CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT 23050801, 23050802, 23050803

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XT2000i, XT-1800i (Manual Sampling)

Parameters	LOW LOT 23050801		NORMAL LOT 23050802		HIGH LOT 23050803	
	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range
WBC (10^9/L)	**3.85** ± 0.80	3.05 - 4.65	**7.65** ± 1.00	6.65 - 8.65	**20.25** ± 2.20	18.05 - 22.45
RBC (10^{12}/L)	**2.35** ± 0.15	2.20 - 2.50	**4.65** ± 0.24	4.41 - 4.89	**5.80** ± 0.30	5.50 - 6.10
HGB (g/dL)	**6.1** ± 0.4	5.7 - 6.5	**13.6** ± 0.6	13.0 - 14.2	**18.1** ± 0.7	17.4 - 18.8
HCT (%)	**18.6** ± 2.0	16.6 - 20.6	**40.5** ± 2.5	38.0 - 43.0	**53.9** ± 3.0	50.9 - 56.9
MCV (fL)	**79.0** ± 5.0	74.0 - 84.0	**87.0** ± 5.0	82.0 - 92.0	**93.0** ± 5.0	88.0 - 98.0
MCH (pg)	**26.0** ± 2.5	23.5 - 28.5	**29.2** ± 2.5	26.7 - 31.7	**31.2** ± 2.5	28.7 - 33.7
MCHC (g/dL)	**32.9** ± 3.0	29.9 - 35.9	**33.6** ± 3.0	30.6 - 36.6	**33.6** ± 3.0	30.6 - 36.6
RDW-SD (fL)	**44.5** ± 10.0	34.5 - 54.5	**44.5** ± 10.0	34.5 - 54.5	**45.5** ± 10.0	35.5 - 55.5
RDW-CV (%)	**15.0** ± 5.0	10.0 - 20.0	**15.5** ± 5.0	10.5 - 20.5	**14.0** ± 5.0	9.0 - 19.0
PLT (10^9/L)	**51** ± 20	31 - 71	**202** ± 40	162 - 242	**401** ± 65	336 - 466
MPV (fL)	**8.9** ± 3.0	5.9 - 11.9	**9.7** ± 3.0	6.7 - 12.7	**10.1** ± 3.0	7.1 - 13.1
NEUT # (10^9/L)	**2.46** ± 0.60	1.86 - 3.06	**4.13** ± 1.00	3.13 - 5.13	**12.45** ± 2.43	10.02 - 14.88
LYMPH # (10^9/L)	**0.73** ± 0.35	0.38 - 1.08	**2.30** ± 0.77	1.53 - 3.07	**4.35** ± 2.02	2.33 - 6.37
MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.27** ± 0.27	0.00 - 0.54	**0.51** ± 0.51	0.00 - 1.02
EO # (10^9/L)	**0.56** ± 0.27	0.29 - 0.83	**0.96** ± 0.54	0.42 - 1.50	**2.94** ± 1.42	1.52 - 4.36
BASO # (10^9/L)	**3.08** ± 1.20	1.88 - 4.28	**5.74** ± 3.00	2.74 - 8.74	**16.20** ± 5.00	11.20 - 21.20
NEUT%	**64.0** ± 12.0	52.0 - 76.0	**54.0** ± 12.0	42.0 - 66.0	**61.5** ± 12.0	49.5 - 73.5
LYMPH%	**19.0** ± 9.0	10.0 - 28.0	**30.0** ± 10.0	20.0 - 40.0	**21.5** ± 10.0	11.5 - 31.5
MONO%	**2.5** ± 2.5	0.0 - 5.0	**3.5** ± 3.5	0.0 - 7.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**14.5** ± 7.0	7.5 - 21.5	**12.5** ± 7.0	5.5 - 19.5	**14.5** ± 7.0	7.5 - 21.5
BASO%	**80.0** ± 20.0	60.0 - 100.0	**75.0** ± 25.0	50.0 - 100.0	**80.0** ± 20.0	60.0 - 100.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**41** ± 35	6 - 76	**175** ± 65	110 - 240	**380** ± 85	295 - 465
PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.39** ± 0.11	0.28 - 0.50
PDW (fL)	**11.0** ± 5.0	6.0 - 16.0	**12.0** ± 5.0	7.0 - 17.0	**12.0** ± 5.0	7.0 - 17.0
P-LCR (%)	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0
IG # (10^9/L)	**0.58** ± 0.50	0.08 - 1.08	**1.03** ± 1.03	0.00 - 2.06	**3.34** ± 2.00	1.34 - 5.34
IG %	**15.0** ± 12.0	3.0 - 27.0	**13.5** ± 13.5	0.0 - 27.0	**16.5** ± 10.0	6.5 - 26.5
DIFF-X (ch)	**139.0** ± 30.0	109.0 - 169.0	**142.0** ± 30.0	112.0 - 172.0	**143.0** ± 30.0	113.0 - 173.0
DIFF-Y (ch)	**56.0** ± 30.0	26.0 - 86.0	**56.0** ± 30.0	26.0 - 86.0	**50.0** ± 30.0	20.0 - 80.0
BASO-X (ch)	**109.0** ± 30.0	79.0 - 139.0	**106.0** ± 30.0	76.0 - 136.0	**109.0** ± 30.0	79.0 - 139.0
BASO-Y (ch)	**139.0** ± 40.0	99.0 - 179.0	**136.0** ± 40.0	96.0 - 176.0	**138.0** ± 40.0	98.0 - 178.0
RBC-O (10^{12}/L)*	**2.46** ± 0.30	2.16 - 2.76	**4.65** ± 0.50	4.15 - 5.15	**5.84** ± 0.60	5.24 - 6.44
RBC-X (ch)*	**22.0** ± 15.0	7.0 - 37.0	**24.0** ± 15.0	9.0 - 39.0	**24.0** ± 15.0	9.0 - 39.0
RBC-Y (ch)*	**146.0** ± 35.0	111.0 - 181.0	**162.0** ± 35.0	127.0 - 197.0	**170.0** ± 35.0	135.0 - 205.0

*Not available for the Sysmex XT-1800i

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT 23050801, 23050802, 23050803

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XT-2000i, XT-1800i (Closed Sampling)

