

I Metals**PRODUCTS****SPC DATA**

**Quarterly SPC Data Package
Thin Films - Metals
Honeywell Electronic Materials, Spokane
April 1, 2009 to June 30, 2009**

Distributed July 14, 2009

Included in this data package are the histograms and X-Charts for the characteristics summarized on pages 2 through 6. Specification limits used in this package are based on Honeywell internal criteria. They take into consideration our process capabilities and reflect the general consensus of customer requirements.

Honeywell is committed to continuous improvement and these C_{pk} values provide a base line for tracking process improvements from quarter to quarter. The format of the summary C_p and C_{pk} indices therefore includes the following:

$C_p = C_p$ for the current quarter

$C_{pk} Q_n = C_{pk}$ for the current quarter

$C_{pk} Q_{n-1} = C_{pk}$ for the last quarter

$C_{pk} Q_{n-2} = C_{pk}$ for the quarter before last

Following the characteristics summary is a compilation of the C_{pk} trends and commentary regarding any corrective actions, process improvements and/or explanations as appropriate.

Honeywell produces a broad spectrum of alloys and target configurations. This standardized data package is constructed to give an analytical overview of Al, Ti, W/Ti and Cu alloys as well as other frequently requested output characteristics such as grain size, orientation & W/Ti density.

The contents of this package will stay fairly consistent in order to have continuity in the C_{pk} comparisons. Product characteristics may on occasion be added or deleted from the suite when deemed necessary based on a change in product offerings and mix (alloys/configurations). The format may be altered as needed for clarity.

Regards,

Dale Luders
Targets Quality Engineering
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SECTION 1 - ALUMINUM

Aluminum Trace Elemental Impurities

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
59.5 Al 0.5 Cu	Ca	NA	DL	DL	DL
	Cr	NA	11.4	16.3	19.7
	Fe	NA	4.68	7.12	6.76
	K	NA	DL	DL	DL
	Li	NA	DL	DL	DL
	Na	NA	DL	DL	DL
	Ni	NA	DL	DL	DL
	Si	NA	1.94	2.54	3.76
	Zn	NA	DL	DL	DL
	Tot Metallics	NA	2.12	2.94	4.01
LC5 Al 0.5 Cu	Ca	NA	DL	DL	DL
	Cr	NA	20.4	19.5	19.7
	Fe	NA	7.01	6.69	8.10
	K	NA	DL	DL	DL
	Li	NA	DL	DL	DL
	Na	NA	DL	DL	DL
	Ni	NA	DL	59.0	DL
	Si	NA	3.3	5.65	4.32
	Zn	NA	DL	DL	DL
	Th	NA	DL	DL	DL
U	NA	DL	DL	DL	
Tot Metallics	NA	4.61	6.57	5.01	
Al	C	NA	74.3	82.0	74.1
	H	NA	13.5	10.6	14.3
	O	NA	21.3	12.4	13.2

DL = Detection Limit

SECTION 1 - ALUMINUM (continued)

Aluminum Major Constituents

Configuration	Characteristic	Cp	Cpk		
			Qn	Qn-1	Qn-2
Al/.5 Cu	% Cu	4.47	4.14	12.0	33.7
Al/1 Si	% Si*	No Activity		2.67	2.67
Al/1Si/.5 Cu	% Si*	3.76	3.67	4.10	3.73
Al/1Si/.5 Cu	% Cu*	15.0	14.9	18.5	10.3

Aluminum Average Grain Size

Configuration	Characteristic	Cp	Cpk		
			Qn	Qn-1	Qn-2
APX Al/.5 Cu	Grain Size	NA	18.7	3.81	4.51
Omega P Al/.5 Cu	Grain Size	8.66	13.5	4.41	8.47

Aluminum Orientation

Configuration	Characteristic	Cp	Cpk		
			Qn	Qn-1	Qn-2
APX Al/.5 Cu	% 200*	11.3	11.1	5.99	3.91
Omega P Al/.5 Cu	% 200	13.0	10.7	11.4	8.27

* Data covers range longer than 1 quarter to obtain sufficient data points.

SECTION 2 - TUNGSTEN-TITANIUM

Fine Microstructure Tungsten-Titanium Trace Elemental Impurities

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
49.75 W/10Ti	Cr*	NA	No Activity	4.23	4.14
	Fe*	NA		1.91	2.02
	K*	NA		4.83	4.12
	Li*	NA		12.1	14.8
	Na*	NA		9.95	9.19
	O*	NA		1.59	1.51
	Th*	NA		DL	DL
	U*	NA		1.90	2.51
	Tot Metallics*	NA		3.42	3.43

Tungsten-Titanium Major Constituent

Configuration	Characteristic	Cp	Cpk		
			Qn	Qn-1	Qn-2
W/10Ti	% Ti	No Activity		2.47	3.05

Tungsten-Titanium Density

Configuration	Characteristic	Cp	Cpl		
			Qn	Qn-1	Qn-2
Endura W/10Ti	Density	NA	No Activity	6.17	3.85

Tungsten-Titanium Average Feature Size

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
Fine Micro	Ti Phase*	NA	No Activity	4.99	6.21

* Data covers range longer than 1 quarter to obtain sufficient data points.

SECTION 3 - TITANIUM

Titanium Trace Elemental Impurities

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
49.5 Ti	C*	NA	22.2	8.91	8.65
	Ca*	NA	DL	DL	DL
	Fe*	NA	1.08	1.04	1.07
	K*	NA	DL	DL	DL
	Li*	NA	DL	DL	DL
	Na*	NA	DL	DL	DL
	O*	NA	1.73	1.91	1.80
	Tot Metallics*	NA	8.84	8.68	9.28
59 Ti	C*	NA	8.06	3.12	3.10
	Ca*	NA	DL	DL	DL
	Fe*	NA	1.57	1.37	1.37
	K*	NA	DL	DL	DL
	Li*	NA	DL	DL	DL
	Na*	NA	DL	DL	DL
	O*	NA	3.24	1.71	1.42
	Tot Metallics*	NA	4.07	3.15	3.33

DL = Detection Limit

Titanium Average Grain Size

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
Advanced Planar	Grain Size	NA	1.40	2.40	1.51

* Data covers range longer than 1 quarter to obtain sufficient data points.

SECTION 4 – COPPER

Copper Trace Elemental Impurities

Configuration	Characteristic	Cp	Cpu		
			Qn	Qn-1	Qn-2
69 Cu	C	NA	7.13	9.17	4.96
	Cr	NA	DL	DL	DL
	Fe	NA	26.2	18.5	16.9
	K	NA	DL	DL	DL
	Li	NA	DL	DL	DL
	Na	NA	DL	DL	127
	O	NA	8.65	5.36	9.21
	Tot Metallics	NA	21.9	8.64	23.8

DL = Detection Limit

COMMENTARY

SECTION 1 - ALUMINUM

Al Impurities (595 and LC5)

All parameters showed good capability with Cpu's greater than 2.0 and no OOC points.

C, H, O Results for All Aluminum

Cpu's for each of these elements remains very high with no OOC points.

Aluminum Major Constituents

Cp and Cpk for each major alloy constituent is >2.0 with no OOC points.

Aluminum Grain Size and Orientation

Cpk's remain high with all parameters above 2.0 with no OOC points.

SECTION 2 - TUNGSTEN-TITANIUM

No activity for this material during Q2-09.

SECTION 3 – TITANIUM

495 Ti continues to show Fe with capability <1.33. A corrective action was issued (EGB20080117-01) and recent data points show the variation has declined since the action plan was implemented but no further improvement in Cpk is forecasted due to sorting of this parameter to the USL.

59 Ti shows acceptable capability for all parameters.

Ti Grain Size shows a Cpk >1.33.

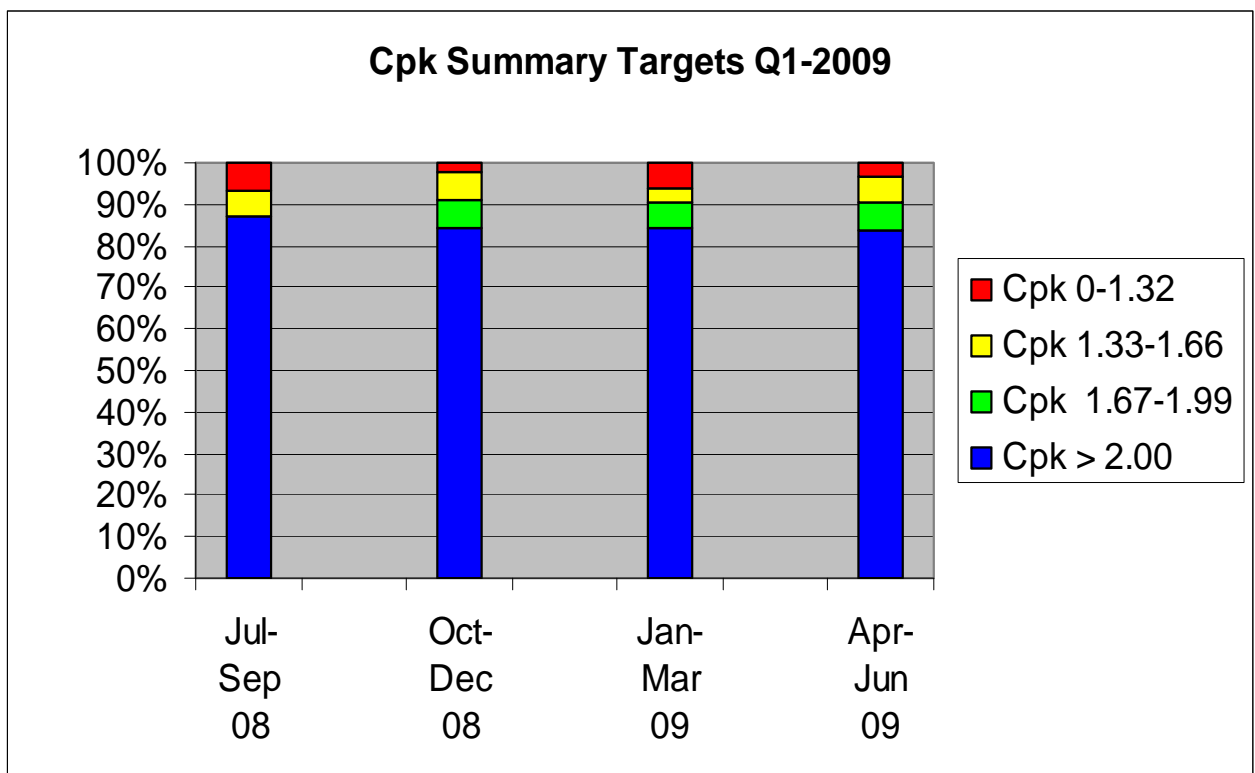
SECTION 4 – 69 COPPER

All parameters show good capability with Cpk's above 2.0 and only one OOC point.

