cember 2002			CAP TODAY / 37
	High	volumo homotology on	CAP TODAY / 37 Alyzers Abbott Diagnostics Hematology Business Unit
	підп-	volume hematology and	alyzers
art 1 of 9		Abbott Diagnostics Hematology Business Unit	Abbott Diagnostics Hematology Business Unit
		5440 Patrick Henry Dr. Santa Clara, CA 95054	5440 Patrick Henry Dr. Santa Clara, CA 95054
ee related article, pa	ge 36	800-933-5535 www.abbott.com	800-933-5535 www.abbott.com
ame of instrument	ad in ILS /outside ILS	Cell-Dyn 3200	Cell-Dyn 3700
	ed in U.S./outside U.S. J.S./outside U.S./list price	1997/1997 >700/>1,500/\$165,000	1999/1999 >300/>500/\$180,000 SL Model, \$140,000 CS Model
est menu:	•Chartable	standard menu (left) plus: RDW, MPV	standard menu (left) plus: RDW, MPV, retic #&%, IRF
All instruments have: BC, RBC, Hb, Hct, MCV CH, MCHC, Plt, %&# neut	, •Laboratory • •Flags	band #&%, IG #&%, variant lymph #&%, blast #&%, PCT, PDW, NRBC #&% band, IG, variant lymph, blast, NRBC, NWBC, RRBC, FWBC, RBC morph.,	band, IG, variant lymph, blast, PCT, PDW, NRBC #&% and retic scatter profile suspect populations, band, blast, variant lymph, IG, NRBC, RRBC, NWBC, LRI,
ono, lymph, eos, baso	not clinically released	high/low interp. message, LRI, URI, LURI, WBC none	URI, LURI, RBC morph., FWBC, high/low interp. message, WBC none
	t submitted for clearance	none	none
or research-use-only		none	none
ests unique to analyz		3-dimensional optical RBC analysis with advanced MCV measurement	
ifferential method(s) inearity:	•WBC count (10 ⁹ /L)/RBC count (10 ¹² /L)	MAPSS (Multi-Angle Polarized Scatter Sep.) 0-250/0-8	MAPSS (Multi-Angle Polarized Scatter Sep.) 0-250/0-8
	 Hemoglobin (g/dL)/platelet (10⁹/L) MCV (fL) or Hct (%) 	0–25/0–1,750 35–180 (MCV)	0–24/0–2,000 50–200 (MCV)
recision:	•WBC count/RBC count •Hb/platelet	≤2.7%/≤1.5% <1.0%/<4.0%	≤2.5%/≤1.5% ≤1.2%/≤5.0%
	•MCV or Hct	≤1.0% (MCV)	≤1.270/≈3.070 ≤1.0% (MCV)
ccuracy of automate per NCCLS H-20A	d diff. compared with manual diff.,	neut #&%: ≥0.95, lymph #&%: ≥0.94, mono #&%: ≥0.86, eos #&%: ≥0.84, baso #% ≥0.73	neut #&%: ≥0.95, lymph #&%: ≥0.94, mono #&%: ≥0.86, eos #&%: ≥0.84, baso #&%: ≥0.73
terfering substances	s:•WBC	NRBCs, lytic-resistant RBCs, Plt clumps, cryoglobulin and cryofibrinogen,	NRBCs (WIC only), lytic-resistant RBCs, Plt clumps, cryoglobulin and cryofibrino-
	•RBC	fragile WBCs elevated WBC count, increased numbers of giant Plts, autoagglutination, in	gen, fragile WBCs increased No. giant Plts, autoagglutination, in vitro hemolysis
	•MCV or Hct	vitro hemolysis MCV: elevated WBC count, hyperglycemia, in vitro hemolysis, increased No.	MCV: elevated WBC count, increased No. giant Plts, hyperglycemia, in vitro
	•Platelet	of giant Plts WBC fragments, in vitro hemolysis, microcytic RBCs, cryoglobulins, Plt	hemolysis WBC fragments, in vitro hemolysis, microcytic RBCs, cryoglobulin, Plt
	•Hb	clumping, increased No. giant Pits elevated WBC count, incr. plasma substances (triglycerides, bilirubin, in vivo	clumps, increased No. giant Plts increased plasma substances (triglycerides, bilirubin, in vivo hemolysis),
terfering substances		n/a	lyse-resistant RBCs n/a
	c. CBCs & diffs. per hr	yes 78/78	yes 90/90
 Modes calibrated. 	e frequency of calib. /parameters calibrated	6 months verification open & closed/WBC, RBC, Hb, MCV, Plt, MPV	6 months open & closed/WBC, RBC, Hb, MCV, Plt
	en/closed/sample dead vol. closed	2 levels every 8 hrs/n/a 130 μL/250 μL/1 mL (sample loader)	2 levels every 8 hrs/n/a 130 µL/355 µL/1.0 mL
ube sampling suppo eterinary capability	rted	yes no	yes (13x75 mm) yes
licrosample capabili	ty slides automatically or flags	yes ves	yes yes (flags only)
problems for slide p		80/\$125,000	80/\$125,000
atient-specific archiv		yes yes	yes yes
lemory capacity—nu	cessible when system online Imeric results–No. specimens	10,000 results 10,000 results	10,000 results 10,000 results
lemory capacity—his •Stored in conjunct	sto/cytograms–No. specimens ion with CBC data	10,000 results yes	10,000 results yes
•Histo/cytogram im	ages & CBC data printed as 1 report recalled and retransmitted	yes ves	yes yes
Saved data can be sorted for reprocessing or report transmission			yes yes no
	s for followup, confirm. testing, or rerun	yes	yes
Parameters for flags for holding samples are defined by Some results can be transmitted to LIS while others held		user or vendor yes	user or vendor yes
Scattergram display: cell-specific color Histogram display: color with threshhold		yes yes	yes yes
	cimen &/or result info. displayed	yes	yes
S interface formats formation transferre		proprietary numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast	proprietary numeric and flag results, histograms and scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast
OINC codes transmit		yes	yes
ow labs get LOINC co ptional data mgmt. c	odes for reagent kits r collation system	package insert; www.e-abbott.com; 800-323-9100 yes; price TBD; proprietary	package insert; www.e-abbott.com; 800-323-9100 yes; price TBD; proprietary
Software features Interface avail. or planned to auto. specimen-handling system		enhanced QC, data archiving, data collation from multiple instruments Lab-Interlink, MDS/Autolab, Beckman Coulter (planned), Roche (planned),	enhanced QC, data archiving, data collation from multiple instruments Lab-Interlink (planned), MDS/AutoLab, Beckman Coulter (planned), Roche
		Labotix	(planned), Labotix (planned)
ar-code symbologies ccommodates bar-co	s read on tube de placement per NCCLS standard Auto2A	Codabar, codes 39 & 128, interl. 2 of 5 yes	Codabar, codes 39 & 128, interl. 2 of 5 yes
	ntenance by lab personnel	daily: 30 sec; weekly: 5 min; monthly: 10 min	daily: 30 sec; bi-weekly: 5 min; monthly: 10 min
	ation of problem to engineer on site	yes average: <4 hrs	yes average: <4 hrs
	imited to software problems	yes/no in development	yes/no in development
	ased on cost-per-reportable result	yes	yes
istinguishing feature	· · ·	MAPSS cell-by-cell analysis provides a better diff.; focused flow	MAPSS cell-by-cell analysis provides a better diff.; retic with reportable IRF