Parameters	LOW LOT 23050801		NORMAL LOT 23050802		HIGH LOT 23050803	
	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range
WBC (10^9/L)	**3.85** ± 0.80	3.05 - 4.65	**7.25** ± 1.00	6.25 - 8.25	**19.10** ± 2.20	16.90 - 21.30
RBC (10^{12}/L)	**2.35** ± 0.15	2.20 - 2.50	**4.65** ± 0.24	4.41 - 4.89	**5.70** ± 0.30	5.40 - 6.00
HGB (g/dL)	**6.1** ± 0.4	5.7 - 6.5	**13.6** ± 0.6	13.0 - 14.2	**17.9** ± 0.7	17.2 - 18.6
HCT (%)	**18.6** ± 2.0	16.6 - 20.6	**40.5** ± 2.5	38.0 - 43.0	**53.0** ± 3.0	50.0 - 56.0
MCV (fL)	**79.0** ± 5.0	74.0 - 84.0	**87.0** ± 5.0	82.0 - 92.0	**93.0** ± 5.0	88.0 - 98.0
MCH (pg)	**26.0** ± 2.5	23.5 - 28.5	**29.2** ± 2.5	26.7 - 31.7	**31.4** ± 2.5	28.9 - 33.9
MCHC (g/dL)	**32.9** ± 3.0	29.9 - 35.9	**33.6** ± 3.0	30.6 - 36.6	**33.8** ± 3.0	30.8 - 36.8
RDW-SD (fL)	**44.5** ± 10.0	34.5 - 54.5	**44.5** ± 10.0	34.5 - 54.5	**45.5** ± 10.0	35.5 - 55.5
RDW-CV (%)	**15.0** ± 5.0	10.0 - 20.0	**15.5** ± 5.0	10.5 - 20.5	**14.0** ± 5.0	9.0 - 19.0
PLT (10^9/L)	**51** ± 20	31 - 71	**202** ± 40	162 - 242	**362** ± 65	297 - 427
MPV (fL)	**8.9** ± 3.0	5.9 - 11.9	**9.7** ± 3.0	6.7 - 12.7	**10.1** ± 3.0	7.1 - 13.1
NEUT # (10^9/L)	**2.46** ± 0.60	1.86 - 3.06	**3.92** ± 1.00	2.92 - 4.92	**11.75** ± 2.29	9.46 - 14.04
LYMPH # (10^9/L)	**0.73** ± 0.35	0.38 - 1.08	**2.18** ± 0.73	1.45 - 2.91	**4.11** ± 1.91	2.20 - 6.02
MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.25** ± 0.25	0.00 - 0.50	**0.48** ± 0.48	0.00 - 0.96
EO # (10^9/L)	**0.56** ± 0.27	0.29 - 0.83	**0.91** ± 0.51	0.40 - 1.42	**2.77** ± 1.34	1.43 - 4.11
BASO # (10^9/L)	**3.08** ± 1.20	1.88 - 4.28	**5.44** ± 3.00	2.44 - 8.44	**15.28** ± 5.00	10.28 - 20.28
NEUT%	**64.0** ± 12.0	52.0 - 76.0	**54.0** ± 12.0	42.0 - 66.0	**61.5** ± 12.0	49.5 - 73.5
LYMPH%	**19.0** ± 9.0	10.0 - 28.0	**30.0** ± 10.0	20.0 - 40.0	**21.5** ± 10.0	11.5 - 31.5
MONO%	**2.5** ± 2.5	0.0 - 5.0	**3.5** ± 3.5	0.0 - 7.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**14.5** ± 7.0	7.5 - 21.5	**12.5** ± 7.0	5.5 - 19.5	**14.5** ± 7.0	7.5 - 21.5
BASO%	**80.0** ± 20.0	60.0 - 100.0	**75.0** ± 25.0	50.0 - 100.0	**80.0** ± 20.0	60.0 - 100.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**41** ± 35	6 - 76	**175** ± 65	110 - 240	**352** ± 85	267 - 437
PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.39** ± 0.11	0.28 - 0.50
PDW (fL)	**11.0** ± 5.0	6.0 - 16.0	**12.0** ± 5.0	7.0 - 17.0	**12.0** ± 5.0	7.0 - 17.0
P-LCR (%)	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0
IG # (10^9/L)	**0.58** ± 0.50	0.08 - 1.08	**0.98** ± 0.98	0.00 - 1.96	**3.15** ± 2.00	1.15 - 5.15
IG %	**15.0** ± 12.0	3.0 - 27.0	**13.5** ± 13.5	0.0 - 27.0	**16.5** ± 10.0	6.5 - 26.5
DIFF-X (ch)	**139.0** ± 30.0	109.0 - 169.0	**142.0** ± 30.0	112.0 - 172.0	**143.0** ± 30.0	113.0 - 173.0
DIFF-Y (ch)	**56.0** ± 30.0	26.0 - 86.0	**56.0** ± 30.0	26.0 - 86.0	**50.0** ± 30.0	20.0 - 80.0
BASO-X (ch)	**109.0** ± 30.0	79.0 - 139.0	**106.0** ± 30.0	76.0 - 136.0	**109.0** ± 30.0	79.0 - 139.0
BASO-Y (ch)	**139.0** ± 40.0	99.0 - 179.0	**136.0** ± 40.0	96.0 - 176.0	**138.0** ± 40.0	98.0 - 178.0
RBC-O (10^{12}/L)*	**2.46** ± 0.30	2.16 - 2.76	**4.65** ± 0.50	4.15 - 5.15	**5.84** ± 0.60	5.24 - 6.44
RBC-X (ch)*	**22.0** ± 15.0	7.0 - 37.0	**24.0** ± 15.0	9.0 - 39.0	**24.0** ± 15.0	9.0 - 39.0
RBC-Y (ch)*	**146.0** ± 35.0	111.0 - 181.0	**162.0** ± 35.0	127.0 - 197.0	**170.0** ± 35.0	135.0 - 205.0

*Not available for the Sysmex XT-1800i

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT **23050801, 23050802, 23050803**

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XS-1000i (Manual Sampling)