CAPABILITY SUMMARY

For Q2 2009, the percent of Cpk's greater than 2.00 was 83.9%, Cpk's greater than 1.66 were at 90.4%, and Cpk's greater than 1.33 constituted 96.8% of parameters with detected values. The total number of parameters compiled was 57 (normally 70 parameters, but no activity for several materials this quarter).

Our goal is to achieve the highest level of capability possible for each product and process with the goal of all Cpk's above 1.67. Improvement plans are required for Cpk < 1.33 and are noted in the commentary section.



Sputter Target SPC Quarterly Report – Q2 2009

File Index as of 7/14/09

SECTION 1 - ALUMINUM

Aluminum Trace Elemental Impurities

Configuration	Characteristic	File Name (*.pdf)
59.5 Al	Ca	5N5Al_Ca
	Cr	5N5Al_Cr
	Fe	5N5Al_Fe
	K	5N5Al_K
	Li	5N5Al_Li
	Na	5N5Al_Na
	Ni	5N5Al_Ni
	Si	5N5Al_Si
	Zn	5N5Al_Zn
		Tot Metallics
LC5 Al	Ca	LC5Al_Ca
	Cr	LC5Al_Cr
	Fe	LC5Al_Fe
	K	LC5Al_K
	Li	LC5Al_Li
	Na	LC5Al_Na
	Ni	LC5Al_Ni
	Si	LC5Al_Si
	Zn	LC5Al_Zn
		Th
	U	LC5Al_U
	Tot Metallics	LC5Al_Tot
Al	C	Al_C
	H	Al_H
	O	Al_O
Al/.5 Cu	% Cu	Al.5Cu_%Cu
Al/1 Si	% Si	Al1Si_%Si
Al/1Si/.5 Cu	% Si	Al1Si.5Cu_%Si
Al/1Si/.5 Cu	% Cu	Al1Si.5Cu_%Cu
APX Al/.5 Cu	Grain Size	Al.5Cu_GS_APX
Omega P Al/.5 Cu	Grain Size	Al.5Cu_GS_OOP
APX Al/.5 Cu	% 200	Al.5Cu_Orient_APX
Omega P Al/.5 Cu	% 200	Al.5Cu_Orient_OOP

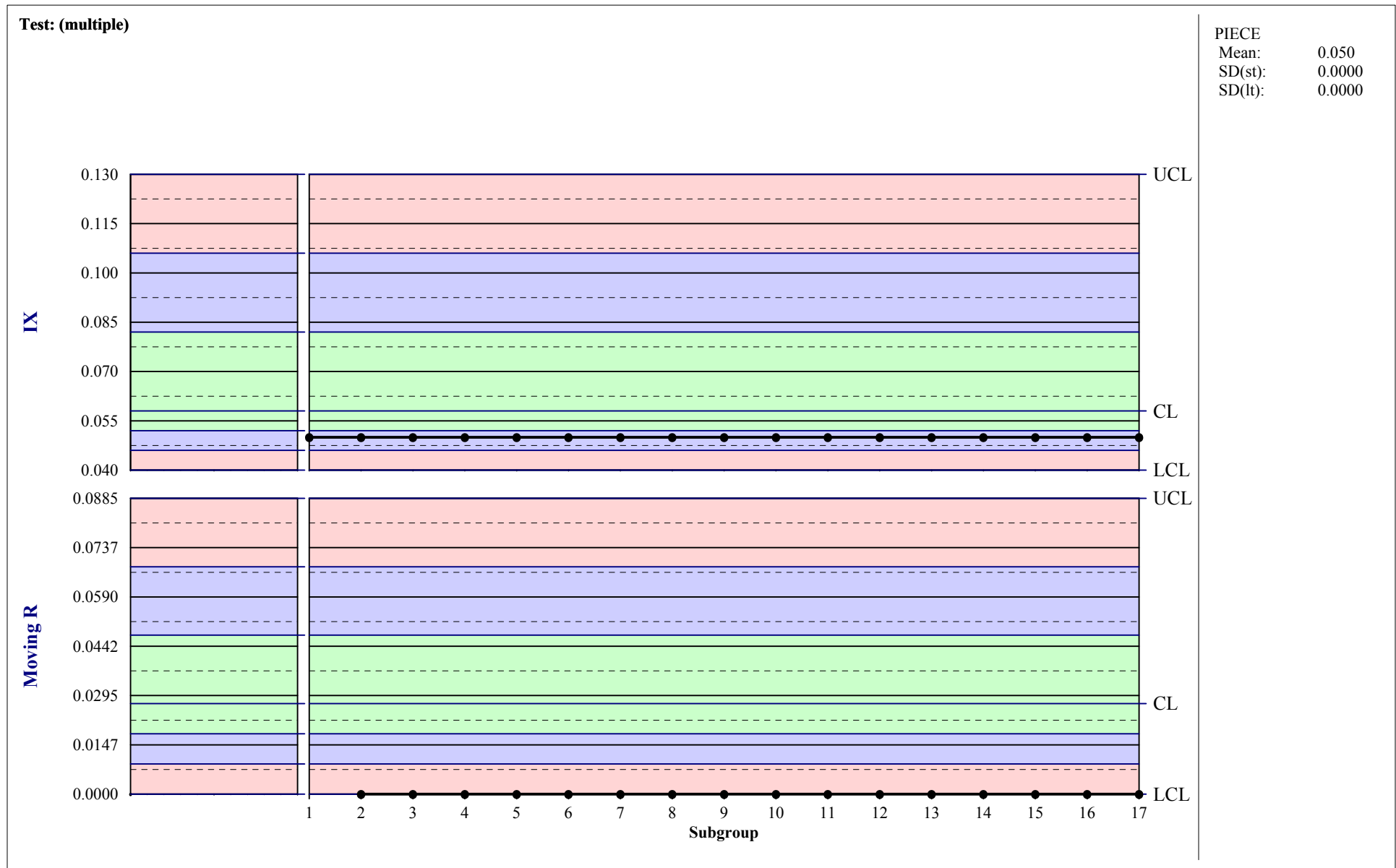
Honeywell

Spec. Limits: CCB2-01072 / alab_gdms_w_ca_m
 095161 / alab_gdms_w_ca_m
 095161 / Ca

USL: 0.200
 USL: 0.200
 USL: 0.200

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm



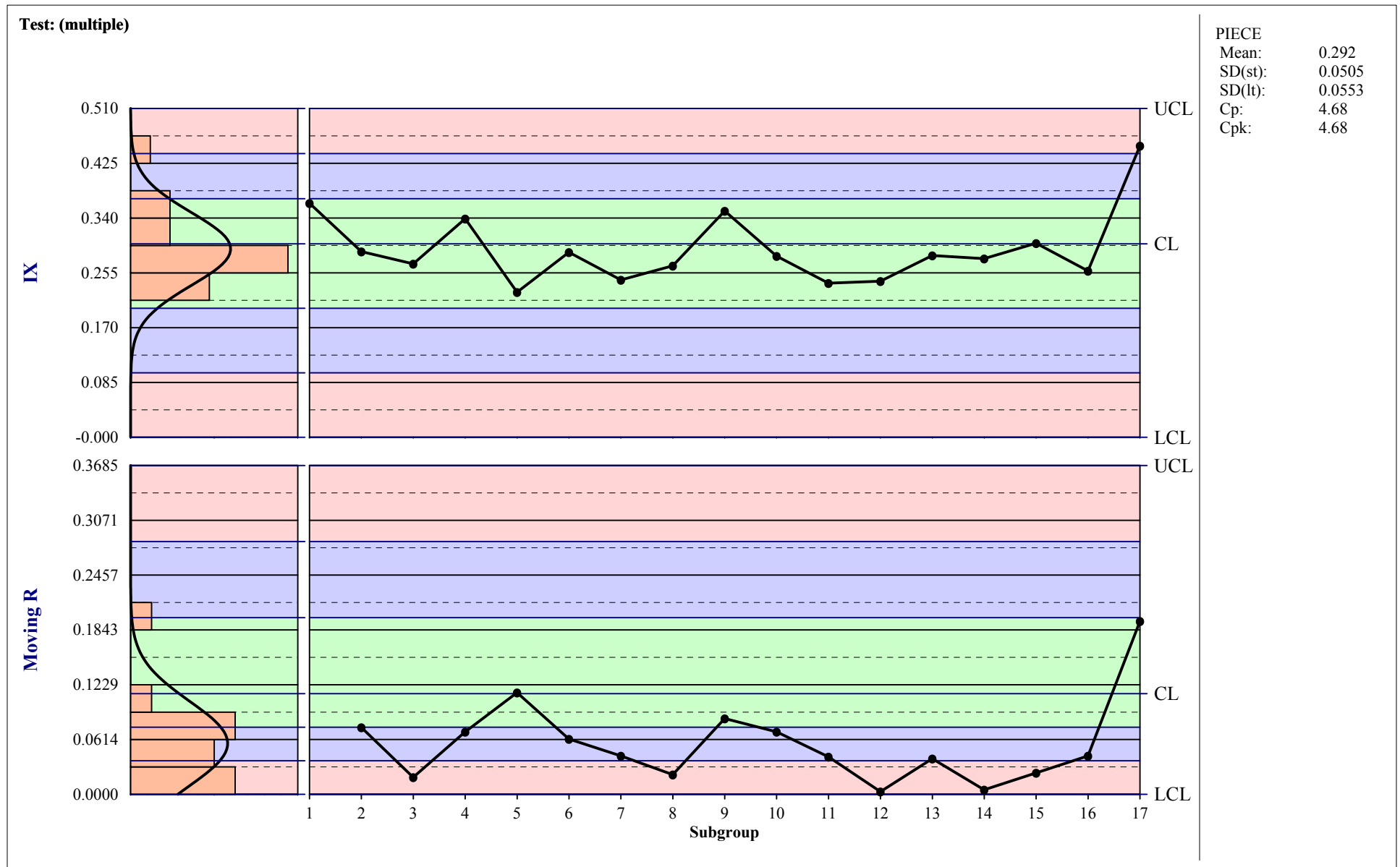
Honeywell

Spec. Limits: CCB2-01072 / alab_gdms_w_fe_m
 095161 / alab_gdms_w_fe_m
 095161 / Fe