21 HUNE 15 38	Hig	gh-volume hematology	analyzers
Part 2 of 9		Abbott Diagnostics Hematology Business Unit	ABX Diagnostics Inc. Jim Mulry jmulry@us.abx.fr
		5440 Patrick Henry Dr.	34 Bunsen
		Santa Clara, CA 95054 800-933-5535	Irvine, CA 92618 888-903-5001 x 259
See related article, pag	<i>1e 36</i>	www.abbott.com	www.abx.com
Name of instrument First year sold-installe	d in U.S./outside U.S.	Cell-Dyn 4000 1997/1997	Pentra 60°+ Hematology Analyzer 2000/2000
	S./outside U.S./list price	>350/>500/\$250,000	100/300/\$49,500
Test menu:	•Chartable	standard menu (left) plus: RDW, MPV, NRBC #&%, retic #&%, IRF, CD61 (immuno-Pit), CD 3/4, CD 3/8 (immuno T-cell)	standard menu (left) plus: RDW, MPV
All instruments have: WBC, RBC, Hb, Hct, MCV, MCH, MCHC, Plt, %&# neut,	•Laboratory	#&% for segs., bands, IG, blasts, variant lymph; PDW, PCT, white cell	atyp. lymph, atyp. lymph %, LIC, LIC %
mono, lymph, eos, baso	•Flags	viability fraction (WVF) band, IG, blast, variant lymph, nvWBC, rstRBC, IR, Plt clump, ASYM, high/low	operator selectable flagging
FDA-cleared tests but		interp. msg., PCT, PDW none	none
	submitted for clearance	none	none none
For research-use-only	ar	none	none
Tests unique to analyz		reportable NRBC #&%, CD61 for Pits, WVF, CD 3/4, CD 3/8 (immuno T-cell)	none
Differential method(s)		optical scatter & fluorescence technology	DHSS technology combining cytochemistry, focused flow in absorbance principles of measurement
Linearity:	•WBC count (10 ⁹ /L)/RBC count (10 ¹² /L) •Hemoglobin (g/dL)/platelet (10 ⁹ /L)	0-250/0-8 1.0-25/0-2,000	0.1–90/0.5–8.1 2.5–23/10–1,000
Provision	•MCV (fL) or Hct (%)	37–197 (MCV)	10-70 (Hct)
Precision:	•WBC count/RBC count •Hb/platelet	≤2.5%/≤1.5% ≤1.0%/≤4.0%	<5%/<3% <3%/<8%
	•MCV or Hct	≤1.0% (MCV)	<3% (Hct)
Accuracy of automated per NCCLS H-20A	diff. compared with manual diff.,	%neut 0.94, %lymph 0.93, %mono 0.84, %eos 0.91, %baso 0.40, NRBC/WBC 0.91, retic 0.95	neut 0.99, lymph 0.98, mono 0.96, eos 0.89, baso 0.54
Interfering substances	•WBC	lyse-resistant RBCs, Pit clumps	NRBCs, PIt clumps, lyse-resistant RBCs
	•RBC	autoagglutinins, cold agglutinins, hemolysis, small leukocytes (in cases	cold agglutinins
	•MCV or Hct	where leukocyte count is high [>100 K/µL] and MCV is high) MCV: in vitro hemolysis, autoagglutinins, cold agglutinins, hyperglycemia, leukocytosis with macrocy. anemia	Hct: extreme leukocytosis
	•Platelet	Plt clumps, WBC & RBC fragments, microcytic RBCs, autoagglutinins,	microcytes, Pit clumps
	•Hb	cold agglutinins, Plt satellitosis high lipids (>700 mg/dL), high WBCs (>250 K/µL, based on concentrated,	extreme lipemia/leukocytosis
Interfering substances		n/a WBCs), high bilirubin (>33 mg/dL)	NRBC, lyse-resistant RBCs, extreme hyperbilirubinemia
-			
Age- and sex-specific Max. CBCs per hr/max.	CBCs & diffs. per hr	yes 106/106	yes 60/60
 Modes calibrated/ 	e frequency of calib. parameters calibrated	6 months verification open-closed one proc./WBC, RBC, Hb, MCV, Plt, MPV	6 months closed-open/WBC, RBC, Hb, HCT, Plt, MPV
Frequency of blood/lat Min. specimen vol. one	ex controls n/closed/sample dead vol. closed	2 levels every 8 hrs/n/a 112.5 μL–aspir. vol./same/387 μL–dead vol.	per CLIA standards/none 53 µL/53 µL/0.5 mL
Tube sampling support Veterinary capability		yes no	yes (multiple sizes)
Microsample capability		yes (250 µL) in Sarstedt Multivette & Becton Dickinson Microtainer tubes	yes yes
Prepares microscopic s problems for slide pr	slides automatically or flags ep	yes (flags only)	no
If auto. slidemaker ava	ilable, No. installed/list price	80/\$125,000	
Archives patient data f Patient-specific archiv		yes yes	yes yes, with Hemalink Data Manager
Max. archived data acc	essible when system online	16,000 results	unlimited with Hemalink Data Manager
Memory capacity-his	neric results–No. specimens to/cytograms–No. specimens	16,000 results 16,000 results	10,000, unlimited with Hemalink Data Manager 10,000, unlimited with Hemalink Data Manager
 Stored in conjuncti Histo/cytogram ima 	on with CBC data lges & CBC data printed as 1 report	yes yes	yes yes
Saved results can be re	ecalled and retransmitted d for reprocessing or report transmission	yes	yes
Performs delta checks		yes	yes yes
Parameters for flags for	for followup, confirm. testing, or rerun r holding samples are defined by	yes user or vendor	yes user
	ansmitted to LIS while others held	yes yes	yes yes
Histogram display: colo	or with threshhold	yes	yes
	imen &/or result info. displayed	yes	yes
LIS interface formats s Information transferred		proprietary numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast; host query for demograph- ica & andre	ASTM 1394 & 1238, HL7, IEEE MIB numeric & flag results, histograms & scatterplots, instrument demographics, LIS to instrument—broadcast
LOINC codes transmitte		ics & orders yes	yes
How labs get LOINC co Optional data mgmt. or		www.e-abbott.com; package insert; 800-323-9100 yes; price TBD; proprietary	— yes
 Software features 	ned to auto. specimen-handling system	enhanced OC, data archiving, data collation from multiple instruments Lab-Interlink, MDS/AutoLab, Beckman Coulter (planned), Roche (planned), Labotix (planned)	enhanced QC, data archiving with Hemalink Data Manager no
	e placement per NCCLS standard Auto2A	Codabar, codes 39 & 128, interl. 2 of 5	Codabar, codes 39 & 128, ASTM, interl. 2 of 5 yes
Time required for main Onboard maintenance	tenance by lab personnel records	daily: 30 sec; weekly: 5 min; monthly: 10 min yes	weekly: 15 min yes
Time from communica	tion of problem to engineer on site	average: <4 hrs	24 hrs
	mited to software problems nostics via modem	yes/no in development	yes/yes yes, with Hemalink Data Manager
with. can perform drag			
	ased on cost-per-reportable result	yes	yes

ecember 2002		
High-	volume hematology an	CAP TODAY / 39 alyzers ABX Diagnostics Inc. Jim Mulry jmulry@usabx.fr 34 Bunsen
ingii	volume nematology and	aryzers
Part 3 of 9	ABX Diagnostics Inc. Jim Mulry jmulry@us.abx.fr	ABX Diagnostics Inc. Jim Mulry jmulry@us.abx.fr
	34 Bunsen Irvine, CA 92618	34 Bunsen Irvine, CA 92618
See related article, page 36	888-903-5001 x 259 www.abx.com	888-903-5001 x 259 www.abx.com
lame of instrument	Pentra 120 Retic Hematology Analyzer	Paros CRP/FDA CLEARANCE PENDING
irst year sold–installed in U.S./outside U.S. Io. units installed in U.S./outside U.S./list price	1999/1997 18/550/\$125,000	FDA CLEARANCE PENDING/80 0/150/\$25,000
est menu: •Chartable	standard menu (left) plus: RDW, IRF, MPV	standard menu (left) plus: CRP on whole blood
All instruments have: IBC, RBC, Hb, Hct, MCV, •Laboratory	LIC, atyp. lymph, CRC%	CRP on whole blood
ICH, MCHC, Pit, %&# neut,		
ono, iympn, eos, baso •Flags	operator selectable flagging	—
DA-cleared tests but not clinically released	none	n/a
ests not available but submitted for clearance ests in development	none	instrument 510(k) CLEARANCE PENDING n/a
or research-use-only	none	n/a
ests unique to analyzer	none	CRP on whole blood
interarity: •WBC count (10 ⁹ /L)/RBC count (10 ¹² /L)		linked to ABX hematology analyzers via Hemalink Data Manager —/—
Hemoglobin (g/dL)/platelet (10 ⁹ /L) MCV (fL) or Hct (%)	2-25/0-2,000 10-70 (Hct)	_/_ _
Precision: •WBC count/RBC count	<5%/<3%	
•Hb/platelet •MCV or Hct	<3%/<8% <3% (Hct)	_/_ _
occuracy of automated diff. compared with manual diff.,	neut 0.99, lymph 0.99, mono 0.92, eos 0.97, baso 0.71	_
per NCCLS H-20A		
nterfering substances:•WBC	NRBCs, Plt clumps/lyse-resistant RBCs	-
•RBC	cold agglutinins	-
•MCV or Hct	Hct: extreme leukocytosis	
Platelet	microcytes, Plt clumps	_
•Hb	extreme lipemia/leukocytosis	_
nterfering substances: differential	NRBCs, lyse-resistant RBCs, extreme hyperbilirubinemia	_
•		
lge- and sex-specific reference ranges Aax. CBCs per hr/max. CBCs & diffs. per hr	yes 120/120	— CRP 13 tests per hr/—
tecommended avg. frequency of calib. •Modes calibrated/parameters calibrated	6 months closed, open/WBC, RBC, Hb, Hct, Plt	— —/—
requency of blood/latex controls	per CLIA standards/not required	
Ain. specimen vol. open/closed/sample dead vol. closed ube sampling supported	130 µL/200 µL/1 mL yes	_/_/_ _
leterinary capability Aicrosample capability	yes yes	 yes
repares microscopic slides automatically or flags	yes	no
problems for slide prep f auto. slidemaker available, No. installed/list price	price \$40,000	_
rchives patient data for later comparison	yes	yes
atient-specific archiving Aax. archived data accessible when system online	yes 90,000, unlimited with Hemalink Data Manager	yes unlimited with Hemalink Data Manager
lemory capacity—numeric results–No. specimens	90,000, unlimited with Hemalink Data Manager	unlimited with Hemalink Data Manager
Aemory capacity—histo/cytograms–No. specimens •Stored in conjunction with CBC data	90,000, unlimited with Hemalink Data Manager yes	unlimited with Hemalink Data Manager —
•Histo/cytogram images & CBC data printed as 1 report saved results can be recalled and retransmitted	yes yes	
aved data can be sorted for reprocessing or report transmission	n yes	-
'erforms delta checks 'ags and holds results for followup, confirm. testing, or rerun		Ξ
arameters for flags for holding samples are defined by Some results can be transmitted to LIS while others held	user yes (operator programmable)	_
cattergram display: cell-specific color	no	-
listogram display: color with threshhold hoice of desired specimen &/or result info. displayed	yes yes	-
IS interface formats supported	proprietary, ASTM 1394 & 1238, HL7, IEEE MIB	_
formation transferred on LIS interface	numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument— broadcast;	_
	host query for demographics & orders	
OINC codes transmitted with results low labs get LOINC codes for reagent kits	no 	Ξ
ptional data mgmt. or collation system • Software features	yes enhanced QC, data archiving (Hemalink Data Manager), data collation from	yes, ABX Diagnostics enhanced QC, data archiving, data collation from multiple instruments, one
	multiple instruments	interface (LIS) for multiple ABX instruments
nterface avail. or planned to auto. specimen-handling system lar-code symbologies read on tube	Codabar, codes 39 & 128, ASTM, interl. 2 of 5	n/a —
accommodates bar-code placement per NCCLS standard Auto2A		-
ime required for maintenance by lab personnel	weekly: 10 min; monthly: 10 min	weekly: 15 min
Inboard maintenance records 'ime from communication of problem to engineer on site	yes 4 hrs average, 24 hrs guaranteed	-
Inboard diagnostics/limited to software problems Aftr. can perform diagnostics via modem	yes/yes yes, with Hemalink Data Manager	 yes
	,,	
aquisition program based on cost new sectable section	Voc	100
cquisition program based on cost-per-reportable result	yes automatic repeats for sample verification; MTBF>90 days; small footprint;	yes small sample size (8 µL) whole blood CRP (EDTA tube/serum); combined CBC