Parameters	LOW LOT 23050801		NORMAL LOT 23050802		HIGH LOT 23050803	
	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range
WBC-C (10^9/L)	**4.00** ± 1.20	2.80 - 5.20	**7.95** ± 1.80	6.15 - 9.75	**21.00** ± 3.00	18.00 - 24.00
WBC-D (10^9/L)	**4.05** ± 1.20	2.85 - 5.25	**7.75** ± 1.80	5.95 - 9.55	**20.00** ± 3.00	17.00 - 23.00
RBC (10^{12}/L)	**2.30** ± 0.15	2.15 - 2.45	**4.70** ± 0.24	4.46 - 4.94	**5.85** ± 0.30	5.55 - 6.15
HGB (g/dL)	**5.9** ± 0.4	5.5 - 6.3	**13.5** ± 0.6	12.9 - 14.1	**18.1** ± 0.7	17.4 - 18.8
HCT (%)	**18.3** ± 2.0	16.3 - 20.3	**41.4** ± 2.5	38.9 - 43.9	**54.7** ± 3.0	51.7 - 57.7
MCV (fL)	**79.5** ± 5.0	74.5 - 84.5	**88.0** ± 5.0	83.0 - 93.0	**93.5** ± 5.0	88.5 - 98.5
MCH (pg)	**25.7** ± 2.5	23.2 - 28.2	**28.7** ± 2.5	26.2 - 31.2	**30.9** ± 2.5	28.4 - 33.4
MCHC (g/dL)	**32.3** ± 3.0	29.3 - 35.3	**32.6** ± 3.0	29.6 - 35.6	**33.1** ± 3.0	30.1 - 36.1
RDW-SD (fL)	**45.0** ± 10.0	35.0 - 55.0	**46.0** ± 10.0	36.0 - 56.0	**45.5** ± 10.0	35.5 - 55.5
RDW-CV (%)	**16.0** ± 5.0	11.0 - 21.0	**15.5** ± 5.0	10.5 - 20.5	**14.5** ± 5.0	9.5 - 19.5
PLT (10^9/L)	**50** ± 25	25 - 75	**200** ± 40	160 - 240	**395** ± 65	330 - 460
MPV (fL)	**8.9** ± 3.0	5.9 - 11.9	**9.9** ± 3.0	6.9 - 12.9	**10.3** ± 3.0	7.3 - 13.3
NEUT # (10^9/L)	**2.23** ± 1.01	1.22 - 3.24	**3.57** ± 1.16	2.41 - 4.73	**10.50** ± 4.00	6.50 - 14.50
LYMPH # (10^9/L)	**0.77** ± 0.49	0.28 - 1.26	**2.44** ± 1.16	1.28 - 3.60	**4.60** ± 2.40	2.20 - 7.00
MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.23** ± 0.23	0.00 - 0.46	**0.50** ± 0.50	0.00 - 1.00
EO # (10^9/L)	**0.59** ± 0.41	0.18 - 1.00	**0.93** ± 0.70	0.23 - 1.63	**2.70** ± 2.00	0.70 - 4.70
BASO # (10^9/L)	**0.36** ± 0.36	0.00 - 0.72	**0.58** ± 0.58	0.00 - 1.16	**1.70** ± 1.70	0.00 - 3.40
NEUT%	**55.0** ± 25.0	30.0 - 80.0	**46.0** ± 15.0	31.0 - 61.0	**52.5** ± 20.0	32.5 - 72.5
LYMPH%	**19.0** ± 12.0	7.0 - 31.0	**31.5** ± 15.0	16.5 - 46.5	**23.0** ± 12.0	11.0 - 35.0
MONO%	**2.5** ± 2.5	0.0 - 5.0	**3.0** ± 3.0	0.0 - 6.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**14.5** ± 10.0	4.5 - 24.5	**12.0** ± 9.0	3.0 - 21.0	**13.5** ± 10.0	3.5 - 23.5
BASO%	**9.0** ± 9.0	0.0 - 18.0	**7.5** ± 7.5	0.0 - 15.0	**8.5** ± 8.5	0.0 - 17.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PCT (%)	**0.04** ± 0.03	0.01 - 0.07	**0.20** ± 0.07	0.13 - 0.27	**0.41** ± 0.11	0.30 - 0.52
PDW (fL)	**12.0** ± 5.0	7.0 - 17.0	**12.5** ± 5.0	7.5 - 17.5	**13.0** ± 5.0	8.0 - 18.0
P-LCR (%)	**15.5** ± 12.0	3.5 - 27.5	**20.0** ± 13.0	7.0 - 33.0	**22.5** ± 15.0	7.5 - 37.5
DIFF-X (ch)	**148.5** ± 30.0	118.5 - 178.5	**145.0** ± 30.0	115.0 - 175.0	**147.0** ± 30.0	117.0 - 177.0
DIFF-Y (ch)	**53.0** ± 30.0	23.0 - 83.0	**53.5** ± 30.0	23.5 - 83.5	**56.0** ± 30.0	26.0 - 86.0
FSC-X	**29.5** ± 10.0	19.5 - 39.5	**28.5** ± 10.0	18.5 - 38.5	**29.5** ± 15.0	14.5 - 44.5

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT **23050801, 23050802, 23050803**

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XT-4000i (Manual Sampling)