USL: 1.000
 USL: 1.000
 USL: 1.000

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm



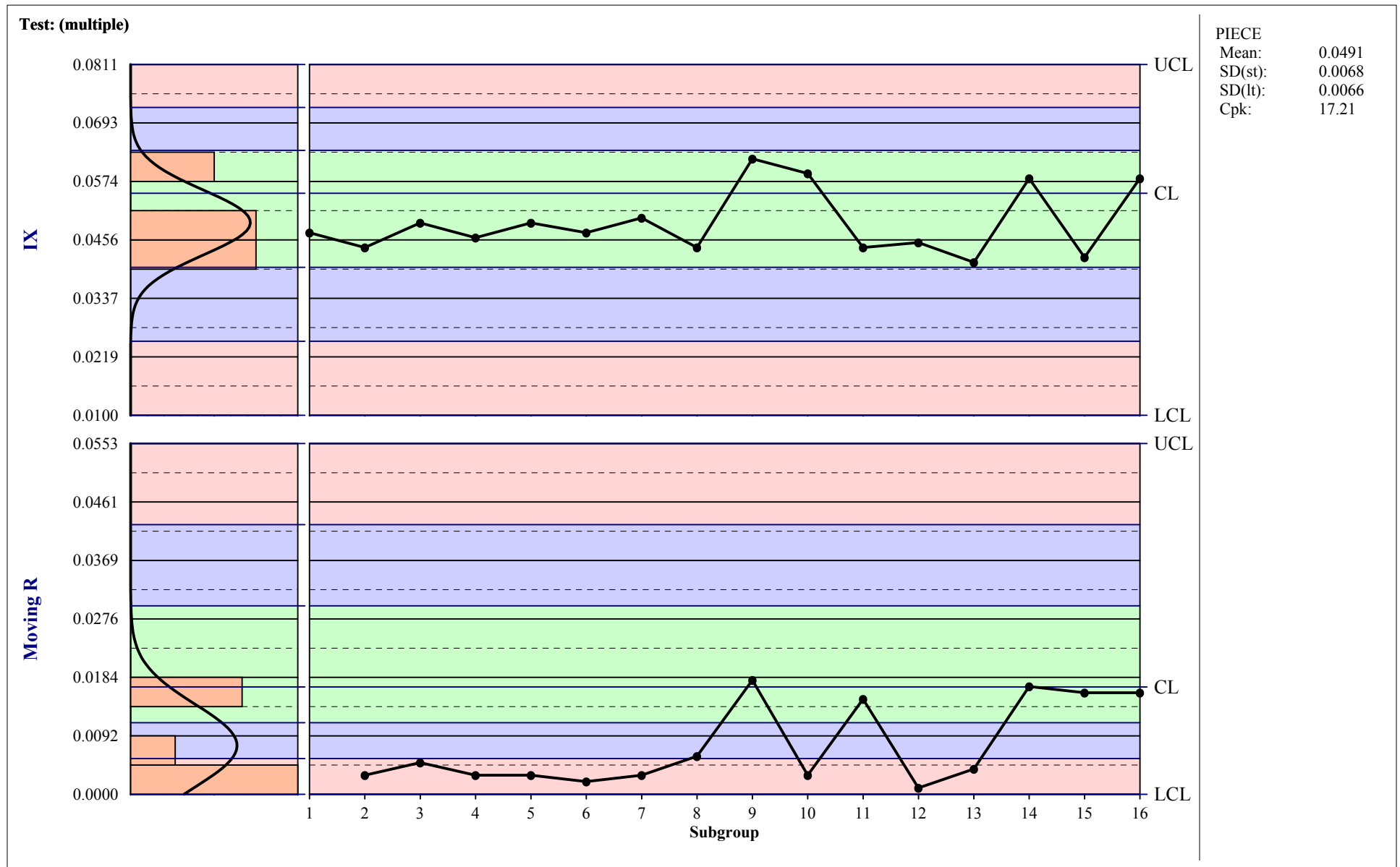
Honeywell

Spec. Limits: CCB2-01072 / alab_gdms_w_cr_m
 095161 / alab_gdms_w_cr_m
 095161 / Cr

USL: 0.4000
 USL: 0.4000
 USL: 0.4000

Part: 095161, CCB2-01072

Date Range: 04/21/09 10:29:00 am <=> 06/25/09 01:12:42 pm



Honeywell

UCL = DL

Spec. Limits: CCB2-01072 / alab_gdms_w_li_m
095161 / Li

USL: 0.0050

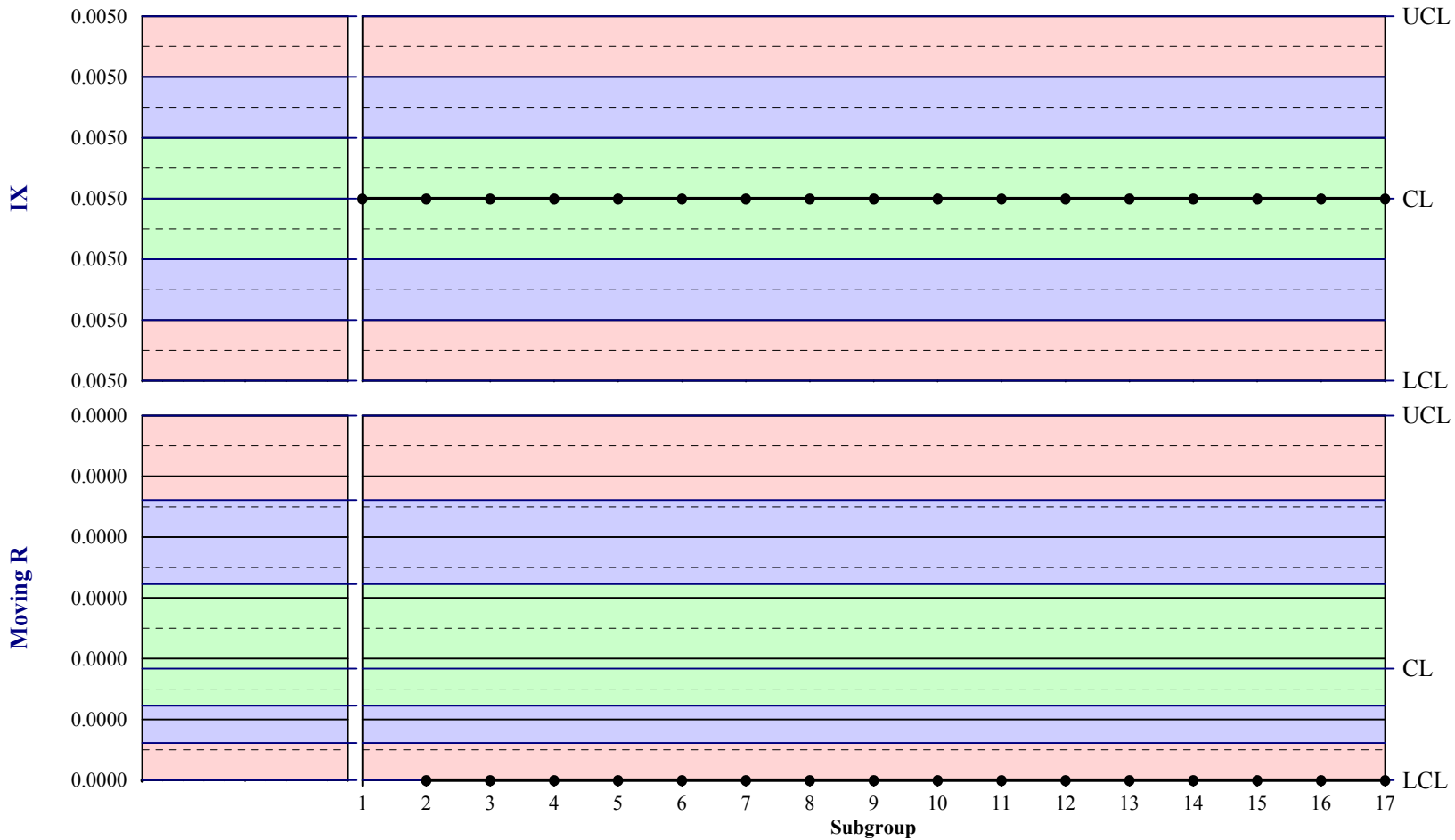
USL: 0.0050

Part: CCB2-01072, 095161

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Test: (multiple)

PIECE
Mean: 0.0050
SD(st): 0.0000
SD(lt): 0.0000



Honeywell

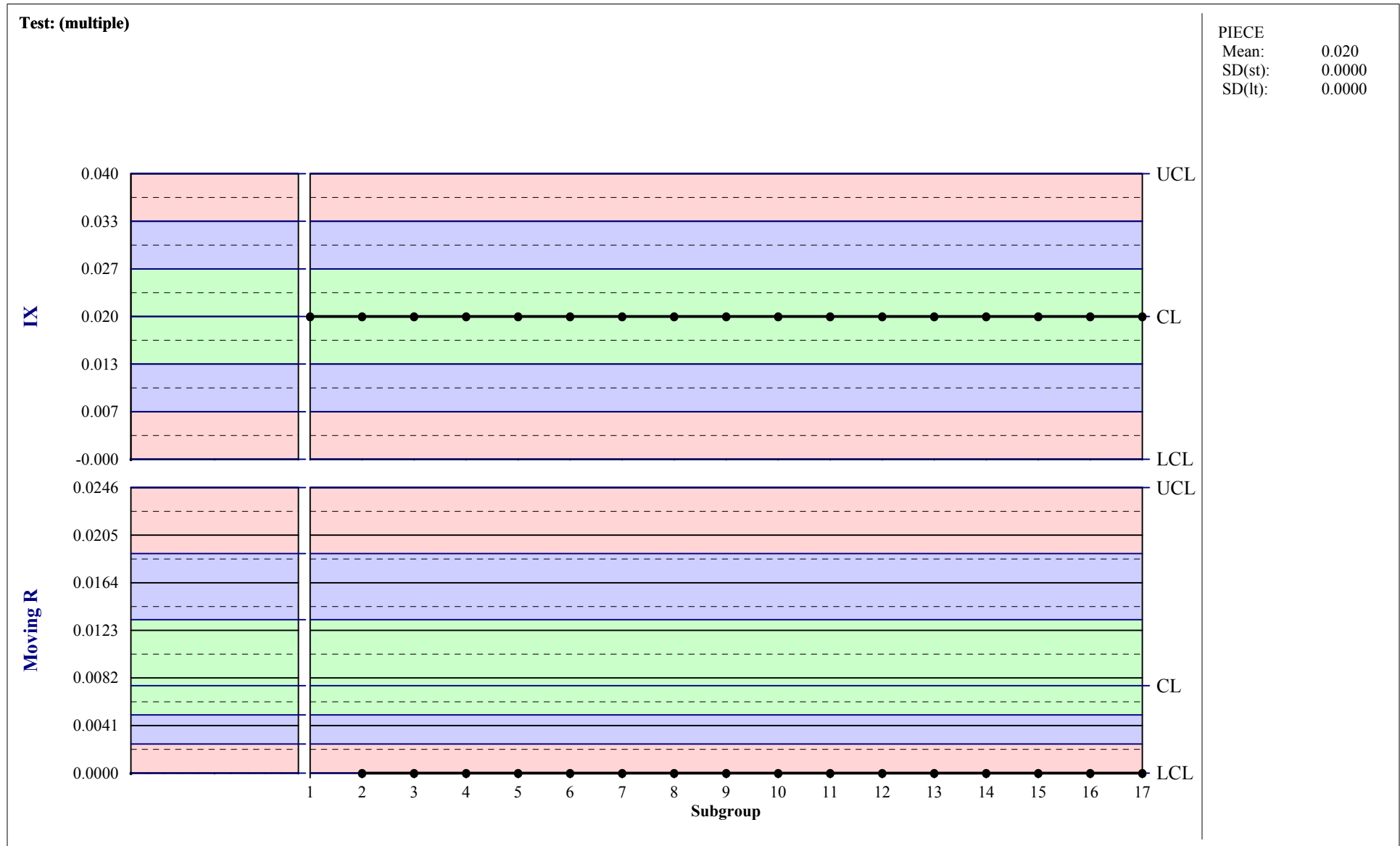
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095161 / alab_gdms_w_k_m
095161 / K