Part 4 of 9	Hig	gh-volume hematology	analyzers
Part 4 of 9		Bayer Diagnostics Nancy Lavon nancy lavon.b@bayer.com 555 White Plains Rd. Tarrytown, NY 10591	Bayer Diagnostics Nancy Lavon nancy.lavon.b@bayer.com 555 White Plains Rd. Tarrytown, NY 10591
See related article, pag	ge 36	800-431-1970 www.bayerdiag.com	800-431-1970 www.bayerdiag.com
Name of instrument First year sold–installe No. units installed in U	d in U.S./outside U.S. .S./outside U.S./list price	Advia 120 Hematology System 1998/1998 700/3,000/\$169,000-\$189,000	Advia 70 2001/2001 —/—/\$89,000
Test menu:	•Chartable	standard menu (left) plus: CHCM, MPV, RDW, HDW, LUC %&#, retic %&#, CHr, CHCMr, MCVr; CSF: WBC, RBC, PMN, MN, neut, lymph, mono</td><td>standard menu (left) plus: RDW, MPV</td></tr><tr><td>All instruments have: WBC, RBC, Hb, Hct, MCV, MCH, MCHC, Pit, %&# neut, mono, lymph, eos, baso</td><td></td><td>%: hypo, hyper, macro, micro; calc. Hb, MPXI; %: blasts, PMN, MN; large Pit count; RBC frag. count; RBC ghost count</td><td>none</td></tr><tr><td></td><td>•Flags</td><td>left shift, atyp. lymph, blasts, immature grans, myeloperox. deficiency, aniso, micro, macro, Hb variation, hypo, hyper, NRBC, RBC frag., RBC ghost,</td><td>diff., WBC, N, B, L, RBC, ABN, PL, CI, PIt/RBC</td></tr><tr><td>FDA-cleared tests but</td><td></td><td>large Pit, Pit clumps none</td><td>_</td></tr><tr><td>Tests in development</td><td>submitted for clearance</td><td>none IRF, MPC, MPM</td><td>_</td></tr><tr><td>For research-use-only Tests unique to analyz</td><td></td><td>CSF, eos CHCM, HDW, CHr, CHCMr, MPC, MPM; CSF: WBC, RBC, PMN, neut, lymph, mono</td><td>Pct, PDW —</td></tr><tr><td>Differential method(s)</td><td>used</td><td>perox-peroxidase cytochem. staining with light scatter & absorption; baso-cytochem. stripping with 2-angle laser light scatter</td><td>optical & enhanced impedance</td></tr><tr><td>Linearity:</td><td>•WBC count (10⁹/L)/RBC count (10¹²/L) •Hemoglobin (g/dL)/platelet (10⁹/L)</td><td></td><td>0.1–99/0.02–9.99 1.5–30/10–2,000</td></tr><tr><td>Precision</td><td>•MCV (fL) or Hct (%)</td><td>30-180 (MCV)</td><td>30–150 (MCV)</td></tr><tr><td></td><td>•WBC count/RBC count •Hb/platelet</td><td>2.7%/1.2% 0.93%/2.93%</td><td>2.0%/1.2% 1.0%/3–10%</td></tr><tr><td></td><td>•MCV or Hct I diff. compared with manual diff.,</td><td>0.78% (MCV) neut 0.997r, lymph 0.997r, mono 0.943r, eos 0.979r, baso 0.772r, luc 0.944r</td><td>1.0% (MCV) neut% r>0.9, lymph% r>0.9, mono% >0.7, eos% r>0.8, baso</td></tr><tr><td>per NCCLS H-20A Interfering substances</td><td></td><td>incomplete RBC lysis (perox only) cold agglutinins, extreme sickle cell</td><td>incomplete RBC lysis cold agglutinins</td></tr><tr><td></td><td>•MCV or Hct •Platelet</td><td>none none</td><td>extremely high white blood cell count (HCT) RBC fragments</td></tr><tr><td></td><td>•Hb</td><td>high WBC, lip., extremely high bili., interfere with cyanmethb. only, none with</td><td>lipemia, elevated WBC</td></tr><tr><td>Interfering substances</td><td>: differential</td><td>direct cellular Hb (CHCM) incomplete lysis of RBCs, complete myeloperox. deficiency</td><td>NRBCs, unlysed RBC, platelet clumps</td></tr><tr><td>Age- and sex-specific Max. CBCs per hr/max</td><td></td><td>yes 120/120</td><td>yes 70/70</td></tr><tr><td>Recommended avg. fre</td><td>equency of calib.</td><td>6 months</td><td>every 6 months per governmental requirements</td></tr><tr><td> Modes calibrated/ Frequency of blood/lat </td><td>parameters calibrated ex controls</td><td>open, closed, autosampler/all measured params once per shift/not required</td><td>open & closed/all measured parameters one level per shift/not required</td></tr><tr><td>Min. specimen vol. ope Tube sampling support</td><td>en/closed/sample dead vol. closed</td><td>157 µL/157 µL/<300 µL (tube size dependent) yes (2, 3, 5, 7 mL—all sizes–open tube)</td><td>90 μL/180 μL/120 μL yes (12x75)</td></tr><tr><td>Veterinary capability</td><td></td><td>yes</td><td>no</td></tr><tr><td>Microsample capability Prepares microscopic</td><td>y slides automatically or flags</td><td>yes yes</td><td>yes yes</td></tr><tr><td>problems for slide p If auto. slidemaker ava</td><td>ep ilable, No. installed/list price</td><td>Advia S60, just released/\$35,000</td><td>Advia S60, just released/\$35,000</td></tr><tr><td>Archives patient data f</td><td></td><td>yes</td><td>yes</td></tr><tr><td></td><td>cessible when system online</td><td>no 10,000 samples</td><td>yes 100,000</td></tr><tr><td></td><td>meric results–No. specimens to/cytograms–No. specimens</td><td>10,000 10,000</td><td>100,000 100,000</td></tr><tr><td> Stored in conjuncti </td><td></td><td>yes yes</td><td>yes yes</td></tr><tr><td>Saved results can be n</td><td>ecalled and retransmitted</td><td>yes</td><td>yes</td></tr><tr><td>Performs delta checks</td><td></td><td>yes</td><td>yes no</td></tr><tr><td></td><td>for followup, confirm. testing, or rerun or holding samples are defined by</td><td>yes user or vendor</td><td>yes user</td></tr><tr><td></td><td>ansmitted to LIS while others held</td><td>yes</td><td>all results for that sample are transmitted at once</td></tr><tr><td>Histogram display: col</td><td></td><td>yes yes yes</td><td>yes yes yes</td></tr><tr><td>LIS interface formats s Information transferred</td><td>upported</td><td>proprietary (Spec 79) numeric & flag results, histograms & scatterplots, instrument to LIS;</td><td>proprietary, ASTM 1394, E 1381 numeric & flag results, instrument to LIS; patient demographics,</td></tr><tr><td></td><td></td><td>patient demographics, orders, LIS to instrument— broadcast; host query for demographics & orders</td><td>LIS to instrument— broadcast</td></tr><tr><td>LOINC codes transmitt How labs get LOINC co</td><td></td><td>no online documentation</td><td>online documentation</td></tr><tr><td>Optional data mgmt. o</td><td></td><td>in development</td><td>in development</td></tr><tr><td> Software features Interface avail. or plan </td><td>ned to auto. specimen-handling system</td><td>MXS (Japan), LabCell (Bayer)</td><td>_</td></tr><tr><td>Bar-code symbologies</td><td></td><td>Codabar, codes 39 & 128, ASTM, interl. 2 of 5</td><td>Codabar, code 39, interl. 2 of 5 yes</td></tr><tr><td></td><td>itenance by lab personnel</td><td>daily: 15 min; weekly: 15 min; monthly: 15 min</td><td>daily: 0; weekly: 0; monthly: 20 min</td></tr><tr><td></td><td>tion of problem to engineer on site</td><td>yes territory dependent</td><td>yes territory dependent</td></tr><tr><td></td><td>mited to software problems nostics via modem</td><td>yes/no yes</td><td>yes/no in development</td></tr><tr><td>Mftr. can perform diag</td><td></td><td></td><td></td></tr><tr><td></td><td>ased on cost-per-reportable result</td><td>yes</td><td>yes</td></tr></tbody></table>	

			N _C
	High-	volume hematology an	alyzers
art 5 of 9		Beckman Coulter Inc. Martha M. Diaz/Cellular Analysis Marketing 200 S. Kraemer Blvd. Brea, CA 92822-8000 744 eco ecot	CAP TODAY / 41 Alyzers Beckman Coulter Inc. Martha M. Diaz/Cellular Analysis Marketing 200 S. Kraener Blvd. Brea, CA 92822-8000 The one one
ee related article, pag		714-993-8847 www.beckmancoulter.com	714-993-8847 www.beckmancoulter.com
	d in U.S./outside U.S.	Coulter LH 700 Series 2001 300/500/LH 750: \$195,000; LH 755: \$367,500	Coulter Gen+S System 1996 >1,200/>2,000/\$177,500; with slidemaker-stainer, \$327,000
st menu: All instruments have: C, RBC, Hb, Hct, MCV,		standard menu (left) plus: RDW, MPV, retic #&%, IRF, MPV, graded RBC morph, NRBC %&# PCT, PDW	standard menu (left) plus: RDW, MPV, retic #&%, graded RBC morph., MRV, IRF PCT, PDW
DA-cleared tests but r ests not available but ests in development	not clinically released submitted for clearance	user-definable age-, gender-, &/or location-based ref.; intervals, action & critical limits; user-def. RBC morph: gradient msgs. (=+, ++, +++); user- selectable sensitivity for diff. abnormal population suspect messages none none body fluids	user-definable age-, gender-&/or location-based ref. intervals, action & critical limits; user-def. RBC morph. gradient msgs. (=+, ++, +++); user-selectable sensitivity for diff. abnormal population suspect messages none — mone
or research-use-only ests unique to analyze		high light scatter retics, mean spherical cell volume NRBC, mean spherical cell volume	high light scatter retics, mean spherical cell volume mean spherical cell volume
recision:	•WBC count (10º/L)/RBC count (10¹²/L) •Hemoglobin (g/dL)/platelet (10º/L)	Coulter's 3-D VCS technology, AccuFlex technology with IntelliKinetics & AccuGate 0-400/0-8.0 0-25/0-3.000 50-200 (MCV) <1.7%/<0.8% <0.8% (MCV)	Coulter's 3-D VCS technology, AccuFlex technology with IntelliKinetics & AccuGate 0-140/0-8.0 0-25/0-1.500 50-200 (MCV) <1.7%/<0.8% <0.8%/<3.3% <0.8% (MCV)
per NCCLS H-20A iterfering substances:	•WBC	$\label{eq:linear} \begin{split} & lymph\%=\pm1.5\%, neut\%=\pm2.0\%, mono\%=\pm1.0\%, eos\%=\pm0.5\%, \\ & baso\%=\pm0.5\% \\ & unusual RBC cahormalities that resist lysing, NRBC, frag. WBC, unlysed particle >35 fl, large Plt \\ & very high WBC, high conc. large Plt, autoagglutinins \end{split}$	lymph%= ±3.0%, mono%= ±2.0%, neut%= ±3.0%, eos%= ±1.0%, baso%= ±1.0% unusual RBC abnormalities that resist lysing, NRBC, frag. WBC, unlysed particle >35 fL, large Plt very high WBC, high conc. large Plt, autoagglutinins
	•MCV or Hct •Platelet	MCV & Hct: very high WBC, high conc. large Plt, autoagglutinins very small RBCs & WBC frags. may interfere	MCV & Hct: very high WBC, high conc. large Plt, autoagglutinins very small RBCs & WBC frags. may cause no-fit
terfering substances:	•Hb differential	very high WBC, severe lipemia, heparin, rare lyse-resistant RBCs high triglycerides may affect lysing	very high WBC, severe lipemia, heparin, rare lyse-resistant RBCs high triglycerides may affect lysing
requency of blood/late lin. specimen vol. ope ube sampling support eterinary capability licrosample capability repares microscopic s problems for slide pro	CBCs & diffs. per hr quency of calib. avarameters calibrated ex controls n/closed/sample dead vol. closed ed j lides automatically or flags ep	yes 105/105 2 times per yr primary/RBC, WBC, Hb, MCV, Pit, MPV once per shift/once per day 200 µL/300 µL/50 µL with slidemaker/1.0 mL yes (multiple sizes & styles) no yes yes, both - 200 µL 5 (yes 105/105 2 times per yr primary/RBC, WBC, Hb, MCV, PIt, MPV once per shift/once per day 200 µL/300 µL/550 µL with slidemaker/1.0 mL yes (multiple sizes & styles) no yes yes yes, both >200 U.S./—
rchives patient data fo	ilable, No. installed/list price	>200 U.S./	>200 U.S./ yes
atient-specific archivi lax. archived data acc lemory capacity—hun lemory capacity—hist •Stored in conjunctiti •Histo/cytogram ima awed results can be re aved data can be sorte erforms delta checks ags and holds results arameters for flags fo ome results can be tri cattergram display: col istogram display: col	ng essible when system online neric results-No. specimens to/cytograms-No. specimens on with CBC data ges & CBC data printed as 1 report called and retransmitted d for reprocessing or report transmission for followup, confirm. testing, or rerun r holding samples are defined by ansmitted to LIS while others held all-specific color or with threshhold	yes 20,000 samples 20,000 5,000 yes yes yes	yes 20,000 samples 20,000 5,000 yes yes yes yes yes user or vendor yes yes yes user or vendor yes yes
IS interface formats so iformation transferred DINC codes transmitte	on LIS interface	RS-232, proprietary numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast no	RS-232, proprietary numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast no
ow labs get LOINC coo ptional data mgmt. or • Software features	des for reagent kits collation system	technical support yes enhanced QC, data archiving, common database, extensive decision rules, delta checking	vector yes enhanced QC, data archiving, common database, extensive decision rules, delta checking
ar-code symbologies		Beckman Coulter Codabar, codes 39 & 128, interl. 2 of 5, NW-7 yes	Codabar, codes 39 & 128, interl. 2 of 5, NW-7 yes
nboard maintenance r ime from communicat	records tion of problem to engineer on site nited to software problems	monthly: 2 min yes 	monthly: 2 min yes — yes/no yes
cquisition program ba	sed on cost-per-reportable result	yes	yes
istinguishing features		extensive decision support; enumeration of NRBCs with every differential; random access; automation ready; extended linearity for WBC and platelets using AccuCount Technology; integrated slidemaker/staining options	VCS technology; lowest review rate in class; no daily maintenance; triplicate counting; aperture burn circuit; sweepflow; SmartStart, AccuGate, AccuFlex, IntelliKInetics application; WBC in near native state; 3-D diff. display; online training and help