Parameters	LOW LOT 23050801 Assay Mean ± Limit	LOW Expected Range	NORMAL LOT 23050802 Assay Mean ± Limit	NORMAL Expected Range	HIGH LOT 23050803 Assay Mean ± Limit	HIGH Expected Range
WBC (10^9/L)	**3.85** ± 0.80	3.05 - 4.65	**7.65** ± 1.00	6.65 - 8.65	**20.25** ± 2.20	18.05 - 22.45
RBC (10^{12}/L)	**2.35** ± 0.15	2.20 - 2.50	**4.65** ± 0.24	4.41 - 4.89	**5.80** ± 0.30	5.50 - 6.10
HGB (g/dL)	**6.1** ± 0.4	5.7 - 6.5	**13.6** ± 0.6	13.0 - 14.2	**18.1** ± 0.7	17.4 - 18.8
HCT (%)	**18.6** ± 2.0	16.6 - 20.6	**40.5** ± 2.5	38.0 - 43.0	**53.9** ± 3.0	50.9 - 56.9
MCV (fL)	**79.0** ± 5.0	74.0 - 84.0	**87.0** ± 5.0	82.0 - 92.0	**93.0** ± 5.0	88.0 - 98.0
MCH (pg)	**26.0** ± 2.5	23.5 - 28.5	**29.2** ± 2.5	26.7 - 31.7	**31.2** ± 2.5	28.7 - 33.7
MCHC (g/dL)	**32.9** ± 3.0	29.9 - 35.9	**33.6** ± 3.0	30.6 - 36.6	**33.6** ± 3.0	30.6 - 36.6
RDW-SD (fL)	**44.5** ± 10.0	34.5 - 54.5	**44.5** ± 10.0	34.5 - 54.5	**45.5** ± 10.0	35.5 - 55.5
RDW-CV (%)	**15.0** ± 5.0	10.0 - 20.0	**15.5** ± 5.0	10.5 - 20.5	**14.0** ± 5.0	9.0 - 19.0
PLT (10^9/L)	**51** ± 20	31 - 71	**202** ± 40	162 - 242	**401** ± 65	336 - 466
MPV (fL)	**8.9** ± 3.0	5.9 - 11.9	**9.7** ± 3.0	6.7 - 12.7	**10.1** ± 3.0	7.1 - 13.1
NEUT # (10^9/L)	**2.46** ± 0.60	1.86 - 3.06	**4.13** ± 1.00	3.13 - 5.13	**12.45** ± 2.43	10.02 - 14.88
LYMPH # (10^9/L)	**0.73** ± 0.35	0.38 - 1.08	**2.30** ± 0.77	1.53 - 3.07	**4.35** ± 2.02	2.33 - 6.37
MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.27** ± 0.27	0.00 - 0.54	**0.51** ± 0.51	0.00 - 1.02
EO # (10^9/L)	**0.56** ± 0.27	0.29 - 0.83	**0.96** ± 0.54	0.42 - 1.50	**2.94** ± 1.42	1.52 - 4.36
BASO # (10^9/L)	**3.08** ± 1.20	1.88 - 4.28	**5.74** ± 3.00	2.74 - 8.74	**16.20** ± 5.00	11.20 - 21.20
NEUT%	**64.0** ± 12.0	52.0 - 76.0	**54.0** ± 12.0	42.0 - 66.0	**61.5** ± 12.0	49.5 - 73.5
LYMPH%	**19.0** ± 9.0	10.0 - 28.0	**30.0** ± 10.0	20.0 - 40.0	**21.5** ± 10.0	11.5 - 31.5
MONO%	**2.5** ± 2.5	0.0 - 5.0	**3.5** ± 3.5	0.0 - 7.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**14.5** ± 7.0	7.5 - 21.5	**12.5** ± 7.0	5.5 - 19.5	**14.5** ± 7.0	7.5 - 21.5
BASO%	**80.0** ± 20.0	60.0 - 100.0	**75.0** ± 25.0	50.0 - 100.0	**80.0** ± 20.0	60.0 - 100.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**41** ± 35	6 - 76	**175** ± 65	110 - 240	**380** ± 85	295 - 465
PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.39** ± 0.11	0.28 - 0.50
PDW (fL)	**11.0** ± 5.0	6.0 - 16.0	**12.0** ± 5.0	7.0 - 17.0	**12.0** ± 5.0	7.0 - 17.0
P-LCR (%)	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0
IG # (10^9/L)	**0.58** ± 0.50	0.08 - 1.08	**1.03** ± 1.03	0.00 - 2.06	**3.34** ± 2.00	1.34 - 5.34
IG %	**15.0** ± 12.0	3.0 - 27.0	**13.5** ± 13.5	0.0 - 27.0	**16.5** ± 10.0	6.5 - 26.5
DIFF-X (ch)	**139.0** ± 30.0	109.0 - 169.0	**142.0** ± 30.0	112.0 - 172.0	**143.0** ± 30.0	113.0 - 173.0
DIFF-Y (ch)	**56.0** ± 30.0	26.0 - 86.0	**56.0** ± 30.0	26.0 - 86.0	**50.0** ± 30.0	20.0 - 80.0
BASO-X (ch)	**109.0** ± 30.0	79.0 - 139.0	**106.0** ± 30.0	76.0 - 136.0	**109.0** ± 30.0	79.0 - 139.0
BASO-Y (ch)	**139.0** ± 40.0	99.0 - 179.0	**136.0** ± 40.0	96.0 - 176.0	**138.0** ± 40.0	98.0 - 178.0
RBC-O (10^{12}/L)	**2.46** ± 0.30	2.16 - 2.76	**4.65** ± 0.50	4.15 - 5.15	**5.84** ± 0.60	5.24 - 6.44
RBC-X (ch)	**22.0** ± 15.0	7.0 - 37.0	**24.0** ± 15.0	9.0 - 39.0	**24.0** ± 15.0	9.0 - 39.0
RBC-Y (ch)	**146.0** ± 35.0	111.0 - 181.0	**162.0** ± 35.0	127.0 - 197.0	**170.0** ± 35.0	135.0 - 205.0

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT **23050801, 23050802, 23050803**

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XT-4000i (Closed Sampling)