USL: 0.120
USL: 0.120
USL: 0.120

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm



Honeywell

UCL = 2X DL

Spec. Limits: CCB2-01072 / alab_gdms_w_ni_m
095161 / alab_gdms_w_ni_m
095161 / Ni

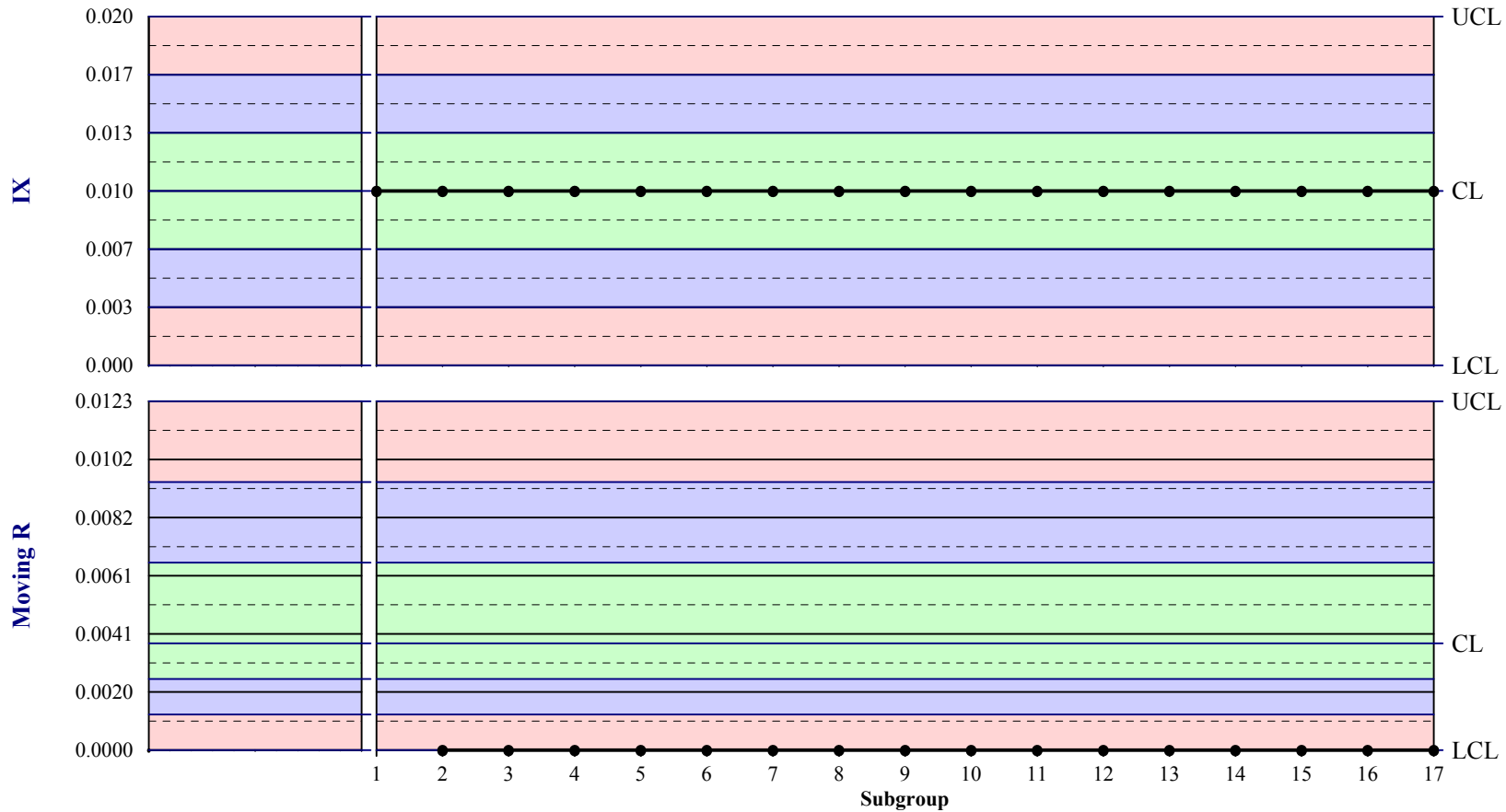
USL: 0.200
USL: 0.200
USL: 0.200

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm

Test: (multiple)

PIECE
Mean: 0.010
SD(st): 0.0000
SD(lt): 0.0000



Honeywell

UCL = 4X DL

Spec. Limits: CCB2-01072 / alab_gdms_w_na_m

USL: 0.080

095161 / alab_gdms_w_na_m

USL: 0.080

095161 / Na

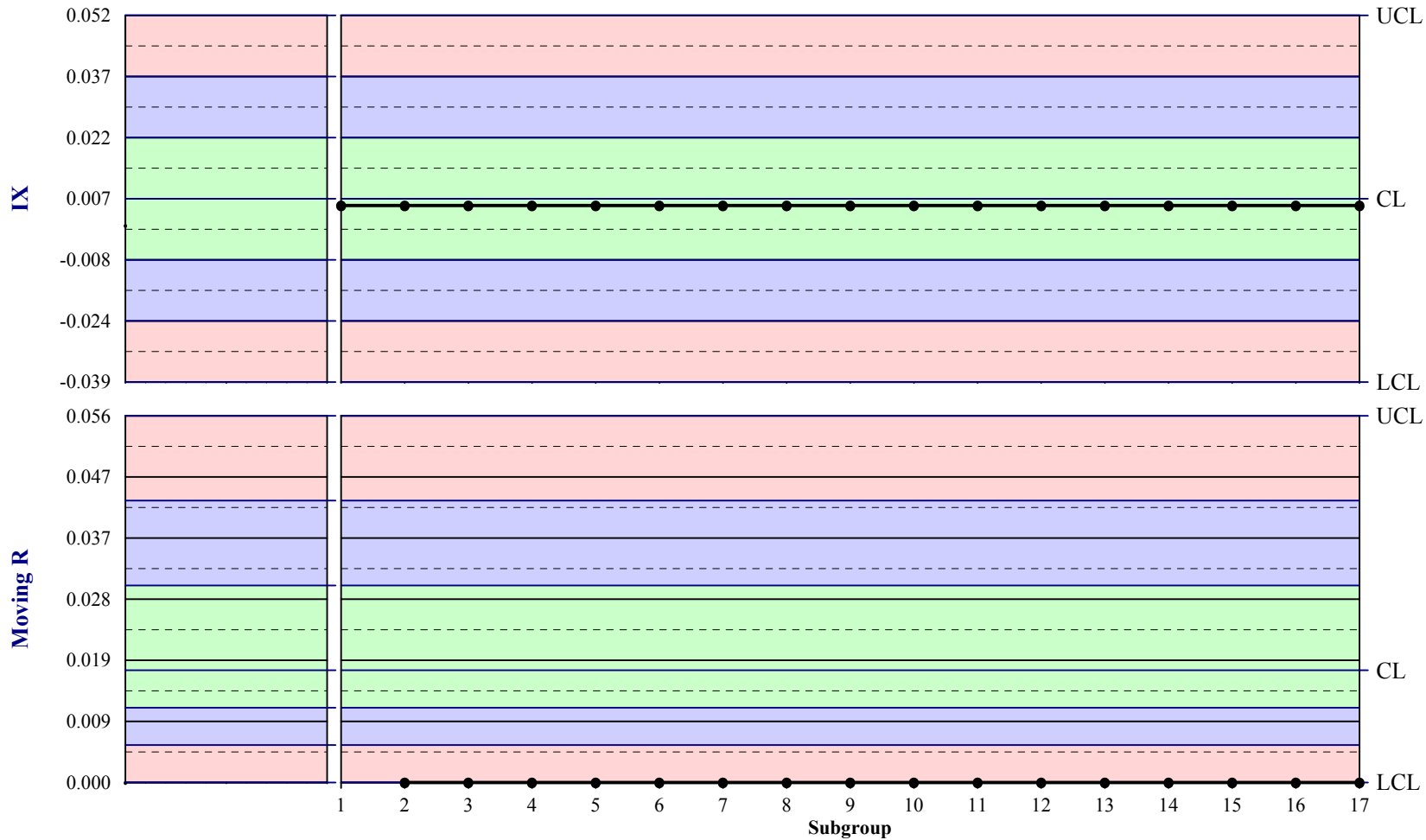
USL: 0.080

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm

Test: (multiple)