and the second sec	Hig	h-volume hematology	analyzers
Part 6 of 9		Beckman Coulter Inc. Martha M. Diaz/Cellular Analysis Marketing 200 S. Kraemer Blvd. Brea, CA 292822-8000	Beckman Coulter Inc. Martha M. Diaz/Cellular Analysis Marketing 200 S. Kraemer Blvd. Brea, CA 92622-8000
See related article, page 36		714-993-8847 www.beckmancoulter.com	714-993-8847 www.beckmancoulter.com
Name of instrument First year sold–installed in U No. units installed in U.S./ou		Coulter HmX 1999 HmX AL, 1999 HmX CP >400/>600(\$135,000 AL; \$120,000 CP	Coulter Maxm with Reticulocytes 1991 Maxm; 1992 Maxm AL >1,500/>2,000/Maxm with Retics \$90,000; Maxm AL with Re
Test menu: •Cha	rtable	standard menu (left) plus: RDW, MPV, retic #&%, graded RBC morph., IRF, MRV	standard menu (left) plus: RDW, MPV, retic #&%, graded RBC m
All instruments have: WBC, RBC, Hb, Hct, MCV, •Lab	oratory	PCT, PDW	PCT, PDW
MCH, MCHC, Pit, %&# neut, mono, lymph, eos, baso •Flag	IS	comprehensive high/low, definitive & suspect messages	comprehensive high/low, definitive & suspect messages
FDA-cleared tests but not cl		none	none
Tests not available but subn Tests in development	nitted for clearance	none	none none
For research-use-only Tests unique to analyzer		none none	mean retic volume, maturation index none
Differential method(s) used		Coulter's 3-D VCS technology	Coulter's 3-D VCS technology
	C count (10 ⁹ /L)/RBC count (10 ¹² /L) noglobin (g/dL)/platelet (10 ⁹ /L)	0–99.9/0–7.0 0–25/0–999	0–99.9/0–7.0 0–25/0–999
•MC\	/ (fL) or Hct (%) C count/RBC count	50–150 (MCV) <2.5%/<2.0%	50–150 (MCV) <2.5%/<2.0%
•Hb/	platelet	<1.5%/<5.0%	<1.5%/<5.0%
	/ or Hct	<2.0% (MCV)	<2.0% (MCV)
Accuracy of automated diff. per NCCLS H-20A	compared with manual diff.,	lymph%= ±3.0%, mono%= ±2.0%, neut%= ±3.0%, eos%= ±1.0%, baso%= ±1.0%	lymph%= $\pm 3.0\%$, mono%= $\pm 2.0\%$, neut%= $\pm 3.0\%$, eos%= $\pm baso\%= \pm 1.0\%$
Interfering substances:•WB	C	unusual RBC abnormalities that resist lysing, NRBC, frag. WBC, unlysed particle	unusual RBC abnormalities that resist lysing, NRBC, frag. WBC,
•RBC		>35 fL, large Plt very high WBC, high conc. of very large Plt, autoagglutinins	>35 fL, large Plt very high WBC, high conc. of very large Plt, autoagglutinins
•MC\	/ or Hct	MCV & Hct: very high WBC, high conc. of large Plt, autoagglutinins	MCV & Hct: very high WBC, high conc. of large Plt, autoaggl
•Plat	elet	very small RBCs & WBC frags. may cause no-fit	very small RBCs & WBC frags. may cause no-fit
•Hb		very high WBC, severe lipemia, heparin, rare lyse-resistant RBCs	very high WBC, severe lipemia, heparin, rare lyse-resistant
Interfering substances: diffe	rential	high triglycerides may affect lysing	high triglycerides may affect lysing
Age- and sex-specific refere Max. CBCs per hr/max. CBC		gender-specific printout 75/75	gender-specific printout 75/75
Recommended average freq	uency of calib.	2 times per yr	4 times per yr
Modes calibrated/paran Frequency of blood/latex co		primary/RBC, WBC, Hb, MCV, Pit, MPV once per shift/once per day	primary/RBC, WBC, Hb, MCV, Plt, MPV once per shift/once per day
Min. specimen vol. open/clo	sed/sample dead vol. closed	125 µL/185 µL/50 µL predilute/0.5 mL	125 µL/185 µL/50 µL predilute/0.5 mL
Tube sampling supported Veterinary capability		yes (multiple sizes & styles) no	yes (multiple sizes & styles) no
Microsample capability Prepares microscopic slides	automatically or flags	yes no	yes no
problems for slide prep			
If auto. slidemaker available		n/a	n/a
Archives patient data for lat Patient-specific archiving		yes yes	no yes
Max. archived data accessit Memory capacity—numeric		5,000 samples 5,000	5,000 samples 5,000
Memory capacity-histo/cy	tograms–No. specimens	5,000	5,000
•Stored in conjunction wi •Histo/cytogram images &	th CBC data & CBC data printed as 1 report	yes yes	yes yes
Saved results can be recalle		yes	yes
Performs delta checks		no	yes no
Tags and holds results for for Parameters for flags for hold		yes user or vendor	yes user or vendor
Some results can be transm	itted to LIS while others held	yes, through a selective batch process	no (all held)
Scattergram display: cell-sp Histogram display: color wit		4 colors/cell types colors without thresholds	4 colors/cell types colors without thresholds
Choice of desired specimen		no	no
LIS interface formats suppor Information transferred on L		RS-232, proprietary numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast	RS-232, proprietary numeric & flag results, histograms & scatterplots, instrument demographics, orders, LIS to instrument—broadcast
LOINC codes transmitted wit		no	no
How labs get LOINC codes for Optional data mgmt. or colla		technical support yes	technical support yes
Software features		enhanced QC, data archiving, common database, extensive decision rules, delta checking	enhanced QC, data archiving, common database, extensive de delta checking
	o auto. specimen-handling system	Beckman Coulter	Beckman Coulter
Bar-code symbologies read Accommodates bar-code pla	on tube cement per NCCLS standard Auto2A	Codabar, codes 39 & 128, interl. 2 of 5, NW-7 no	Codabar, codes 39 & 128, interl. 2 of 5, NW-7 no
Time required for maintenar		monthly: 2 min	monthly: 2 min
	f problem to engineer on site	no 	no
Onhoard diagnostics /limited	to software problems cs via modem	yes/no no	yes/no no
Mftr. can perform diagnostic	on cost-per-reportable result	yes	yes

