAP EDTA tubes	13x75 mm EDTA tubes, 500 µL BD Microcontainer <sup>®</sup> tubes or BD Microcontainer <sup>®</sup> MAP EDTA tubes	13x75 mm EDTA tubes, 500 µL BD Microcontainer <sup>®</sup> tubes or BD Microcontainer <sup>®</sup> MAP EDTA tubes	13x75 mm EDTA tubes	13x75 mm EDTA tubes	Must use Excyte <sup>®</sup> ESR vacuum or Excyte <sup>®</sup> ESR non-vacuum tubes	Must use Excyte <sup>®</sup> ESR vacuum or Excyte <sup>®</sup> ESR non-vacuum tubes	EDTA 12 or 13 mm tube	EDTA 12 or 13 mm tube	EDTA tubes	
<b>Sample Stability</b>	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C; vacuum tubes 12 hr at 2-8°C	4 hr at room temperature; 24 hrs at 2-8°C; vacuum tubes 12 hr at 2-8°C	Tested within 4 hrs after collection	Tested within 4 hrs after collection	4 hr at room temperature; 24 hrs at 2-8°C	
<b>Throughput</b>	20 sample capacity, 180 samples per hour	1 sample capacity, 12 samples per hour	30 sample positions, 60 samples per hour	190 samples per hour	89 sample positions, 190 samples per hour	95 samples per hour	10 sample capacity, 40 samples per hour	20 sample positions, 80 samples per hour	8-32 sample positions depending on the model • Model A - 24 tests per hour • Model B - 48 tests per hour • Model C - 96 tests per hour	8-32 sample positions depending on the model • Model A - 24 tests per hour • Model B - 48 tests per hour • Model C - 96 tests per hour	24 sample positions • 30 minute method: 36 samples per hr • 60 minute method: 24 samples per hr	
<b>Time to First Result</b>	3 minute mix + 20 seconds; subsequent results available within 20 seconds	20 minutes after 10-12 manual inversions	20 minutes after 8 manual inversions and 20 inversion mixing cycle	19 minutes	28 minutes	22 minutes	30 minutes (optimal result time); 10 minute pre-indication; 15 minute option	30 minutes (optimal result time); 10 minute pre-indication; 15 minute option	20 minutes	Cycle Mode: 20 minutes + 3 minutes mixing Random Mode: 20 minutes after 16 manual inversions	• 30 minute method • 60 minute method	
<b>Workflow</b>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Continuous sample loading, can prioritize STATS</li> <li>• Onboard mixing</li> <li>• Internal sample barcode reader</li> <li>• No barcode placement restrictions</li> <li>• Can use sample tube for other hematology tests</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Samples must be manually inverted 8 times prior to loading</li> <li>• Barcode label placement restrictions</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Samples must be manually inverted 8 times prior to loading, and still require onboard mixing</li> <li>• Barcode label placement restrictions</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Continuous sample loading</li> <li>• Limit to labels on tube</li> <li>• TLA (track compatible)</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Continuous sample loading</li> <li>• Onboard mixing</li> <li>• Limit to labels on tube</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Random access</li> <li>• Continuous sample loading</li> <li>• Limit to labels on tube</li> <li>• TLA (track compatible)</li> <li>• Minimal biohazard risk</li> </ul>	<ul style="list-style-type: none"> <li>• Not random access</li> <li>• Manual mixing of samples 10-12 inversions</li> <li>• Must use Excyte<sup>®</sup> ESR Vacuum or Excyte<sup>®</sup> ESR non-vacuum Tubes</li> </ul>	<ul style="list-style-type: none"> <li>• Not random access</li> <li>• Samples must be manually inverted 8 times prior to loading</li> <li>• Must use Excyte<sup>®</sup> ESR Vacuum or Excyte<sup>®</sup> ESR non-vacuum Tubes</li> </ul>	<ul style="list-style-type: none"> <li>• Not random access</li> <li>• Barcode label placement restrictions</li> </ul>	<ul style="list-style-type: none"> <li>• Not random access</li> <li>• Barcode label placement restrictions</li> </ul>	<ul style="list-style-type: none"> <li>• Each sample is diluted with 5 mL of Starrsed diluent</li> <li>• Must be inverted at least 8 times before placing onboard</li> <li>• Sample is transferred to a tube prior to testing</li> </ul>	
<b>Interface Capability</b>	Yes, uni-directional	Yes, bi-directional	Yes, bi-directional	Yes, bi-directional	Yes, bi-directional	Yes, bi-directional	Yes, uni-directional	Yes, uni-directional	Yes, bi-directional	Yes, bi-directional	Yes, bi-directional	
<b>Quality Control</b>	<b>SEDITROL<sup>®</sup> ESR Control</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix (Mimics patients)</li> <li>• Open Vial Stability: 60 days at room temperature</li> <li>• Shelf life: 18 months</li> <li>• Online QC program</li> </ul>	<b>ESR-Chex<sup>®</sup> Control</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: 7 days at room temperature; 95 days refrigerated</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>ESR-Chex<sup>®</sup> Control</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: 7 days at room temperature; 95 days refrigerated</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>ESR Control Cube</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: open vial: 95 days 2-30°C; 7 days at 18-30°C</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>ESR Control Cube</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: open vial: 95 days 2-30°C; 7 days at 18-30°C</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>ESR Control Cube</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: open vial: 95 days 2-30°C; 7 days at 18-30°C</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>ESR Control Cube</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: open vial: 95 days 2-30°C; 7 days at 18-30°C</li> <li>• Shelf Life: 365 days (1 year)</li> <li>• Online QC program</li> </ul>	<b>Accu-Sed<sup>®</sup> Plus</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: 31 days at room temperature</li> <li>• 18 month shelf life</li> <li>• Online QC program</li> </ul>	<b>Accu-Sed<sup>®</sup> Plus</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open vial stability: 31 days at room temperature</li> <li>• 18 month shelf life</li> <li>• Online QC program</li> </ul>	<b>Bio-Rad QC</b>	<b>Bio-Rad QC</b>	<b>Starrsed Control</b> <ul style="list-style-type: none"> <li>• Human whole blood matrix</li> <li>• Open Vial Shelf Life: 31 days at room temperature</li> <li>• Shelf Life: 540 days at room temperature</li> </ul>
<b>Routine Maintenance</b>	<ul style="list-style-type: none"> <li>• No operator initiated daily maintenance</li> <li>• Automatic washing 1x after 15 minutes idle</li> <li>• Deep clean after 30 days or 1000 tests</li> <li>• No special cleaning required when running QC material</li> </ul>	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	Routine maintenance is not required as no sample is aspirated and used for testing	<ul style="list-style-type: none"> <li>• End of day wash, takes 30 minutes</li> <li>• Daily, weekly, and monthly maintenance</li> </ul>	
<b>Required Accessories</b>	<ul style="list-style-type: none"> <li>• Test cards</li> <li>• iWASH<sup>®</sup> solution</li> <li>• iWASTE<sup>®</sup> bottles</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	<ul style="list-style-type: none"> <li>• Test transponder</li> <li>• No per-test reagents/disposables required</li> </ul>	Excyte <sup>®</sup> ESR vacuum or Excyte <sup>®</sup> non-vacuum tubes	Excyte <sup>®</sup> ESR vacuum or Excyte <sup>®</sup> non-vacuum tubes	Test device	Test device	<ul style="list-style-type: none"> <li>• Starrsed Diluent</li> <li>• Starrsed X-Clean</li> </ul>