PIECE
Mean: 0.005
SD(st): 0.000
SD(lt): 0.000



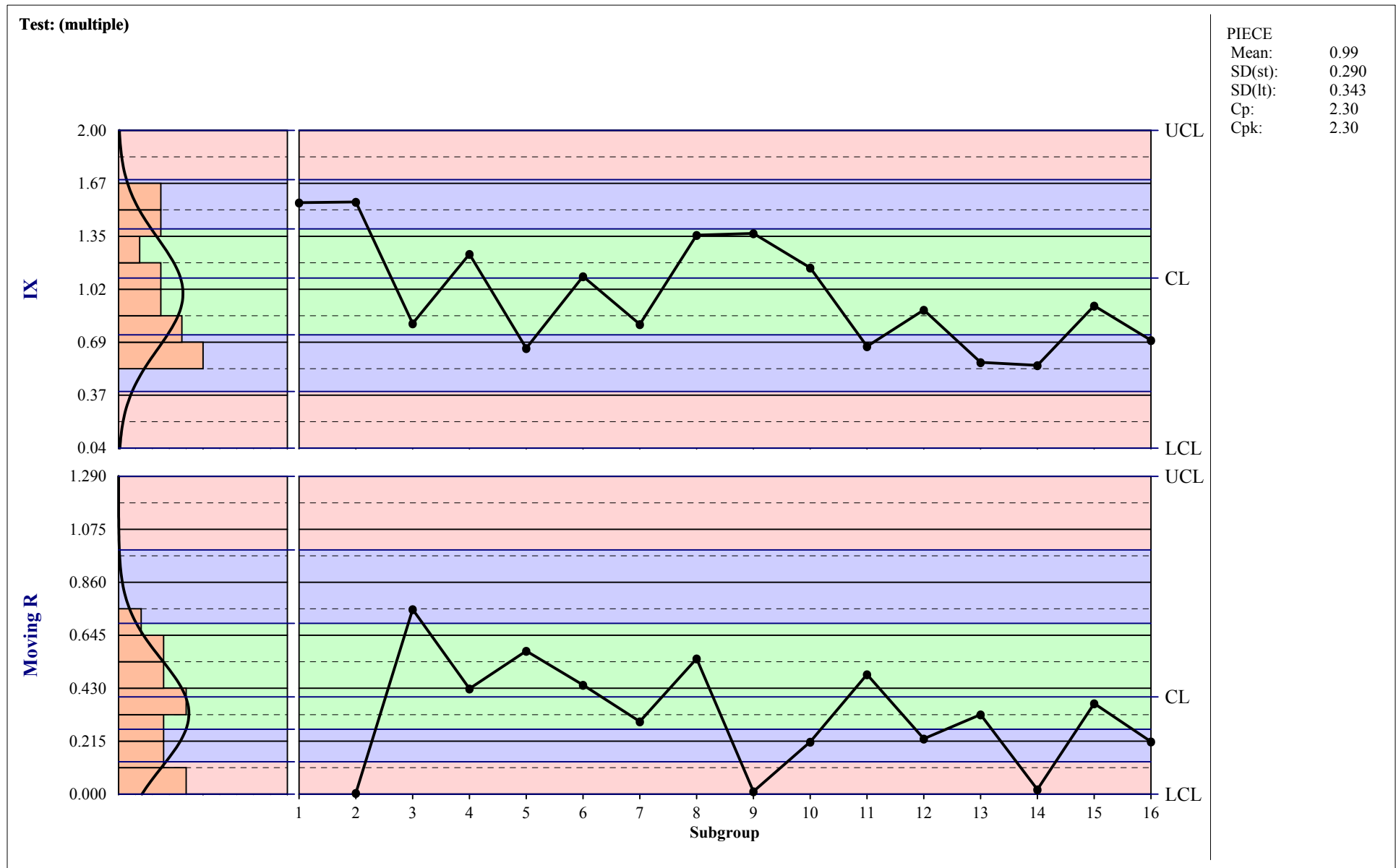
Honeywell

Spec. Limits: CCB2-01072 / alab_gdms_w_si_m
 095161 / alab_gdms_w_si_m
 095161 / Si

USL: 3.00
 USL: 3.00
 USL: 3.00

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/25/09 01:12:42 pm



Honeywell

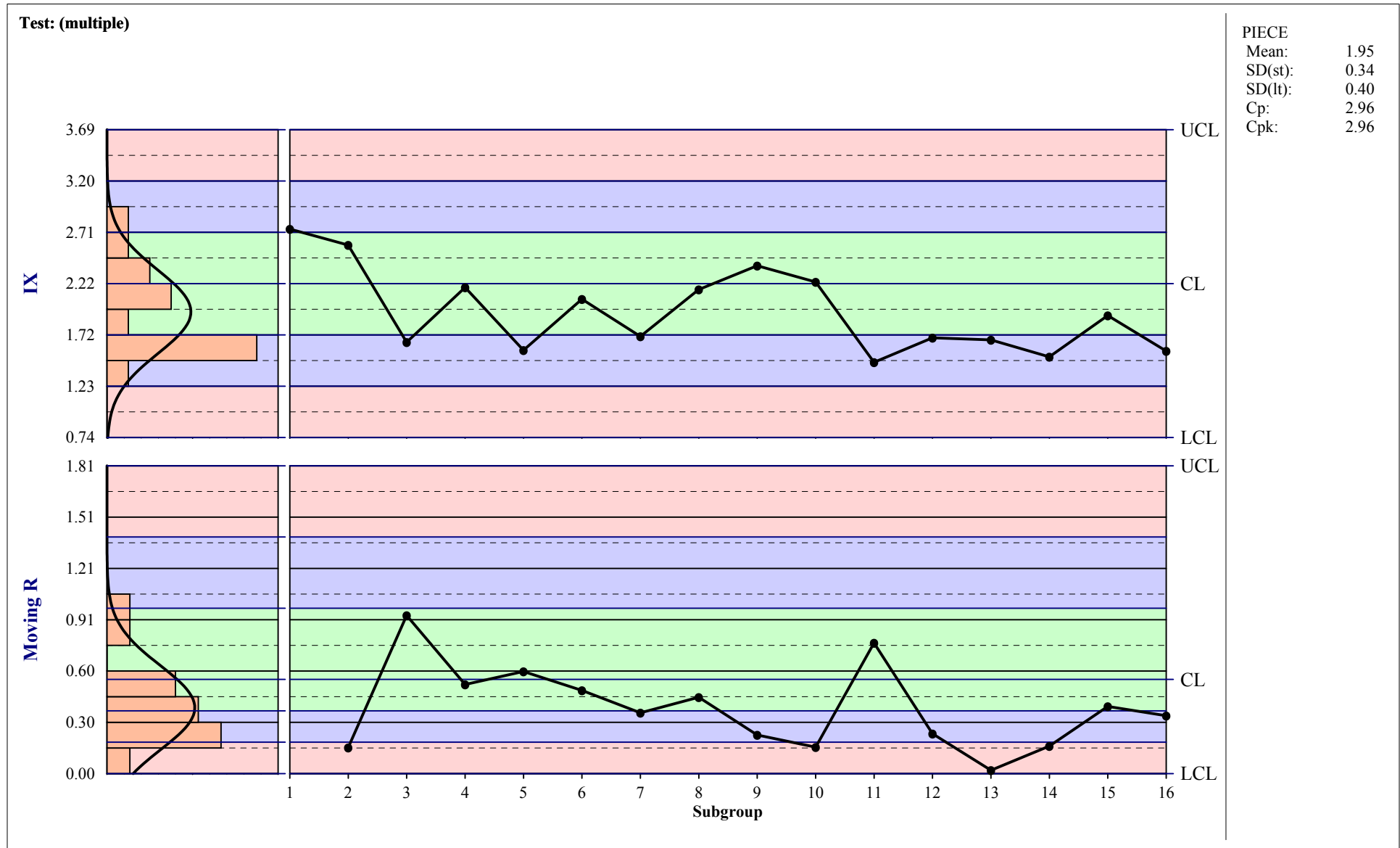
Total Metallics

Spec. Limits: CCB2-01072 / alab_gdms_w_metals_m
 095161 / alab_gdms_w_metals_m
 095161 / Metals