	Hiah-	volume hematology and	CAP TODAY / 43 Alyzers Roche Diagnostics Corp. Andy Hay
	ingii	veraine nematorogy and	
art 7 of 9		Beckman Coulter Inc. Martha M. Diaz/Cellular Analysis Marketing	Roche Diagnostics Corp. Andy Hay
		200 S. Kraemer Blvd. Brea, CA 92822-8000	9115 Hague Rd. Indianapolis, IN 46250-0475
as related article n		714-993-8847	800-428-5074
ee related article, p	age 36	www.beckmancoulter.com	www.roche.com
ame of instrument irst year sold–instal	lled in U.S./outside U.S.	Coulter Ac+T 5diff Family 2001/2000	Sysmex XE-2100 2000
	U.S./outside U.S./list price	400/600/\$43,500 cap pierce model; \$38,500 open vial model	200/1,000/\$225,000
est menu:	•Chartable	standard menu (left) plus: RDW, MPV	standard menu (left) plus: NRBC %&#, retic %&#*, RDW-SD, RDW-CV, IRF,</td></tr><tr><td>All instruments have: BC, RBC, Hb, Hct, MC</td><td>v. •Laboratory</td><td>atyp. lymph. # (ATL#), atyp. lymph % (ATL%), immature cells # (IMM#),</td><td>Plt-O, HPC#, MPV none</td></tr><tr><td>CH, MCHC, Plt, %&# neu ono, lymph, eos, baso</td><td></td><td>immature cells % (IMM%), PCT, PDW</td><td></td></tr><tr><td></td><td>•riays</td><td>complete operator selectable flagging</td><td>Plt clumps, RBC agglut, turbidity, WBC ABN scattergram, RBC ABN distrib., Plt ABN distrib., RBC lyse resistance, blasts, immature grans, left shift, atyp. lymph., ABN lymph./blast., ret ABN scattergram</td></tr><tr><td></td><td>t not clinically released</td><td>none</td><td>none</td></tr><tr><td>ests not available bi ests in development</td><td>ut submitted for clearance t</td><td>none</td><td>none IG %&#</td></tr><tr><td>or research-use-onl ests unique to analy</td><td>ly</td><td>PCT, PDW, IMM, ATL none</td><td>P-LCR, PCT, PDW NRBC, HPC#</td></tr><tr><td>. ,</td><td></td><td></td><td>•</td></tr><tr><td>ifferential method(s</td><td>s) used</td><td>$A^{c}V$ technology combining cytochemistry, focused flow impedance, and light absorbance prinicples of measurement</td><td>fluorescent flow cytometry, RF/DC detecting method</td></tr><tr><td>inearity:</td><td>•WBC count (10⁹/L)/RBC count (10¹²/L) •Hemoglobin (g/dL)/platelet (10⁹/L)</td><td>0.4-91.3/0.23-7.7*</td><td>0-170/0-8</td></tr><tr><td></td><td>•MCV (fL) or Hct (%)</td><td>0–22/3.3–1,017* 1.8–63.8 (Hct)*</td><td>0–25/0–5,000 0–60 (Hct)</td></tr><tr><td>recision:</td><td> WBC count/RBC count Hb/platelet </td><td><2%/<2% <1%/<5%</td><td><3%/<1.5% <1.0%/<4.0%</td></tr><tr><td></td><td>•MCV or Hct</td><td><1.0% (MCV)</td><td><1.0% (Hct)</td></tr><tr><td>ccuracy of automate per NCCLS H-20A</td><td>ed diff. compared with manual diff.,</td><td>not available in NCCLS H-20A format</td><td>neut% R=0.95, lymph% R=0.95, mono% R=0.79, eos% R=0.92, baso% R=0.82, NRBC% R=0.96</td></tr><tr><td>terfering substance</td><td>es:•WBC</td><td>NRBCs, Plt clumps, large Plts, lyse-resistant RBCs</td><td>cold agglut., Plt aggreg., nucl. RBCs, cryoglob., lyse-resistant RBCs in patients with hemoglobinopathies, severe liver disease, or neonates</td></tr><tr><td></td><td>•RBC</td><td>cold agglutinins, Plt clumps, WBC overlinearity</td><td>cold agglut, severe microcytosis, frag. RBCs, large No. giant Pits, in vitro hemolysis</td></tr><tr><td></td><td>•MCV or Hct</td><td>Hct: lipemic samples, high WBC, cold aggluts</td><td>Hct: cold agglutinins, leukocytosis (>100,000/µL), ABN red cell fragility, spherocytosis</td></tr><tr><td></td><td>Platelet</td><td>RBC and WBC fragments</td><td>pseudothrombocytopenia, Plt aggreg., incr. microcytosis, megalocytic Plts</td></tr><tr><td>terfering substance</td><td>•Hb es: differential</td><td>elevated WBC, lipemia lyse-resistant RBCs, NRBCs, lipemia</td><td>lipemia, ABN proteins in blood plasma, severe leukocytosis (>100,000/µL) lyse-resistant RBCs</td></tr><tr><td></td><td>c reference ranges</td><td>yes</td><td>yes</td></tr><tr><td></td><td>ax. CBCs & diffs. per hr Ige frequency of calib.</td><td>60/60 6 months</td><td>150/150 annually</td></tr><tr><td></td><td>d/parameters calibrated</td><td>open/RBC, WBC, Hb, Hct, Plt</td><td>open, closed, capillary/WBC, RBC, Hb, Hct, Plt</td></tr><tr><td>equency of blood/la in. specimen vol. of</td><td>atex controis pen/closed/sample dead vol. closed</td><td>daily/none 30 µL for CBC/30 µL/varies by tube size;</td><td>per CLIA requirements/not required 130 µL/200 µL/1 mL</td></tr><tr><td>be sampling suppo</td><td>artad</td><td>53 µL for CBC-diff/53 µL for CBC-diff./varies by tube size yes (multiple sizes)</td><td>100</td></tr><tr><td>terinary capability</td><td></td><td>no</td><td>yes no</td></tr><tr><td>icrosample capabili epares microscopio</td><td>ity c slides automatically or flags</td><td>yes no</td><td>yes yes with Alpha or HST upgrade</td></tr><tr><td>problems for slide</td><td>prep</td><td></td><td></td></tr><tr><td>auto. slidemaker av</td><td>vailable, No. installed/list price</td><td>n/a</td><td>>1,000</td></tr><tr><td>chives patient data itient-specific archi</td><td>a for later comparison iving</td><td>yes no</td><td>yes yes</td></tr><tr><td>ax. archived data a</td><td>ccessible when system online</td><td>10,000 samples</td><td>10,000 samples</td></tr><tr><td></td><td>umeric results–No. specimens isto/cytograms–No. specimens</td><td>10,000 10,000</td><td>10,000 10,000</td></tr><tr><td> Stored in conjunc </td><td>tion with CBC data</td><td>yes</td><td>yes</td></tr><tr><td></td><td>nages & CBC data printed as 1 report recalled and retransmitted</td><td>yes yes</td><td>yes yes</td></tr><tr><td>ved data can be so rforms delta check</td><td>rted for reprocessing or report transmission</td><td></td><td>yes yes</td></tr><tr><td>gs and holds result</td><td>ts for followup, confirm. testing, or rerun</td><td>yes</td><td>yes</td></tr><tr><td colspan=2>arameters for flags for holding samples are defined by ome results can be transmitted to LIS while others held</td><td>user or vendor yes, through user-defined criteria</td><td>user or vendor yes</td></tr><tr><td>attergram display:</td><td>cell-specific color</td><td>no</td><td>yes</td></tr><tr><td></td><td>olor with threshhold ecimen &/or result info. displayed</td><td>yes yes</td><td>yes yes</td></tr><tr><td>S interface formats</td><td></td><td>proprietary</td><td>RS-232C/TCP IP</td></tr><tr><td></td><td>red on LIS interface</td><td>numeric & flag results, histograms & diff. plots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast</td><td>numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, orders, LIS to instrument—broadcast; host query for patient demographics & orders</td></tr><tr><td>DINC codes transmi</td><td></td><td>no technical support</td><td></td></tr><tr><td></td><td>codes for reagent kits or collation system</td><td>technical support yes</td><td>— yes, proprietary</td></tr><tr><td>Software features</td><td></td><td>enhanced QC, data archiving, common database, optional data mgmt., extensive decision rules, delta checking</td><td>enhanced QC, data archiving, data collation from multiple instruments, online QC</td></tr><tr><td></td><td>anned to auto. specimen-handling system</td><td>no</td><td>Roche, Labotix, IDS, A&T</td></tr><tr><td>r-code symbologie commodates bar-co</td><td>es read on tube ode placement per NCCLS standard Auto2A</td><td>Codabar, codes 39 & 128, interl. 2 of 5, EAN 8 & 13 yes</td><td>Codabar, codes 39 & 128, interl. 2 of 5, ITF, NW-7, EAN 8 & 13 yes</td></tr><tr><td></td><td>intenance by lab personnel</td><td>weekly: 5 min</td><td>daily: 15 min</td></tr><tr><td>nboard maintenance ime from communic</td><td></td><td>yes —</td><td>yes territory dependent</td></tr><tr><td colspan=2>Time from communication of problem to engineer on site Onboard diagnostics/limited to software problems</td><td>yes/no no</td><td>yes/no yes</td></tr><tr><td>ftr. can nerform dia</td><td></td><td></td><td></td></tr><tr><td>tr. can perform dia</td><td>based on cost-per-reportable result</td><td>no</td><td>Ves</td></tr><tr><td></td><td>based on cost-per-reportable result</td><td>no quant. 5-part WBC diff. instrument lists for <\$40,000; aspirates only</td><td>yes enumeration of NRBCs; throughput of 150 CBCs per hour; random access;</td></tr></tbody></table>