Parameters	LOW LOT 23050801 Assay Mean ± Limit	LOW Expected Range	NORMAL LOT 23050802 Assay Mean ± Limit	NORMAL Expected Range	HIGH LOT 23050803 Assay Mean ± Limit	HIGH Expected Range
WBC (10^9/L)	**3.85** ± 0.80	3.05 - 4.65	**7.25** ± 1.00	6.25 - 8.25	**19.10** ± 2.20	16.90 - 21.30
RBC (10^{12}/L)	**2.35** ± 0.15	2.20 - 2.50	**4.65** ± 0.24	4.41 - 4.89	**5.70** ± 0.30	5.40 - 6.00
HGB (g/dL)	**6.1** ± 0.4	5.7 - 6.5	**13.6** ± 0.6	13.0 - 14.2	**17.9** ± 0.7	17.2 - 18.6
HCT (%)	**18.6** ± 2.0	16.6 - 20.6	**40.5** ± 2.5	38.0 - 43.0	**53.0** ± 3.0	50.0 - 56.0
MCV (fL)	**79.0** ± 5.0	74.0 - 84.0	**87.0** ± 5.0	82.0 - 92.0	**93.0** ± 5.0	88.0 - 98.0
MCH (pg)	**26.0** ± 2.5	23.5 - 28.5	**29.2** ± 2.5	26.7 - 31.7	**31.4** ± 2.5	28.9 - 33.9
MCHC (g/dL)	**32.9** ± 3.0	29.9 - 35.9	**33.6** ± 3.0	30.6 - 36.6	**33.8** ± 3.0	30.8 - 36.8
RDW-SD (fL)	**44.5** ± 10.0	34.5 - 54.5	**44.5** ± 10.0	34.5 - 54.5	**45.5** ± 10.0	35.5 - 55.5
RDW-CV (%)	**15.0** ± 5.0	10.0 - 20.0	**15.5** ± 5.0	10.5 - 20.5	**14.0** ± 5.0	9.0 - 19.0
PLT (10^9/L)	**51** ± 20	31 - 71	**202** ± 40	162 - 242	**362** ± 65	297 - 427
MPV (fL)	**8.9** ± 3.0	5.9 - 11.9	**9.7** ± 3.0	6.7 - 12.7	**10.1** ± 3.0	7.1 - 13.1
NEUT # (10^9/L)	**2.46** ± 0.60	1.86 - 3.06	**3.92** ± 1.00	2.92 - 4.92	**11.75** ± 2.29	9.46 - 14.04
LYMPH # (10^9/L)	**0.73** ± 0.35	0.38 - 1.08	**2.18** ± 0.73	1.45 - 2.91	**4.11** ± 1.91	2.20 - 6.02
MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.25** ± 0.25	0.00 - 0.50	**0.48** ± 0.48	0.00 - 0.96
EO # (10^9/L)	**0.56** ± 0.27	0.29 - 0.83	**0.91** ± 0.51	0.40 - 1.42	**2.77** ± 1.34	1.43 - 4.11
BASO # (10^9/L)	**3.08** ± 1.20	1.88 - 4.28	**5.44** ± 3.00	2.44 - 8.44	**15.28** ± 5.00	10.28 - 20.28
NEUT%	**64.0** ± 12.0	52.0 - 76.0	**54.0** ± 12.0	42.0 - 66.0	**61.5** ± 12.0	49.5 - 73.5
LYMPH%	**19.0** ± 9.0	10.0 - 28.0	**30.0** ± 10.0	20.0 - 40.0	**21.5** ± 10.0	11.5 - 31.5
MONO%	**2.5** ± 2.5	0.0 - 5.0	**3.5** ± 3.5	0.0 - 7.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**14.5** ± 7.0	7.5 - 21.5	**12.5** ± 7.0	5.5 - 19.5	**14.5** ± 7.0	7.5 - 21.5
BASO%	**80.0** ± 20.0	60.0 - 100.0	**75.0** ± 25.0	50.0 - 100.0	**80.0** ± 20.0	60.0 - 100.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**41** ± 35	6 - 76	**175** ± 65	110 - 240	**352** ± 85	267 - 437
PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.39** ± 0.11	0.28 - 0.50
PDW (fL)	**11.0** ± 5.0	6.0 - 16.0	**12.0** ± 5.0	7.0 - 17.0	**12.0** ± 5.0	7.0 - 17.0
P-LCR (%)	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0
IG # (10^9/L)	**0.58** ± 0.50	0.08 - 1.08	**0.98** ± 0.98	0.00 - 1.96	**3.15** ± 2.00	1.15 - 5.15
IG %	**15.0** ± 12.0	3.0 - 27.0	**13.5** ± 13.5	0.0 - 27.0	**16.5** ± 10.0	6.5 - 26.5
DIFF-X (ch)	**139.0** ± 30.0	109.0 - 169.0	**142.0** ± 30.0	112.0 - 172.0	**143.0** ± 30.0	113.0 - 173.0
DIFF-Y (ch)	**56.0** ± 30.0	26.0 - 86.0	**56.0** ± 30.0	26.0 - 86.0	**50.0** ± 30.0	20.0 - 80.0
BASO-X (ch)	**109.0** ± 30.0	79.0 - 139.0	**106.0** ± 30.0	76.0 - 136.0	**109.0** ± 30.0	79.0 - 139.0
BASO-Y (ch)	**139.0** ± 40.0	99.0 - 179.0	**136.0** ± 40.0	96.0 - 176.0	**138.0** ± 40.0	98.0 - 178.0
RBC-O (10^{12}/L)	**2.46** ± 0.30	2.16 - 2.76	**4.65** ± 0.50	4.15 - 5.15	**5.84** ± 0.60	5.24 - 6.44
RBC-X (ch)	**22.0** ± 15.0	7.0 - 37.0	**24.0** ± 15.0	9.0 - 39.0	**24.0** ± 15.0	9.0 - 39.0
RBC-Y (ch)	**146.0** ± 35.0	111.0 - 181.0	**162.0** ± 35.0	127.0 - 197.0	**170.0** ± 35.0	135.0 - 205.0

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT **23050801, 23050802, 23050803**