USL: 5.00
 USL: 5.00
 USL: 5.00

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/25/09 01:12:42 pm



Honeywell

UCL = 2 X DL

Spec. Limits: CCB2-01072 / alab_gdms_w_zn_m

USL: 0.200

095161 / alab_gdms_w_zn_m

USL: 0.200

095161 / Zn

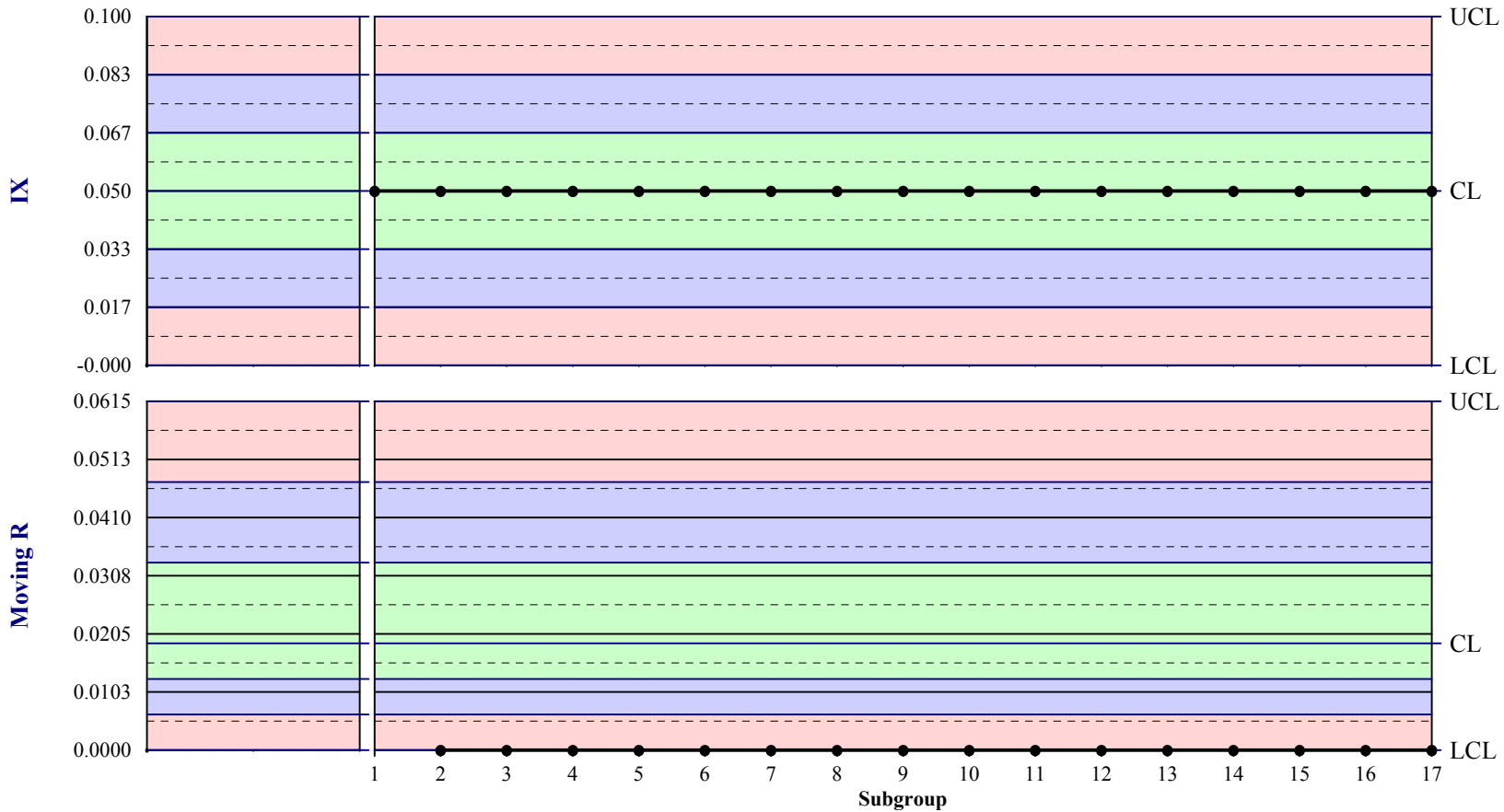
USL: 0.200

Part: CCB2-01072, 095161

Date Range: 04/21/09 10:29:00 am <=> 06/29/09 01:34:53 pm

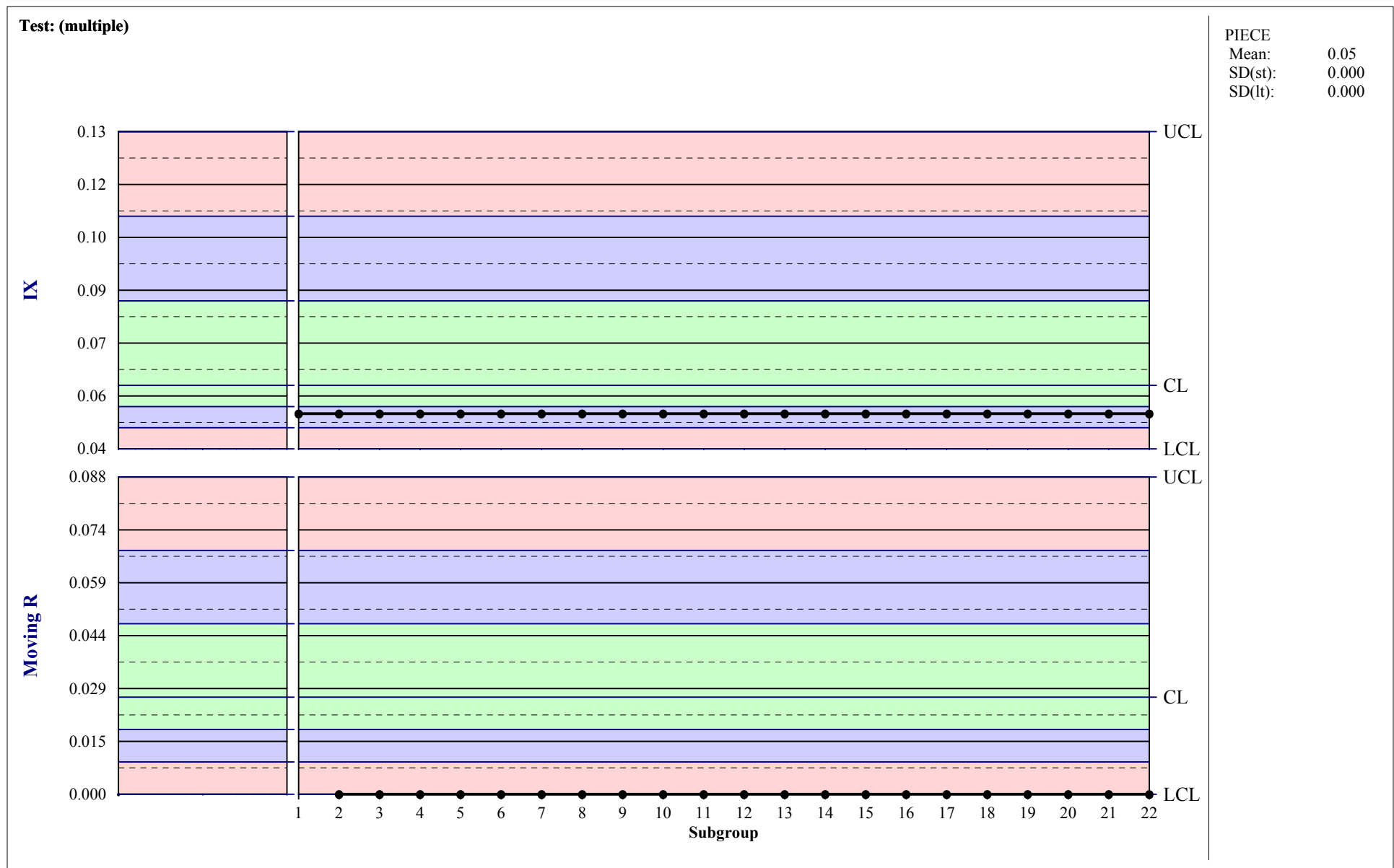
Test: (multiple)

PIECE
Mean: 0.050
SD(st): 0.0000
SD(lt): 0.0000



Honeywell

Spec. Limits: CCB2-01028 / alab_gdms_w_ca_m USL: 0.20
 095160 / alab_gdms_w_ca_m USL: 0.20
 095160 / Ca USL: 0.20
Part: CCB2-01028, 095160
Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



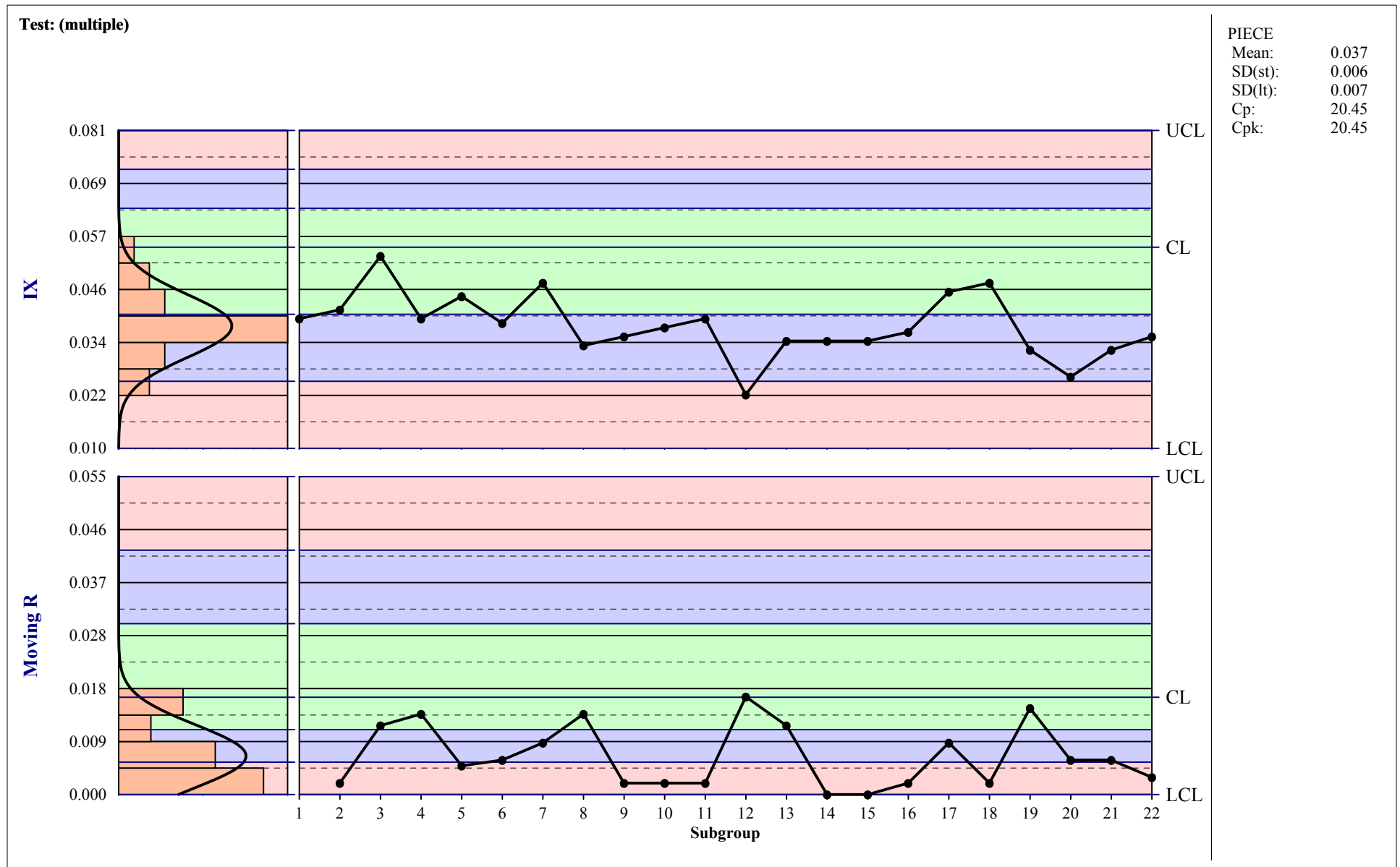
Honeywell

Spec. Limits: CCB2-01028 / alab_gdms_w_cr_m
 095160 / alab_gdms_w_cr_m
 095160 / Cr

USL: 0.400
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 USL: 0.400

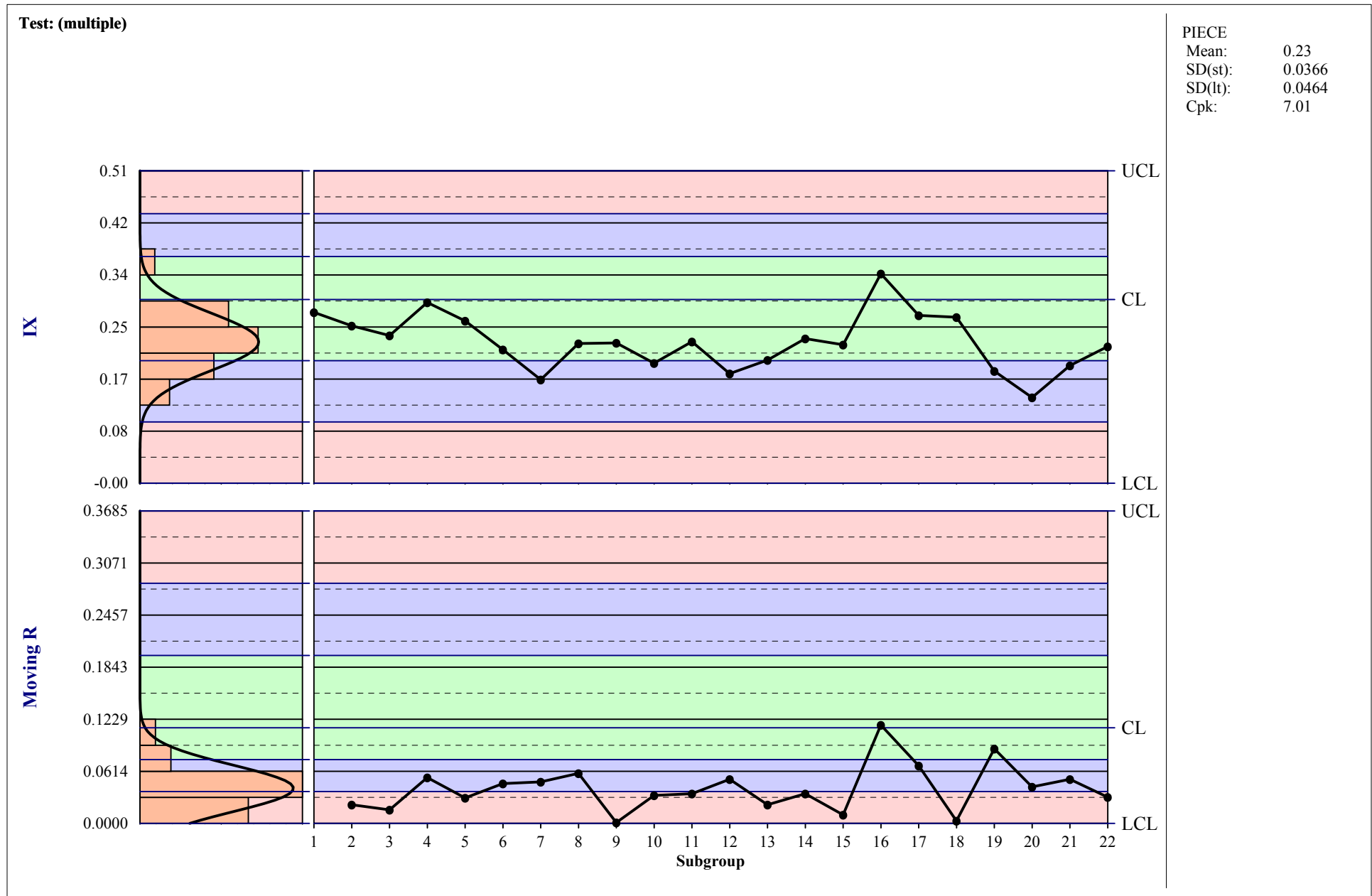
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Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