		xh volume hemetelegu	analuzara
	- HIG	h-volume hematology	analyzers
Part 8 of 9		Roche Diagnostics Corp. Andy Hay	Roche Diagnostics Corp. Andy Hay
		9115 Hague Rd. Indianapolis, IN 46250-0475	9115 Hague Rd. Indianapolis, IN 46250-0475
Can related article nor	- 2 <u>6</u>	800-428-5074 www.rche.com	800-428-5074 www.roche.com
See related article, page Name of instrument		Sysmex XE-2100L	Sysmex XE-2100 Alpha/HST
First year sold–installed No. units installed in U.S		2001 25/100/\$200,000	2000 >1,000 worldwide/\$360,000-\$1,000,000
Test menu: •	Chartable	standard menu (left) plus: MPV, RDW-SD, RDW-CV, NRBC %&#, HPC#	standard menu (left) plus: NRBC %&#, retic %&#, RDW-SD, RD</td></tr><tr><td>All instruments have: WBC, RBC, Hb, Hct, MCV, •</td><td>Laboratory</td><td>none</td><td>Pit-O, HPC#, MPV none</td></tr><tr><td>MCH, MCHC, Plt, %&# neut, mono, lymph, eos, baso</td><td>•Flags</td><td>Plt clumps, Plt ABN distribution, WBC ABN scattergram, blast imm. gran.,</td><td>Plt clumps, RBC agglut., turbidity, WBC ABN scattergram, RBC</td></tr><tr><td></td><td></td><td>left shift, atyp. lymph., ABN lymph./blasts, RBC ABN distribution, RBC lyse resistance, RBC agglut., turbidity</td><td>Plt ABN distrib., RBC lyse resistance, blasts, immature grans. atyp. lymph., ABN lymph./blast, ret. ABN scattergram</td></tr><tr><td>FDA-cleared tests but no</td><td></td><td>none</td><td>none</td></tr><tr><td>Tests not available but s Tests in development</td><td>submitted for clearance</td><td>none none</td><td>none IG %&#</td></tr><tr><td>For research-use-only</td><td></td><td>IG%&#</td><td>P-LCR, PCT, PDW</td></tr><tr><td>Tests unique to analyze</td><td></td><td>HPC#, NRBC</td><td>NRBC, HPC#</td></tr><tr><td>Differential method(s) us Linearity:</td><td>sed •WBC count (10º/L)/RBC count (10¹²/L)</td><td>fluorescent flow cytometry, RF/DC detecting method 0–170/0–8</td><td>fluorescent flow cytometry, RF/DC detecting method 0–170/0–8</td></tr><tr><td>•</td><td>Hemoglobin (g/dL)/platelet (10⁹/L)</td><td>0-25/0-5,000</td><td>0-25/0-5,000</td></tr><tr><td></td><td>•MCV (fL) or Hct (%) •WBC count/RBC count</td><td>0–60 (Hct) ≤3%/≤1.5%</td><td>0–60 (Hct) <3%/<1.5%</td></tr><tr><td>•</td><td>•Hb/platelet</td><td>≤1.0%/≤4.0%</td><td><1.0%/<4.0%</td></tr><tr><td></td><td>•MCV or Hct</td><td>≤1.0% (Hct)</td><td><1.0% (Hct)</td></tr><tr><td>Accuracy of automated per NCCLS H-20A</td><td>diff. compared with manual diff.,</td><td>neut% R=0.95, lymph% R=0.96, mono% R=0.79, eos% R=0.92, baso% R=0.82, NRBC% R=0.96</td><td>neut% R=0.95, lymph% R=0.95, mono% R=0.79, eos% R=0.92 baso% R=0.82, NRBC% R=0.96</td></tr><tr><td>Interfering substances:•</td><td>WBC</td><td>cold agglut., Plt aggreg., cryoglob., lyse-resistant RBCs, NRBCs</td><td>cold agglut., Pit aggreg., nucl. RBCs, cryoglob., lyse-resistant</td></tr><tr><td></td><td>RBC</td><td>cold agglut., severe microcytosis, frag. RBCs, leukocytosis (>100,000/µL)</td><td>patients with hemoglobinopathies, severe liver disease, or neo cold agglut., severe microcytosis, frag. RBCs, large No. giant P</td></tr><tr><td></td><td></td><td></td><td>hemolysis</td></tr><tr><td>•</td><td>•MCV or Hct</td><td>Hct: cold agglut., ABN red cell fragility, spherocytosis, leukocytosis (>100,000/µL)</td><td>Hct: cold agglut., leukocytosis (>100,000/µL), ABN red cell frag spherocytosis</td></tr><tr><td></td><td>•Platelet •Hb</td><td>pseudothrombocytopenia, Plt aggreg., incr. microcytosis, megaloblasts lipemia, ABN proteins, leukocytosis (>100,000/µL)</td><td>pseudothrombocytopenia, Plt aggreg., incr. microcytosis, meg: lipemia, ABN proteins in blood plasma, severe leukocytosis (>1</td></tr><tr><td>Interfering substances:</td><td></td><td>lyse-resistant RBCs</td><td>lyse-resistant RBCs</td></tr><tr><td>Age- and sex-specific re</td><td></td><td>yes</td><td>yes</td></tr><tr><td>Max. CBCs per hr/max. Recommended average</td><td></td><td>150/150 annually</td><td>150/600 annually</td></tr><tr><td> Modes calibrated/pa </td><td>arameters calibrated</td><td>open, closed, capillary/WBC, RBC, Hb, Hct, Plt</td><td>open, closed, capillary/WBC, RBC, Hb, Hct, Plt</td></tr><tr><td>Frequency of blood/late: Min. specimen vol. open</td><td>x controls 1/closed/sample dead vol. closed</td><td>per CLIA requirements/not required 130 µL/200 µL/1 mL</td><td>per CLIA requirements/not required 130 µL/200 µL/1 mL</td></tr><tr><td>Tube sampling supporte</td><td></td><td>yes</td><td>yes</td></tr><tr><td>Veterinary capability Microsample capability</td><td></td><td>no yes</td><td>no yes</td></tr><tr><td>Prepares microscopic sl</td><td>lides automatically or flags</td><td>no</td><td>yes</td></tr><tr><td>problems for slide pre If auto. slidemaker avail</td><td>ep lable, No. installed/list price</td><td>_</td><td>>1,000/\$250,000</td></tr><tr><td>Archives patient data fo</td><td>r later comparison</td><td>yes</td><td>yes</td></tr><tr><td>Patient-specific archivin</td><td>ng essible when system online</td><td>yes 10,000 samples</td><td>yes 10,000 samples</td></tr><tr><td>Memory capacity—num</td><td>eric results-No. specimens</td><td>10,000 samples</td><td>10,000</td></tr><tr><td>Memory capacity—histo •Stored in conjunction</td><td>o/cytograms–No. specimens n with CBC data</td><td>10,000 yes</td><td>10,000 yes</td></tr><tr><td>•Histo/cytogram imag</td><td>ges & CBC data printed as 1 report</td><td>yes</td><td>yes</td></tr><tr><td></td><td>called and retransmitted d for reprocessing or report transmission</td><td>yes ves</td><td>yes yes</td></tr><tr><td>Performs delta checks</td><td></td><td>yes</td><td>yes</td></tr><tr><td></td><td>for followup, confirm. testing, or rerun r holding samples are defined by</td><td>yes user or vendor</td><td>yes user or vendor</td></tr><tr><td>Some results can be tra</td><td>nsmitted to LIS while others held</td><td>yes</td><td>yes</td></tr><tr><td>Scattergram display: cel Histogram display: color</td><td></td><td>yes yes</td><td>yes yes</td></tr><tr><td></td><td>men &/or result info. displayed</td><td>yes</td><td>yes</td></tr><tr><td>LIS interface formats su Information transferred</td><td></td><td>RS-232C/TCP IP numeric & flag results, histograms & scatterplots, instrument to LIS; patient demographics, patient orders, LIS to instrument—broadcast; host query for patient demographics & orders</td><td>RS-232C/TCP IP numeric & flag results, histograms & scatterplots, instrument demographics, patient orders, LIS to instrument—broadcast; patient demographics & orders</td></tr><tr><td>LOINC codes transmitted</td><td></td><td>no</td><td>_</td></tr><tr><td>How labs get LOINC cod Optional data mgmt. or</td><td></td><td>n/a yes, proprietary</td><td>n/a yes, proprietary</td></tr><tr><td>Software features</td><td>Solution System</td><td>enhanced QC, data archiving, data collation from multiple instruments,</td><td>enhanced QC, data archiving, data collation from multiple inst</td></tr><tr><td>Interface avail. or plann</td><td>ed to auto. specimen-handling system</td><td>online QC Lab Interlink, MDS/AutoLab, Beckman Coulter, Roche, Labotix, A&T</td><td>online QC Roche, Labotix, IDS, A&T</td></tr><tr><td>Bar-code symbologies r</td><td>ead on tube e placement per NCCLS standard Auto2A</td><td>Codabar, codes 39 & 128, interl. 2 of 5, ITF, NW-7, EAN 8 & 13 yes</td><td>Codabar, codes 39 & 128, interl. 2 of 5, ITF, NW-7, EAN 8 & 13 yes</td></tr><tr><td>Accommodates bar-code</td><td>enance by lab personnel</td><td>daily: 15 min</td><td>daily: 15 min</td></tr><tr><td></td><td></td><td>yes</td><td>yes</td></tr><tr><td>Time required for mainte Onboard maintenance re</td><td></td><td></td><td></td></tr><tr><td>Time required for mainte Onboard maintenance re Time from communication</td><td>ecords ion of problem to engineer on site nited to software problems</td><td>territory dependent yes/no</td><td>territory dependent yes/no</td></tr><tr><td>Time required for mainte Onboard maintenance re Time from communication</td><td>ion of problem to engineer on site nited to software problems</td><td>territory dependent</td><td>territory dependent</td></tr><tr><td>Time required for mainte Onboard maintenance re Time from communicatio Onboard diagnostics/lim Mftr. can perform diagno</td><td>ion of problem to engineer on site nited to software problems</td><td>territory dependent yes/no</td><td>territory dependent yes/no</td></tr></tbody></table>

| Part 9 of 9 Roche Disgnostics Corp.
Andy Ray
9115 Kague R.d.
Indiangouslis, IN 48250-0475
600-428-5074 See related article, page 30 WWW.MORE.Com Name of instrument
First year sold-installed In U.S./outside U.S.
Out-units installed In U.S./outside U.S.
2001/005/154,500 2002 Test menu: • Chartable
Mice, Reit, H., Koll, • Laboratory
MRK, McDi, PH, Vale mot,
none, hmph, etc. Mae standard menu (eft) plus: relic
Mice, Reit, H., Koll, • Laboratory
MRK, McDi, PH, Vale mot,
none, hmph, etc. Mae PH clumps, PH ABM distribution
left shift, aby fumph, ABM hym
resistance, REG agilut, turbidi
none FDA-cleared tests but not clinically released
For research-use-only
Tests on available but submitted for clearance
none
Forests in development
For research-use-only
Tests on available but submitted
for research-use-only
Tests on available but submitted
or research-use-only
Tests on available but submitted
for research-use-only
Tests on available but submitted
for research-use-only
Tests on available but submitted
for research-use-only
Tests on available but submitted
information (arXI)/platibiet (109/L). FU-0 Differential method(s) used
WCV or Het fucrescent flow cytometry
SL/S-4.0%
SL/S-4.0% Accuracy of automated diff, compared with manual diff,
per NCOLS H-200 exed SL/S-4.0%
SL/S-4.0%
SL/S-4.0% Interfering substances: WBC coid agglut, PH aggreg, cryopi
was
McCols H-200 Interfering substances: differential
was CBCs per plant
fact accussion on coperclease/sample dead vol. closed
fub searching for bold/Accustontis
Min specinem vol. openc/Closed/SL, per tr
Max. a