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

		LOW LOT 23050801		NORMAL LOT 23050802		HIGH LOT 23050803	
Sysmex XN Series	Parameters	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range
	WBC (10^9/L)	**3.85** ± 1.20	2.65 - 5.05	**7.55** ± 1.80	5.75 - 9.35	**20.75** ± 3.00	17.75 - 23.75
	WBC-D (10^9/L)	**3.75** ± 1.20	2.55 - 4.95	**7.45** ± 1.80	5.65 - 9.25	**20.20** ± 3.00	17.20 - 23.20
	RBC (10^{12}/L)	**2.27** ± 0.15	2.12 - 2.42	**4.65** ± 0.24	4.41 - 4.89	**5.80** ± 0.30	5.50 - 6.10
	HGB (g/dL)	**6.0** ± 0.4	5.6 - 6.4	**13.6** ± 0.6	13.0 - 14.2	**18.0** ± 0.7	17.3 - 18.7
	HCT (%)	**17.8** ± 2.0	15.8 - 19.8	**40.5** ± 2.5	38.0 - 43.0	**53.9** ± 3.0	50.9 - 56.9
	MCV (fL)	**78.5** ± 5.0	73.5 - 83.5	**87.0** ± 5.0	82.0 - 92.0	**93.0** ± 5.0	88.0 - 98.0
	MCH (pg)	**26.4** ± 2.5	23.9 - 28.9	**29.2** ± 2.5	26.7 - 31.7	**31.0** ± 2.5	28.5 - 33.5
	MCHC (g/dL)	**33.7** ± 3.0	30.7 - 36.7	**33.6** ± 3.0	30.6 - 36.6	**33.4** ± 3.0	30.4 - 36.4
	RDW-SD (fL)	**45.0** ± 10.0	35.0 - 55.0	**47.0** ± 10.0	37.0 - 57.0	**47.5** ± 10.0	37.5 - 57.5
	RDW-CV (%)	**16.5** ± 5.0	11.5 - 21.5	**15.5** ± 5.0	10.5 - 20.5	**15.0** ± 5.0	10.0 - 20.0
	PLT (10^9/L)	**42** ± 20	22 - 62	**197** ± 40	157 - 237	**410** ± 65	345 - 475
	MPV (fL)	**10.2** ± 3.0	7.2 - 13.2	**10.1** ± 3.0	7.1 - 13.1	**9.8** ± 3.0	6.8 - 12.8
	NEUT # (10^9/L)	**2.25** ± 0.38	1.87 - 2.63	**3.78** ± 0.76	3.02 - 4.54	**11.72** ± 2.07	9.65 - 13.79
	LYMPH # (10^9/L)	**0.73** ± 0.38	0.35 - 1.11	**2.23** ± 0.76	1.47 - 2.99	**4.36** ± 2.08	2.28 - 6.44
	MONO # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.19** ± 0.19	0.00 - 0.38	**0.52** ± 0.52	0.00 - 1.04
	EO # (10^9/L)	**0.58** ± 0.27	0.31 - 0.85	**0.98** ± 0.53	0.45 - 1.51	**3.11** ± 1.45	1.66 - 4.56
	BASO # (10^9/L)	**0.19** ± 0.19	0.00 - 0.38	**0.38** ± 0.38	0.00 - 0.76	**1.04** ± 1.04	0.00 - 2.08
	NEUT%	**58.5** ± 10.0	48.5 - 68.5	**50.0** ± 10.0	40.0 - 60.0	**56.5** ± 10.0	46.5 - 66.5
	LYMPH%	**19.0** ± 10.0	9.0 - 29.0	**29.5** ± 10.0	19.5 - 39.5	**21.0** ± 10.0	11.0 - 31.0
	MONO%	**2.5** ± 2.5	0.0 - 5.0	**2.5** ± 2.5	0.0 - 5.0	**2.5** ± 2.5	0.0 - 5.0
	EO%	**15.0** ± 7.0	8.0 - 22.0	**13.0** ± 7.0	6.0 - 20.0	**15.0** ± 7.0	8.0 - 22.0
	BASO%	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0
	NRBC# (10^9/L)	**0.40** ± 19.60	0.00 - 20.00	**0.40** ± 19.60	0.00 - 20.00	**0.40** ± 19.60	0.00 - 20.00
	NRBC% (/100 WBC)	**2.0** ± 98.0	0.0 - 100.0	**2.0** ± 98.0	0.0 - 100.0	**2.0** ± 98.0	0.0 - 100.0
	The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
	PLT-O (10^9/L)	**52** ± 38	14 - 90	**225** ± 65	160 - 290	**460** ± 85	375 - 545
	PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.40** ± 0.11	0.29 - 0.51
	PDW (fL)	**11.5** ± 5.0	6.5 - 16.5	**11.5** ± 5.0	6.5 - 16.5	**11.5** ± 5.0	6.5 - 16.5
	P-LCR (%)	**27.5** ± 20.0	7.5 - 47.5	**26.5** ± 20.0	6.5 - 46.5	**24.0** ± 20.0	4.0 - 44.0
	IPF (%)	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0	**20.0** ± 20.0	0.0 - 40.0
	IG # (10^9/L)	**0.56** ± 0.30	0.26 - 0.86	**0.94** ± 0.40	0.54 - 1.34	**2.91** ± 1.60	1.31 - 4.51
	IG%	**14.5** ± 5.0	9.5 - 19.5	**12.5** ± 5.0	7.5 - 17.5	**14.0** ± 5.0	9.0 - 19.0
	RBC-O (10^{12}/L)	**2.28** ± 0.30	1.98 - 2.58	**4.60** ± 0.50	4.10 - 5.10	**5.75** ± 0.60	5.15 - 6.35

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT **23050801, 23050802, 23050803**

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

Sysmex XN-L Series

Parameters	LOW LOT 23050801 Assay Mean ± Limit	LOW LOT 23050801 Expected Range	NORMAL LOT 23050802 Assay Mean ± Limit	NORMAL LOT 23050802 Expected Range	HIGH LOT 23050803 Assay Mean ± Limit	HIGH LOT 23050803 Expected Range
WBC-C (10^9/L)	**3.80** ± 1.20	2.60 - 5.00	**7.65** ± 2.00	5.65 - 9.65	**20.80** ± 3.20	17.60 - 24.00
WBC-D (10^9/L)	**3.60** ± 1.20	2.40 - 4.80	**7.20** ± 2.00	5.20 - 9.20	**19.85** ± 3.20	16.65 - 23.05
RBC (10^{12}/L)	**2.25** ± 0.15	2.10 - 2.40	**4.63** ± 0.24	4.39 - 4.87	**5.83** ± 0.30	5.53 - 6.13
HGB (g/dL)	**6.0** ± 0.4	5.6 - 6.4	**13.6** ± 0.6	13.0 - 14.2	**18.1** ± 0.7	17.4 - 18.8
HCT (%)	**18.0** ± 2.0	16.0 - 20.0	**40.7** ± 2.5	38.2 - 43.2	**54.2** ± 3.0	51.2 - 57.2
MCV (fL)	**80.0** ± 5.0	75.0 - 85.0	**88.0** ± 5.0	83.0 - 93.0	**93.0** ± 5.0	88.0 - 98.0
MCH (pg)	**26.7** ± 2.5	24.2 - 29.2	**29.4** ± 2.5	26.9 - 31.9	**31.0** ± 2.5	28.5 - 33.5
MCHC (g/dL)	**33.3** ± 3.0	30.3 - 36.3	**33.4** ± 3.0	30.4 - 36.4	**33.4** ± 3.0	30.4 - 36.4
RDW-SD (fL)	**47.0** ± 10.0	37.0 - 57.0	**48.5** ± 10.0	38.5 - 58.5	**48.5** ± 10.0	38.5 - 58.5
RDW-CV (%)	**16.5** ± 5.0	11.5 - 21.5	**15.5** ± 5.0	10.5 - 20.5	**14.0** ± 5.0	9.0 - 19.0
PLT (10^9/L)	**46** ± 20	26 - 66	**198** ± 40	158 - 238	**410** ± 65	345 - 475
MPV (fL)	**10.3** ± 3.0	7.3 - 13.3	**10.4** ± 3.0	7.4 - 13.4	**10.2** ± 3.0	7.2 - 13.2
NEUT # (10^9/L)	**1.94** ± 0.36	1.58 - 2.30	**3.28** ± 0.72	2.56 - 4.00	**10.42** ± 1.98	8.44 - 12.40
LYMPH # (10^9/L)	**0.72** ± 0.36	0.36 - 1.08	**2.27** ± 0.72	1.55 - 2.99	**4.57** ± 1.99	2.58 - 6.56
MONO # (10^9/L)	**0.09** ± 0.09	0.00 - 0.18	**0.18** ± 0.18	0.00 - 0.36	**0.50** ± 0.50	0.00 - 1.00
EO # (10^9/L)	**0.54** ± 0.32	0.22 - 0.86	**0.94** ± 0.65	0.29 - 1.59	**2.78** ± 1.39	1.39 - 4.17
BASO # (10^9/L)	**0.31** ± 0.31	0.00 - 0.62	**0.54** ± 0.54	0.00 - 1.08	**1.59** ± 1.59	0.00 - 3.18
NEUT%	**54.0** ± 10.0	44.0 - 64.0	**45.5** ± 10.0	35.5 - 55.5	**52.5** ± 10.0	42.5 - 62.5
LYMPH%	**20.0** ± 10.0	10.0 - 30.0	**31.5** ± 10.0	21.5 - 41.5	**23.0** ± 10.0	13.0 - 33.0
MONO%	**2.5** ± 2.5	0.0 - 5.0	**2.5** ± 2.5	0.0 - 5.0	**2.5** ± 2.5	0.0 - 5.0
EO%	**15.0** ± 9.0	6.0 - 24.0	**13.0** ± 9.0	4.0 - 22.0	**14.0** ± 7.0	7.0 - 21.0
BASO%	**8.5** ± 8.5	0.0 - 17.0	**7.5** ± 7.5	0.0 - 15.0	**8.0** ± 8.0	0.0 - 16.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**52** ± 38	14 - 90	**208** ± 65	143 - 273	**440** ± 85	355 - 525
PCT (%)	**0.05** ± 0.03	0.02 - 0.08	**0.20** ± 0.07	0.13 - 0.27	**0.42** ± 0.11	0.31 - 0.53
PDW (fL)	**11.5** ± 5.0	6.5 - 16.5	**12.5** ± 5.0	7.5 - 17.5	**12.5** ± 5.0	7.5 - 17.5
P-LCR (%)	**25.0** ± 20.0	5.0 - 45.0	**27.5** ± 20.0	7.5 - 47.5	**25.0** ± 20.0	5.0 - 45.0
IG # (10^9/L)	**0.52** ± 0.30	0.22 - 0.82	**0.86** ± 0.40	0.46 - 1.26	**2.78** ± 1.60	1.18 - 4.38
IG%	**14.5** ± 5.0	9.5 - 19.5	**12.0** ± 5.0	7.0 - 17.0	**14.0** ± 5.0	9.0 - 19.0
RBC-O (10^{12}/L)	**2.22** ± 0.30	1.92 - 2.52	**4.48** ± 0.50	3.98 - 4.98	**5.70** ± 0.60	5.10 - 6.30