Part: CCB2-01028, 095160
Test: alab_gdms_w_fe_m, Fe
Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

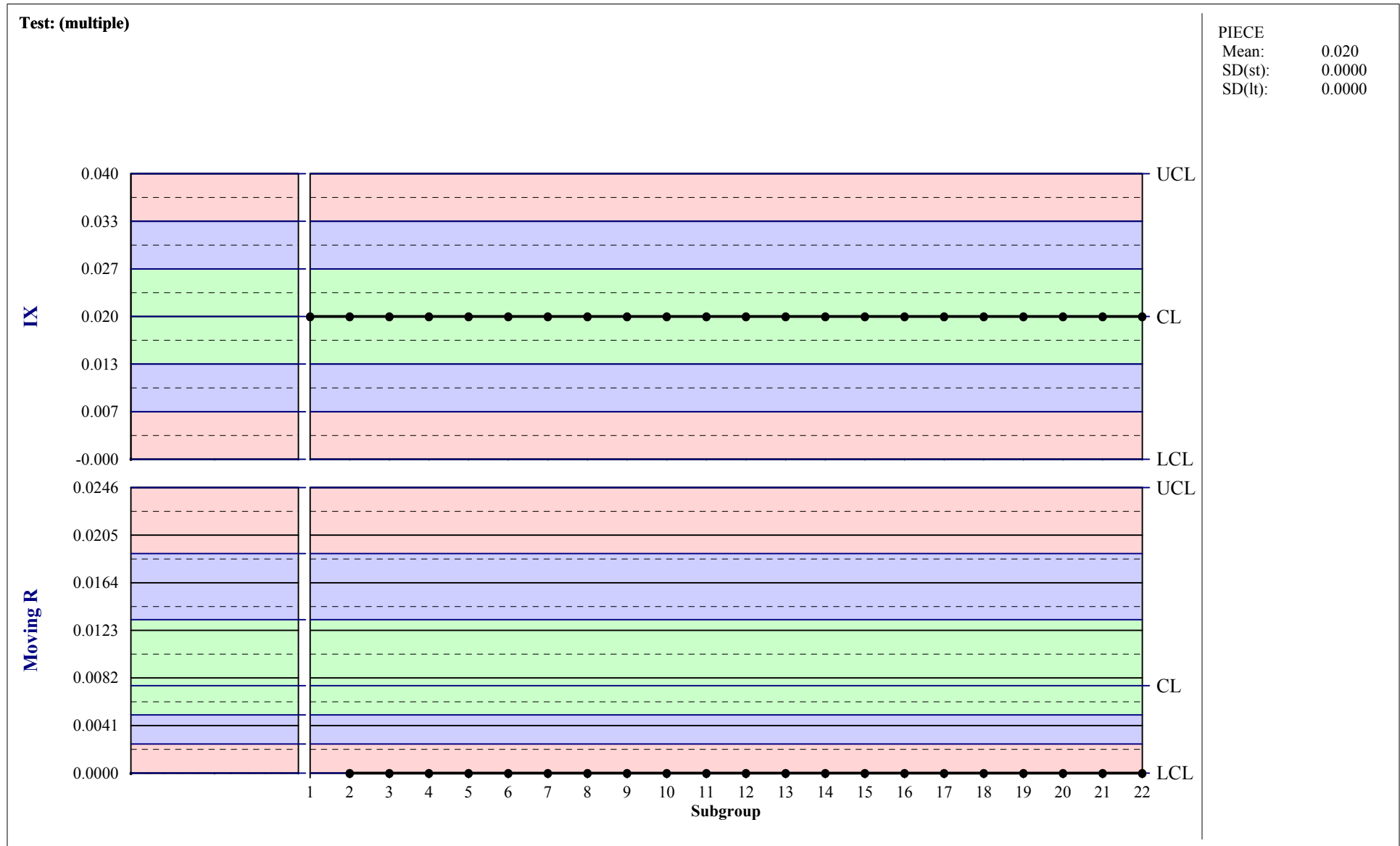
UCL = 2 X DL

Spec. Limits: CCB2-01028 / alab_gdms_w_k_m
095160 / alab_gdms_w_k_m
095160 / K

USL: 0.120
USL: 0.120
USL: 0.120

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

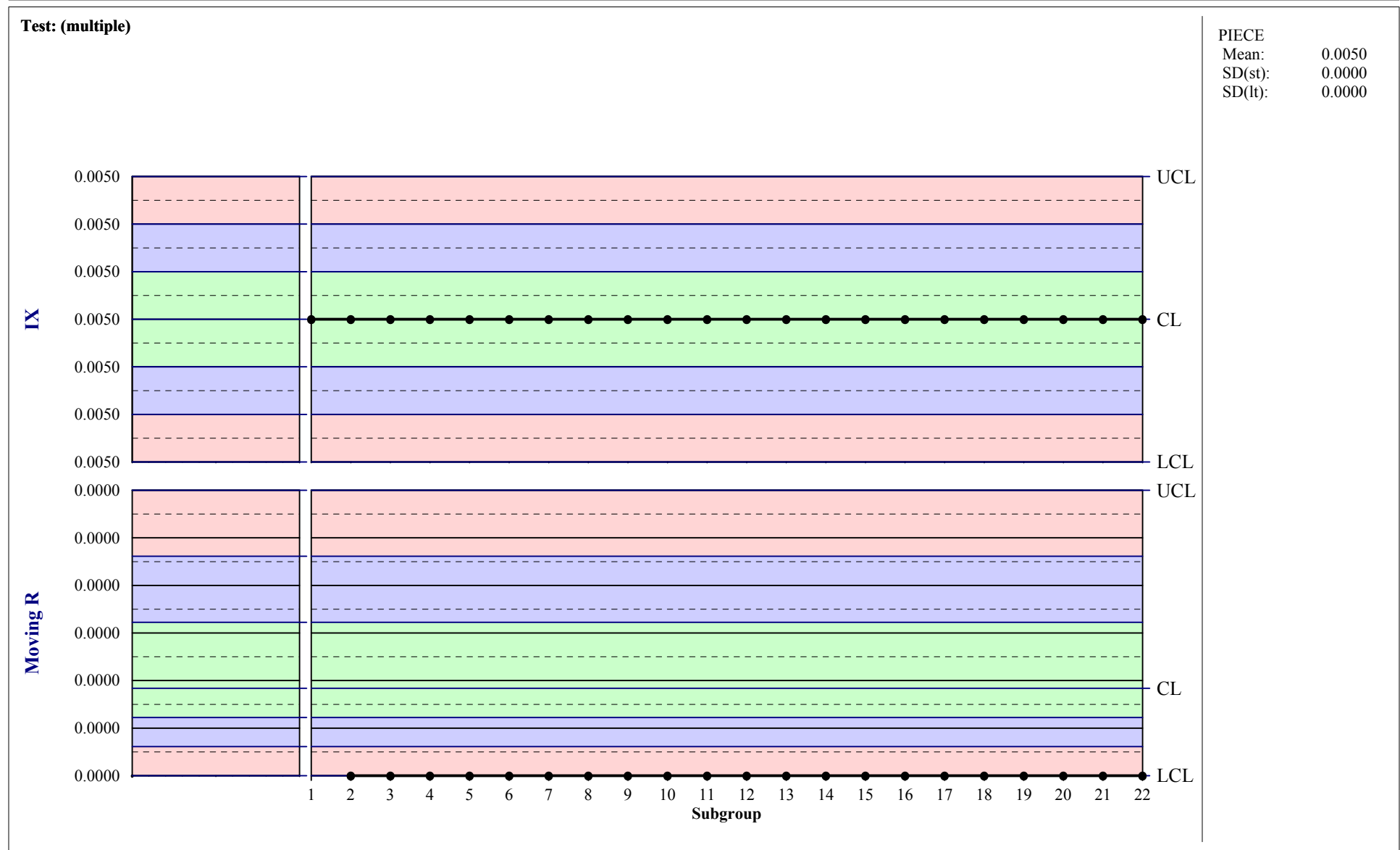
UCL = DL

Spec. Limits: CCB2-01028 / alab_gdms_w_li_m
095160 / alab_gdms_w_li_m
095160 / Li