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---|--|
| See related article, page 36 WWW.0064.com Name of instrument
First year sold-installed in U.S./outside U.S.
No. units installed in U.S./outside U.S.
2002 Symme XT-2000i
2002 Test menu: -Chartable standard menu (left) plus: relic
All instruments have:
WWW.0000 1145,000 Maine of instrument
All instruments have:
WWW.0000 114, stype
Relice Net Net Net Net Net Net Net Net Net Ne

 | hematology analyzers |
| See related article, page 36 WWW.0064.com Name of instrument
First year sold-installed in U.S./outside U.S.
No. units installed in U.S./outside U.S.
2002 Symme XT-2000i
2002 Test menu: -Chartable standard menu (left) plus: relic
All instruments have:
WWW.0000 1145,000 Maine of instrument
All instruments have:
WWW.0000 114, stype
Relice Net Net Net Net Net Net Net Net Net Ne

 | Roche Diagnostics Corp.
Andy Hay |
| B00-428-507 WWW.004.com Name of instrument
First year sold-installed in U.S./outside U.S. Nits price 300/100/3145.000 Name of instrument
First year sold-installed in U.S./outside U.S. Nits price standard menu (left) plus: relic
Mich. Molt, Pti, Nits and,
meno, hymph, neb, haw none All informents have
Molt, Molt, Pti, Nits and,
meno, hymph, neb, haw reliants
reliants
and and menu (left) plus: relic
All informents have
Molt, Molt, Pti, Nits and,
meno, hymph, neb, haw none FDA-cleared tests but not clinically released
rests unique to analyzer none FDA-cleared tests but not clinically released
rests unique to analyzer none PH-0 Hoursecent flow crytometry
erests on available but submitted for clearance
none none Precision: *WBC count/RBC count
*UBO caut/RBC c

 | 9115 Hague Rd. |
| See related article, page 36 www.rothe.com Name of instrument
No. units installed in U.S./outside U.S./ist price Sysmex XT-2000i
2010/01/5145,000 Test menu: •Charbable standard menu (left) plus: relic
Ministrument Network
No. Units installed in U.S./outside U.S./ist price none Ministrument Network
Network, Most, PM, Skas en eth
menu, hymph, eeb, base •Flags none PD-Cleared tests but not clinically released
rests not available but submitted for clearance
rests and available but submitted for clearance none Test way, in diversity
rests with available but submitted for clearance
rests not available but submitted for clearance none Tests mot available but submitted for clearance
rests mot available but submitted for clearance none Tests mot available but submitted for clearance none Precision: •WBC count/RBC count (10/74)
•WBC (10/74) (PABC count (10/74)
•WBC (10/74) (PABC count (10/74)
•BC (10/74) *Ad A/95
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•BC (10/74) *Ad A/95
•BC (10/74)
•BC (10/74) *Ad A/95
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•BC (10/74) *BC (10/74)
•BC (10/74) *BC (10/74)
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*BC (10/

 | Indianapolis, IN 46250-0475
800-428-5074 |
| First per sold-installed in U.S./utside U.S./its price 30/100/S145,000 Test menu: •Charable standard menu (left) plus: relic A least::minut here: none none Weit, Mick, PL, Yoka ment, none none PH clumps, PH ABM distribution none none Tests in development none none For research-use-only US/S4 none Tests in development none none Tests in development none none Tests in development 1.5%24 none Tests in development 1.5%5(He) 1.5%5(He) Accuracy of automated dff. compared with manual dff.,
per NCCLS H-2DA neutYs R=0.5%, baso% R=0.7% Interfering substances:-WBC cold agglut, per microcytos •MCV or Hct 1.5%5(He) Age-an dex-specific reference ranges yes Maccumatic activity yes Maccumated activity or glass gradies automated •MCV or Hct 1.5%1(He) Age-an dex-specific reference ranges yes Maccumated activity or glass gradies automated Microsomic activity or gaso yes Microsomic activity or gaso yes Maccuracy of automated dff. compared with manual dff.,
per NCCLS H-2DA meating t

 | www.roche.com |
| No. units installed in U.S./outside U.S./list price 30/100/\$145,000 Test more: -Chartable standard menu (left) plus: retic Ministement average none none PDA-cleared tests but not clinically released none none F2BA-cleared tests but not clinically released none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Tests not available but submitted for clearance none none Test not available but submitted for clearance none none Test not available but submitted for clearance none none Test not available but submitted for clearance none none Test not available but submitted none none t