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

CBC-X

HEMATOLOGY CONTROLS

CONTROL

ASSAY VALUES AND EXPECTED RANGES

LOT 23050801, 23050802, 23050803

2023-07-05

QCP DATA MONTHS: **MAY, JUNE**

MINDRAY BC-6800, BC-6600 QC Mode

Parameters	LOW LOT 23050801		NORMAL LOT 23050802		HIGH LOT 23050803	
	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range	Assay Mean ± Limit	Expected Range
WBC (10^9/L)	**3.85** ± 0.50	3.35 - 4.35	**7.30** ± 1.00	6.30 - 8.30	**20.50** ± 2.50	18.00 - 23.00
Neu # (10^9/L)	**2.56** ± 0.38	2.18 - 2.94	**4.23** ± 0.58	3.65 - 4.81	**13.02** ± 1.64	11.38 - 14.66
Lym # (10^9/L)	**0.69** ± 0.31	0.38 - 1.00	**2.01** ± 0.51	1.50 - 2.52	**3.90** ± 1.44	2.46 - 5.34
Mon # (10^9/L)	**0.10** ± 0.10	0.00 - 0.20	**0.26** ± 0.26	0.00 - 0.52	**0.62** ± 0.62	0.00 - 1.24
Eos # (10^9/L)	**0.44** ± 0.38	0.06 - 0.82	**0.69** ± 0.51	0.18 - 1.20	**2.67** ± 1.85	0.82 - 4.52
Bas # (10^9/L)	**0.06** ± 0.20	-0.14 - 0.26	**0.11** ± 0.37	-0.26 - 0.48	**0.31** ± 1.03	-0.72 - 1.34
Neu %	**66.5** ± 10.0	56.5 - 76.5	**58.0** ± 8.0	50.0 - 66.0	**63.5** ± 8.0	55.5 - 71.5
Lym %	**18.0** ± 8.0	10.0 - 26.0	**27.5** ± 7.0	20.5 - 34.5	**19.0** ± 7.0	12.0 - 26.0
Mon %	**2.5** ± 2.5	0.0 - 5.0	**3.5** ± 3.5	0.0 - 7.0	**3.0** ± 3.0	0.0 - 6.0
Eos %	**11.5** ± 10.0	1.5 - 21.5	**9.5** ± 7.0	2.5 - 16.5	**13.0** ± 9.0	4.0 - 22.0
Bas %	**1.5** ± 5.0	-3.5 - 6.5	**1.5** ± 5.0	-3.5 - 6.5	**1.5** ± 5.0	-3.5 - 6.5
RBC (10^{12}/L)	**2.31** ± 0.18	2.13 - 2.49	**4.65** ± 0.24	4.41 - 4.89	**5.80** ± 0.30	5.50 - 6.10
HGB (g/dL)	**6.1** ± 0.4	5.7 - 6.5	**13.6** ± 0.6	13.0 - 14.2	**18.0** ± 0.8	17.2 - 18.8
HCT (%)	**19.4** ± 2.0	17.4 - 21.4	**43.5** ± 2.5	41.0 - 46.0	**57.7** ± 3.0	54.7 - 60.7
MCV (fL)	**84.0** ± 5.0	79.0 - 89.0	**93.5** ± 5.0	88.5 - 98.5	**99.5** ± 5.0	94.5 - 104.5
MCH (pg)	**26.4** ± 2.5	23.9 - 28.9	**29.2** ± 2.5	26.7 - 31.7	**31.0** ± 2.5	28.5 - 33.5
MCHC (g/dL)	**31.4** ± 3.0	28.4 - 34.4	**31.3** ± 3.0	28.3 - 34.3	**31.2** ± 3.0	28.2 - 34.2
RDW-CV (%)	**16.5** ± 3.0	13.5 - 19.5	**15.5** ± 3.0	12.5 - 18.5	**15.0** ± 3.0	12.0 - 18.0
RDW-SD (fL)	**47.5** ± 6.0	41.5 - 53.5	**50.0** ± 6.0	44.0 - 56.0	**50.0** ± 8.0	42.0 - 58.0
PLT (10^9/L)	**46** ± 20	26 - 66	**212** ± 40	172 - 252	**425** ± 60	365 - 485
MPV (fL)	**9.7** ± 3.0	6.7 - 12.7	**10.4** ± 3.0	7.4 - 13.4	**10.6** ± 3.0	7.6 - 13.6
PDW	**16.0** ± 3.0	13.0 - 19.0	**16.5** ± 3.0	13.5 - 19.5	**16.5** ± 3.0	13.5 - 19.5
PCT (%)	**0.050** ± 0.050	0.000 - 0.100	**0.220** ± 0.100	0.120 - 0.320	**0.451** ± 0.200	0.251 - 0.651
P-LCR (%)	**26.5** ± 10.0	16.5 - 36.5	**30.5** ± 10.0	20.5 - 40.5	**31.0** ± 10.0	21.0 - 41.0
P-LCC (10^9/L)	**12** ± 8	4 - 20	**65** ± 24	41 - 89	**130** ± 50	80 - 180
IMG # (10^9/L)	**0.19** ± 0.19	0.00 - 0.38	**0.37** ± 0.37	0.00 - 0.74	**1.03** ± 1.03	0.00 - 2.06
IMG%	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0
IPF (%)	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0	**5.0** ± 5.0	0.0 - 10.0
The parameters with assay values listed below are provided to allow for quality control testing of your instrument only. These parameters are defined by the FDA as "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES".						
PLT-O (10^9/L)	**39** ± 20	19 - 59	**173** ± 40	133 - 213	**350** ± 60	290 - 410