 | Sysmex XT-1800i |
| All intervents have: none WCI, MCI, ML, W. MC, H. Schartory none PRO: Lings, PL ASN distribution
inf shift, zyp lymph, ASN lymp
resistance, RBC agglut, turbidi
none none FDA-cleared tests but not clinically released
instance, RBC agglut, turbidi
none none FDA-cleared tests but not clinically released
instance, RBC agglut, turbidi
none none FDA-cleared tests but not clinically released
instance, RBC agglut, turbidi
none none Tests in development
For research-use-only Userscent flow cytometry
PH-0 Differential method(s) used
Linearity: furge scent (109/L)/RBC count (107/L)
- MCV (100/L)/RBC count (107/L)
- MCV (100/L)/RBC count (107/L)
- MCV (100/L) or Hct
- MCV or Hct furge scent flow cytometry
- MCV or Hct Precision: - WCV or Hct clid agglut, Pt aggreg, cryogi
cold agglut, Pt aggreg, cryogi
- MCV or Hct pseudothrombocytopenia, Pt ag
ipenia, ABN proteins, leukocyt
ipenia, ads proteins, leukocyt
ipenia, data accessibitentering, norman
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mone, hymph, ess, haw •Flags PI clumps, PI ABN distribution
is distribution. ABN hym
resistance, RBC agulut, turbidi
none To Star of available but submitted for clearance
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per MCU or Hct neutrix Heo 35, hymph's R=0.56,
baso's R=0.70 Interfering substances: 'WBC cold agglut, Hagreg, cryogi
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 | , IRF, PIt-O, MPV, RDW-SD, RDW-CV standard menu (left) plus: MPV, RDW-SD, RDW-CV |
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lasts, RBC ABN distribution, RBC lyse left shift, atyp. lymph., ABN lymph./blasts, RBC ABN distribution</td></tr><tr><td>Tests in devideble but submitted for clearance
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Pt-0 Differential method(s) used fuorescent flow cytometry Linearity: •WBC count (10/L)/JRBC count (10/L) 0.6%&# 0-25/0-2.000 •WBC count/RBC count 5.5% (Hcl) Precision: •WBC count/RBC count 5.5% (Hcl) Accuracy of automated diff. compared with manual diff.,
per MCUS H-20A neut% R=0.95, lymph% R=0.96,
baso% R=0.76 Interfering substances: •MBC cold agglut, Pt agereg, cryopi •MCV or Hct Het: cold agglut, ABN red cell fit
(>100000/µL) •Platelet •NCV or Hct pseudothrombocytopenia, Pt at
lipemia, ABN proteins, leukocyt •MCV or Hct speudothrombocytopenia, Pt at
lipemia, ABN proteins, leukocyt •MCV or Hct speudothrombocytopenia, Pt at
lipemia, ABN proteins, leukocyt •MCV or Hct speudothrombocytopenia, Pt at
lipemia, ABN proteins, leukocyt •Max. CBCs per hr/max. CBCs & diffs, per hr 80/80 Recommende average frequency of callb. annually •Modes calibrated/parameters calibrated yes Tube sampling supported yes Veterinary capability no *Ust sidemaker available, No. installed/list price ratable tatato. sidemaker available, No. installed/list price</td><td>t ABN scattergram, NRBC resistance, RBC agglut., turbidity, NRBC</td></tr><tr><td>Tests unique to analyzer none Pir research-use-only FibS&# Differential method(s) used fluorescent flow cytometry Linearity: •WBC count (10/L)/RBC count (10/L) Precision: •WBC count/RBC count •WBC count/RBC count 530/s1.55 •WBC count/RBC count 5.55(.4C) •Pr NCLS H-20A neut% R=0.95(.5% R=0.76) Interfering substances: WBC cold agglut, severe microcytos •MCV or Hct Hct cold agglut, ABN red cell fit (>100.000/µL) Platelet seudoffrombocytopenia, PL a •MCV or Hct Hct cold agglut, ABN red cell fit (>100.000/µL) Interfering substances: differential yse-resistant RBCs Age- and sex-specific reference ranges yse Max. CBCs per hr/max. CBCs & diffs. per hr 80/80 Recommended average frequency of calls. annually •Wetorinary capability yes</t</td><td>none
none</td></tr><tr><td>Tests unique to analyzer PIt-0 Differential method(s) used fluorescent flow cytometry
+Hemoglobin (g/dL)/RBC count (10^{9/L}) Precision: +HOL (L) or Hct (%) Precision: +HOL (L) or Hct (%) Accuracy of automated diff. compared with manual diff.,
+HOL (L) or Hct automated diff. compared with manual diff.,
+MCV or Hct Accuracy of automated diff. compared with manual diff.,
+MCV or Hct neut% R=0.95, lymph% R=0.96,
base% R=0.76 Interfering substances:-WBC cold agglut, PI aggreg, cryogi
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ipenia, ABN proteins, leukcory MCV or Hct Hct cold agglut, ABN red cell fit
(>10000/µL) Max. GBCs per Inference ranges
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problems for slide accessible when system online 10,000 samples Memory capacity</td><td>none</td></tr><tr><td>Linearity: ••WBC count (10⁴/L) BC count (10⁴/L)
••MCV (IL) or Hct (%)
••MCV (IL) or Hct (%)
••MCV (IL) or Hct (%)
••MCV or Hct</td><td>IG%&#
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••Hempoline (gr/LL)/platelet (10°L)
••MCV (R) or Hat (%)
••MCV or Hat</td><td>fluorescent flow cytometry</td></tr><tr><td> Hemoglobin (gr/dL)/platelet (10%/L) MCV (IL) or Hct (%) MCV (IL) or Hct (%) MCV or Hct LS% (Hct) Accuracy of automated diff. compared with manual diff., ppr NCCLS H-20A neut% R=0.365, lymph% R=0.36, baso% R=0.76 Interfering substances: WBC cold agglut, PL aggreg, cryogl REC cold agglut, ABN red cell from the term of term</td><td>fluorescent flow cytometry
0–310/0–8</td></tr><tr><td>Precision: •WBC count/RBC count 53,0%/51,5% •Mb/platelot >51,5%/54,0% •Mb/v or htt >51,5%/54,0% Accuracy of automated diff. compared with manual diff., per NOCLS H-20A neut% R=0.95, tymph% R=0.96, baso% R=0.76 Interfering substances:-WBC cold agglut., Pit aggreg., cryopl •RBC cold agglut., Pit aggreg., cryopl •RBC cold agglut., ABI red cell fn (>100,000/µL) •Platelet pseudothrombocytopenia, Pit at ippenia, ABI proteins, fusikocyt •Hb interfering substances: differential Prequency of blod/latex controls ger., closed, capillary/WBC, RE per LA requirements/not requ Min. specimen vol. oper/closed/sample dead vol. closed gfs µL160 µL1 mL Prepares microscopic slides automatically or flags no Prepares microscopic slide accessible when system online 10,000 samples Memory capacity—mumeric results—No. specimens 10,000 samples Memory capacity—memoric results—No. specimens 10,000 samples Memory capacity—memeric results—No. specimens 10,000</td><td>0-25/0-2,000</td></tr><tr><td>• Hb/platelet 51.5%/:4.0% Accuracy of automated diff. compared with manual diff.,
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bass% R=0.76 Interfering substances:-WBC cold agglut., Pit aggreg., cryopi •RBC cold agglut., Pit aggreg., cryopi •NGV or Hct Hct: cold agglut., ABN red cell fit (>100,000/µL) •Platelet pseudothrombocytopenia, Pit aggreg., cryopi •HD ipemia, ABN proteins, leukocyt Interfering substances: differential yes Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs. per hr 80/80 Recommended average frequency of callb. annually •Min. specimen vol. oper/closed/sample dead vol. closed per CLA requirements/not require</td><td>0–60 (Hct)
≤3.0%/≤1.5%</td></tr><tr><td>Accuracy of automated diff. compared with manual diff.,
per NCCLS H-20A neut% R=0.95, lymph% R=0.96,
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(>100,000/µL) •Platelet
•Hb pseudothrombocytopenia, PIt at
lipemia, ABN proteins, leukocyt •MCV or Hct Hct: cold agglut, severe microcytos •MCV or Hct Hct: cold agglut, severe microcytos •MC Cocs per Infmax. CBCs & diffs. per hr Bol?80 Age- and sex-specific reference ranges yes Max. CBCs per Infmax. CBCs & diffs. per hr Bol?80 Recommended average frequency of callb. annually •Moles capability open, closed, capillary/WBC, RE Prequency of blood/latex controls yes Intersarplic capability yes Prepares microscopic slides automatically or flags no problems for slide prep If If auto. sildemaker available, No. installed/list price — Archives patient-specific archiving yes Min. specific archiving yes Miscographic mapability yes Prepares microscopic slides automatically or flags no</td</td><td>≤1.5%/≤4.0%</td></tr><tr><td>per NCCLS H-20A base% R=0.76 Interfering substances:-WBC cold agglut., Plt aggreg., cryopil •RBC cold agglut., Plt aggreg., cryopil •MCV or Hct Hct: cold agglut., ABN red cell fn (>100,000/µL) •Platelet pseudothrombocytopenia, Plt aggreg., cryopil •HD pseudothrombocytopenia, Plt aggreg., cryopil Interfering substances: differential yse-resistant RBCs Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs. per hr 80/80 Recommended average frequency of calls. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLA requirements/not req</td><td>≤1.5% (Hct)</td></tr><tr><td>Interfering substances:-WBC cold agglut., Pit aggreg., cryopit •RBC cold agglut., severe microcytos •MCV or Hct Hct: cold agglut., ABN red cell fit •Platelet pseudothrombocytopenia, Pit agree., civopit •Hb ipemia, ABN proteins, leukocyt Interfering substances: differential yse-resistant RBCs Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs, per hr 80/80 Recommended average frequency of callb. annually •Modes calibrated/parameters calibrated oper, closed, capillary/WBC, RE Frequency of blood/latx controls per CLLA requirements/not requiremen</td><td>o% R=0.90, eos% R=0.94, neut% R=0.95, lymph% R=0.96, mono% R=0.90, eos% R=0.94, baso% R=0.76</td></tr><tr><td>•MCV or Hct Hct: cold agglut, ABN red cell file •MCV or Hct (>100,000/µL) •Platelet pseudothrombocytopenia, Pli aginet, ABN proteins, leukocyt Interfering substances: differential lyse-resistant RBCs Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs, per hr 80/80 Recommended average frequency of calib. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLA requirements/not requ Min. specimen vol. open/closed/sample dead vol. closed gs µ/150 µL/1 mL ves problems for slide prep If auto. slidemaker available, No. installed/list price — Archives patient data for later comparison yes yes Prepares microscopic slides automatically or flags no pes Memory capacity—numeric results-No. specimens 10,000 samples Memory capacity—mumeric results-No. specimens 10,000 yes Saved results can be recalled and retramsmitted yes yes Tags and holds results for followup, confirm. testing, or rerun yes yes Saved results can be reasmitted to LS while others held y</td><td></td></tr><tr><td>•MCV or Het Hct: cold agglut, ABN red cell fi
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lipernia, ABN proteins, leukocyt Interfering substances: differential yes Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs, per hr 80/80 Recommended average frequency of calib. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLA requirements/not requ Min. specimen vol. oper/closed/sample dead vol. closed gb µ/150 µL/1 mL Yes yes Microsample capability yes Prepares microscopic slides automatically or flags no problems for slide prep yes Archives patient data for later comparison yes Patient-specific archiving yes Memory capacity—mueric results-No. specimens 10,000 •Memory capacity—mueric results -No. specimens 10,000 •Historychogram images & CBC data printed as 1 report yes Saved results can be rasmitted to LS while others held yes Saved results can be trasmitted to LS while others held yes Saved results can ber collation system no Patroms deid achecks yes Tags and holds results for followup, confirm. testing,</td><td>ıg. RBCs, leukocytosis (>100,000/μL) cold agglut., severe microcytosis, frag. RBCs, leukocytosis (>10</td></tr><tr><td>•Platelet
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lipernia, ABW proteins, leukocyt Interfering substances: differential yse-resistant RBCs Age- and sex-specific reference ranges yes Max. CBCs per hr/max. CBCs & diffs, per hr 80/80 Recommended average frequency of calib. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLIA requirements/not requirem</td><td></td></tr><tr><td>•HbIpemia, ABN proteins, teukocytInterfering substances: differentiallyse-resistant RBCsAge- and sex-specific reference rangesyesMax. CBCs per hr/max. CBCs & diffs, per hr80/80Recommended average frequency of calls.annually•Nodes calibrated/parameters calibratedopen, closed, capillary/WBC, REFrequency of blood/latex controlsper CLIA requirements/not resuits/no.specific archivingMax archived data accessible whe</td><td></td></tr><tr><td>Max. CBCs per hr/max. CBCs & diffs. per hr 80/80 Recommended average frequency of calib. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLIA requirements/not reprocessing or report transmission N</td><td></td></tr><tr><td>Recommended average frequency of calib. annually •Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/fatex controls per CLLA requirements/not required Min. specimen vol. open/closed/sample dead vol. closed Sp µL/150 µL/1 mL Tube sampling supported yes Veterinary capability no Prepares microscopic slides automatically or flags no problems for slide prep If auto. slidemaker available, No. installed/list price — Archives patient data for later comparison yes pes Memory capacity—mumeric results–No. specimens 10,000 samples Memory capacity—mumeric results–No. specimens Memory capacity—mumeric results–No. specimens 10,000 samples Memory capacity •Histo/cytogram images & CBC data printed as 1 report yes yes yes Saved data checks yes yes yes yes Performs delta checks yes yes yes yes Saved data checks yes yes yes yes Performs delta checks yes yes yes</td><td>yes</td></tr><tr><td>•Modes calibrated/parameters calibrated open, closed, capillary/WBC, RE Frequency of blood/latex controls per CLIA requirements/not requirements/not/not/not/not/not/not/not/not/not/not</td><td>80/80
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yes</td></tr><tr><td>Performs delta checks yes Tags and holds results for followup, confirm. testing, or rerun yes Parameters for flags for holding samples are defined by user or vendor Some results can be transmitted to LIS while others held yes Scattergram display: cell-specific color yes Histogram display: cell-specific color yes Choice of desired specimen &/or result info. displayed yes LIS interface formats supported RS-232C/TCP IP Information transferred on LIS interface numeric & flag results, histogra demographics, patient orders, L patient demographics & orders LOINC codes transmitted with results n/a Yes, potorietary • Software features • Software features unterlink, MDS/AutoLab, Be Bar-code symbologies read on tube Codabar, codes 39 & 128, interl. Accommodates bar-code placement per NCLS standard Auto2A yes Yes Time required for maintenance by lab personnel daily: 15 min Onboard maintenance records yes</td><td>yes</td></tr><tr><td>Parameters for flags for holding samples are defined by user or vendor Some results can be transmitted to LIS while others held yes Scattergram display: coll-specific color yes Histogram display: coll-specific color yes Choice of desired specimen &/or result info. displayed yes LLS interface formats supported RS-232C/TCP IP Information transferred on LIS interface numeric & flag results, histogran demographics, patient orders, L LOINC codes transmitted with results no How labs get LOINC codes for reagent kits n/a Optional data mgmt. or collation system yes, proprietary • Software features online QC Interface avail. or planned to auto. specimen-handling system Lab Interlink, MDS/AutoLab, Be Bar-code symbologies read on tube Codabar, codes 39 & 128, interl. Accommodates bar-code placement per NCCLS standard Auto2A yes Time required for maintenance by lab personnel daily: 15 min Onboard maintenance records yes</td><td>yes
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instrument—broadcast; host query for
cells demographics, patient orders, LIS to instrument—broadcast; h</td></tr><tr><td>How labs get LOINC codes for reagent kits n/a Optional data mgmt. or collation system yes, proprietary • Software features enhanced QC, data archiving, data online QC Interface avail. or planned to auto. specimen-handling system Lab Interlink, MDS/AutoLab, Be Bar-code symbologies read on tube Codabar, codes 39 & 128, interl Accommodates bar-code placement per NCCLS standard Auto2A yes Time required for maintenance by lab personnel daily: 15 min Onboard maintenance records yes</td><td>patient demographics & orders
no</td></tr><tr><td>Software features enhanced QC, data archiving, data a</td><td>n/a</td></tr><tr><td>online QC
Interface avail. or planned to auto. specimen-handling system
Bar-code symbologies read on tube
Accommodates bar-code placement per NCCLS standard Auto2A
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Time required for maintenance by lab personnel
Onboard maintenance records
daily: 15 min
yes</td><td>yes, proprietary
Illation from multiple instruments, enhanced QC, data archiving, data collation from multiple instr</td></tr><tr><td>Bar-code symbologies read on tube Codabar, codes 39 & 128, interl. Accommodates bar-code placement per NCCLS standard Auto2A yes Time required for maintenance by lab personnel daily: 15 min Onboard maintenance records yes</td><td>online QC</td></tr><tr><td>Time required for maintenance by lab personnel daily: 15 min
Onboard maintenance records yes</td><td>5, ITF, NW-7, EAN 8 & 13 Codabar, codes 39 & 128, interl. 2 of 5, ITF, NW-7, EAN 8 & 13</td></tr><tr><td>Onboard maintenance records yes</td><td>yes</td></tr><tr><td></td><td>daily: 15 min
yes</td></tr><tr><td></td><td>territory dependent</td></tr><tr><td>Onboard diagnostics/limited to software problems yes/no
Mftr. can perform diagnostics via modem yes</td><td>yes/no
yes</td></tr><tr><td>Acquisition program based on cost-per-reportable result yes</td><td>yes</td></tr><tr><td>Distinguishing features remote diagnostics; online QC;</td><td></td></tr></tbody></table> | |