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

AS148-008 Rev. 03/23

IS148-009 Rev. 01/21

R&D SYSTEMS
a biotechne brand

CBC-X

HEMATOLOGY CONTROLS

CONTROL

INTENDED USE

CBC-X is a control designed to monitor values on Sysmex® hematology analyzers. Please refer to the assay table for specific instrument models.

SUMMARY AND PRINCIPLE

It is an established laboratory practice to use a stable control to monitor the performance of diagnostic tests. This control is composed of stable materials that provide a means of monitoring the performance of hematology blood cell counters.

⚠

CBC-X is intended for ***in vitro* diagnostic use** only by trained personnel.

POTENTIAL BIOHAZARDOUS MATERIAL For *in vitro* diagnostic use. Each human donor/unit used in the preparation of this product has been tested, and yielded non-reactive / negative results for all conditions referenced in 21 CFR 610.40 (a) (b), as required by the FDA. Testing was conducted using FDA-licensed tests. Additional details can be found at: http://www.mdheme.com/TechnicalInformation.aspx.
No test method can offer complete assurance that infectious agents are absent; therefore this material should be handled as potentially infectious. When handling or disposing of vials follow precautions for patient specimens as specified in the OSHA Bloodborne Pathogen Rule (29 CFR Part 1910, 1030) or other equivalent biosafety procedures.

Store CBC-X upright at 2° - 8° C (35° - 46° F) when not in use. **Protect tubes from overheating and freezing**. Unopened tubes are stable through the expiration date. Opened product is stable for 15 days or 15 pierces, whichever comes first, provided they are handled properly.

INDICATIONS OF DETERIORATION

After mixing, product should be similar in appearance to fresh whole blood. In unmixed tubes, the supernatant may appear cloudy and reddish; this is normal and does not indicate deterioration. Other discoloration, very dark red supernatant or unacceptable results may indicate deterioration. **Do not use the product if deterioration is suspected.**

1. Remove tubes from the refrigerator and allow to warm to room temperature (15° - 30° C or 59° - 86° F) for 15 minutes before mixing.
2. To mix, hold a tube horizontally between the palms of the hands. **Do not pre-mix on a mechanical mixer.**
   a) Roll the tube back and forth for 20 - 30 seconds; occasionally invert the tube. Mix vigorously, but do not shake.
   b) Continue to mix in this manner until the red cells are completely suspended. Tubes stored for a long time may require extra mixing.
   c) Gently invert the tube 8 - 10 times immediately before sampling.
3. Analyze the sample as instructed in the Quality Control section of the Operator's Manual for your instrument. **QC material must be run in the QXN mode** on the XN-L models.
4. After sampling:
   a) If tube has been opened for sampling, clean residual material from the cap and tube rim with a lint-free tissue. Replace the cap tightly.
   b) Return tubes to refrigerator within 30 minutes of use.

EXPECTED RESULTS

Verify that the lot number on the tube matches the lot number on the table of assay values. Assay values are determined on well-maintained, properly calibrated instruments using the instrument manufacturer's recommended reagents. Reagent differences, maintenance, operating technique, and calibration may contribute to inter-laboratory variation.

PERFORMANCE CHARACTERISTICS

Assigned values are presented as a Mean and Range. The Mean is derived from replicate testing on instruments operated and maintained according to the manufacturer's instructions. The Range is an estimate of variation between laboratories and also takes into account inherent imprecision of the method and expected biological variability of the control material.

Assay values on a new lot of control should be confirmed before the new lot is put into routine use. Test the new lot when the instrument is in good working order and quality control results on the old lot are acceptable. The laboratory's recovered mean should be within the assay range.

For greater control sensitivity each laboratory should establish its own mean and acceptable range and periodically reevaluate the mean. The laboratory range may include values outside of the assay range. The user may establish assay values not listed on the Assay Sheet, if the control is suitable for the method.

LIMITATIONS

The performance of this product is assured only if it is properly stored and used as described in this insert. Incomplete mixing of a tube prior to use invalidates both the sample withdrawn and any remaining material in the tube.

TECHNICAL ASSISTANCE AND CUSTOMER SERVICE

For assistance in resolving control recovery problems, please call Technical Service at (800) 523-3395. For additional information on R&D Systems, Inc. hematology controls and calibrators, or to place an order, call Customer Service at (800) 428-4246.

QUALITY CONTROL PROGRAM

For information on CBC-Monitor, our Inter-Laboratory Quality Control Program, call (800) 523-3395 ext. 4435.

R&D Systems, Inc.
614 McKinley Place NE
Minneapolis, MN USA 55413

IS148-009 Rev. 01/21

EC REP **Bio-techne™**
19 Rue Louis Delourmel
35230 Noyal Châtillon / Seiche
France

IVD

CE

Rx Only