USL: 0.0050
USL: 0.0050
USL: 0.0050

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

UCL = 4X DL

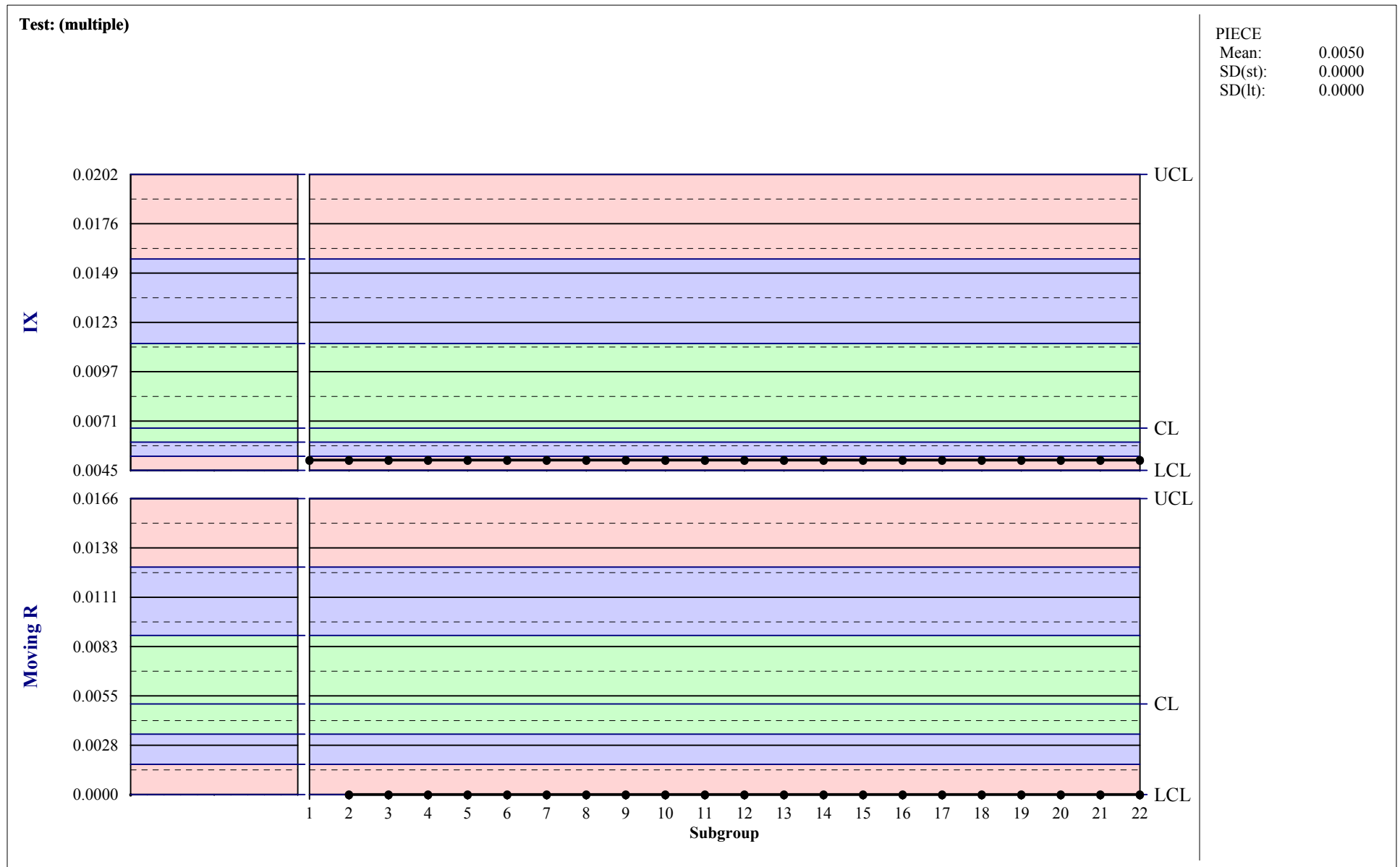
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USL: 0.0500

Part: CCB2-01028, 095160

Test: alab_gdms_w_na_m, Na

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

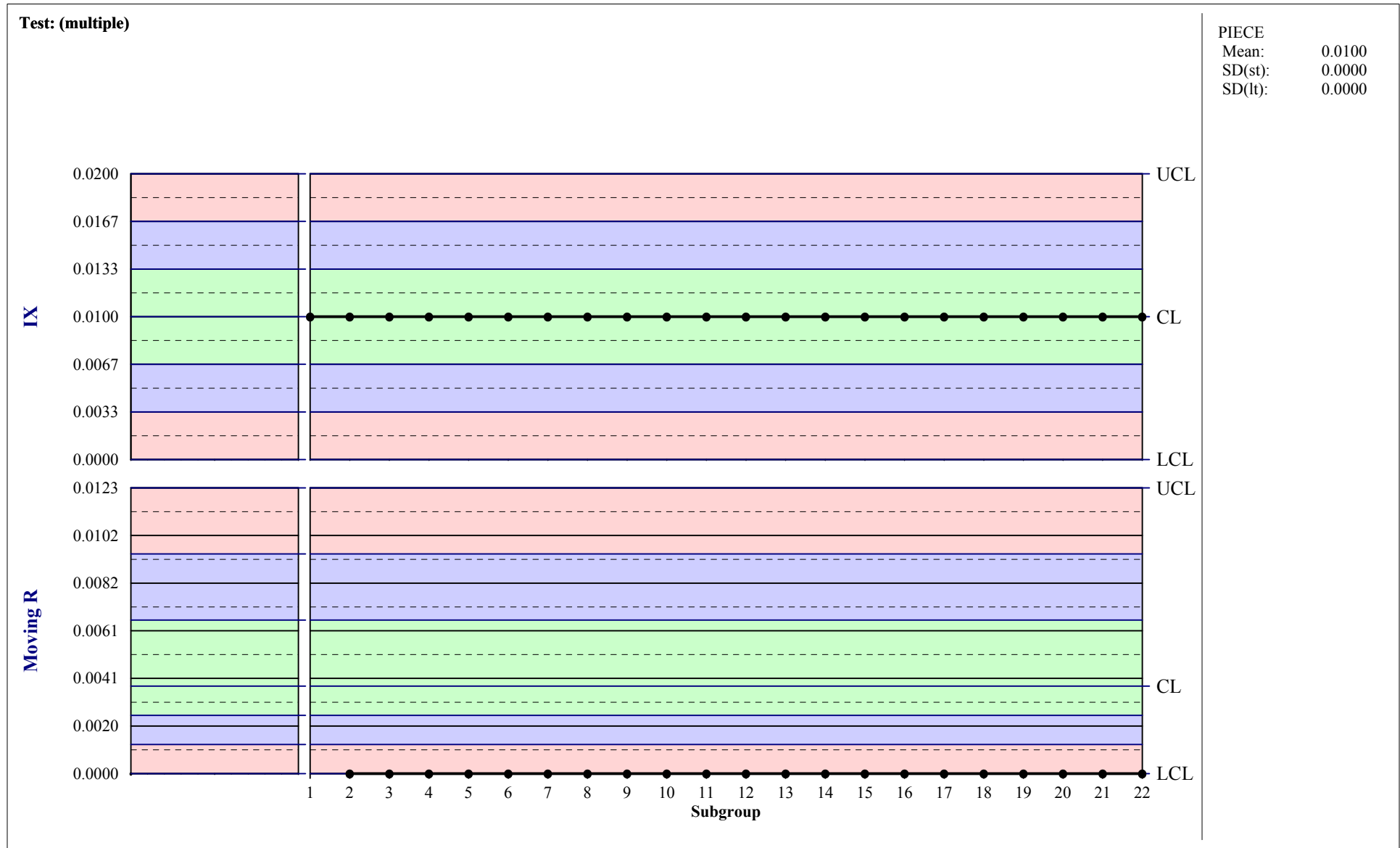
UCL = 2 X DL

Spec. Limits: CCB2-01028 / alab_gdms_w_ni_m
 095160 / alab_gdms_w_ni_m
 095160 / Ni

USL: 0.1000
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 USL: 0.1000

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



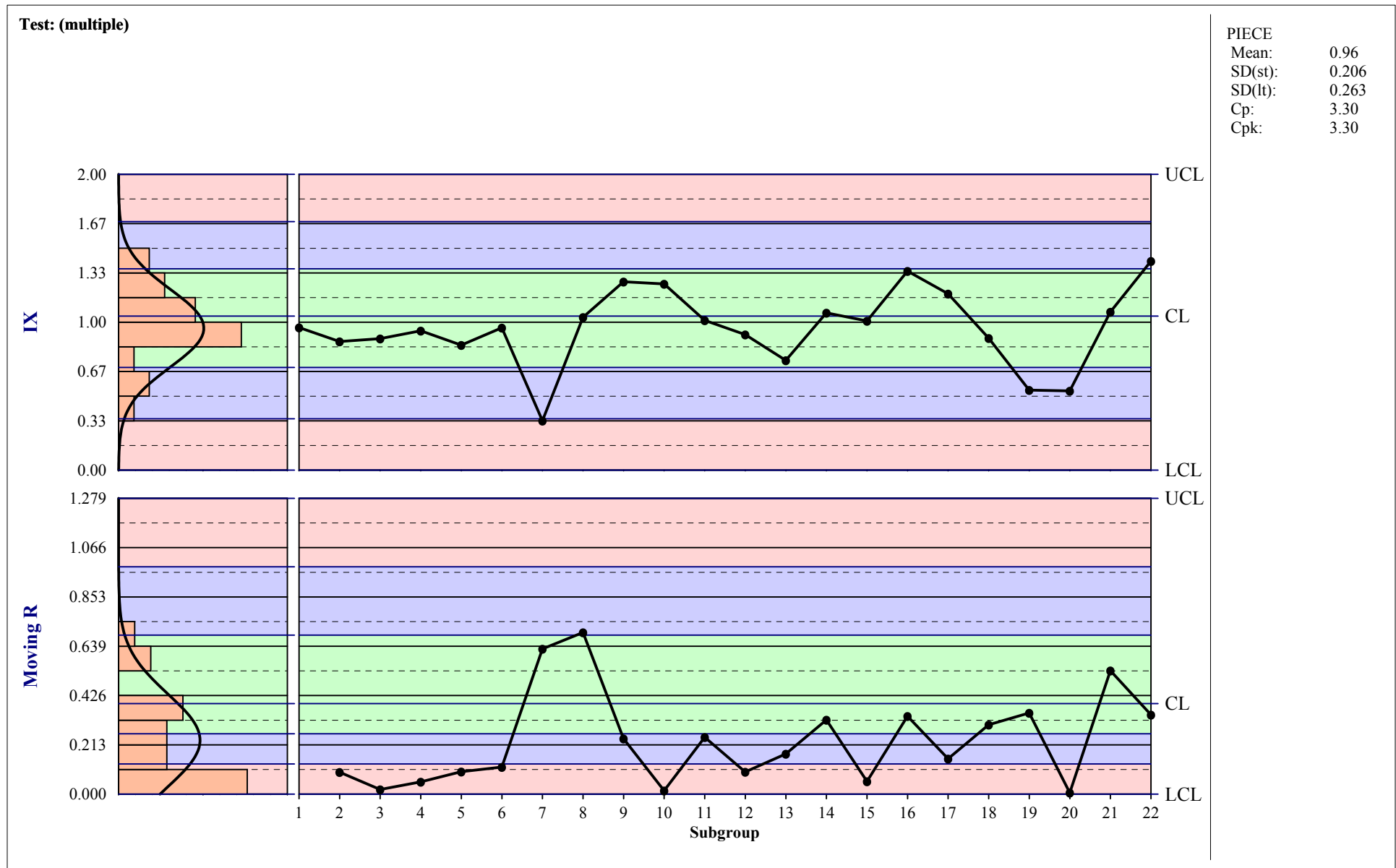
Honeywell

Spec. Limits: CCB2-01028 / alab_gdms_w_si_m
 095160 / alab_gdms_w_si_m
 095160 / Si

USL: 3.00
 USL: 3.00
 USL: 3.00

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

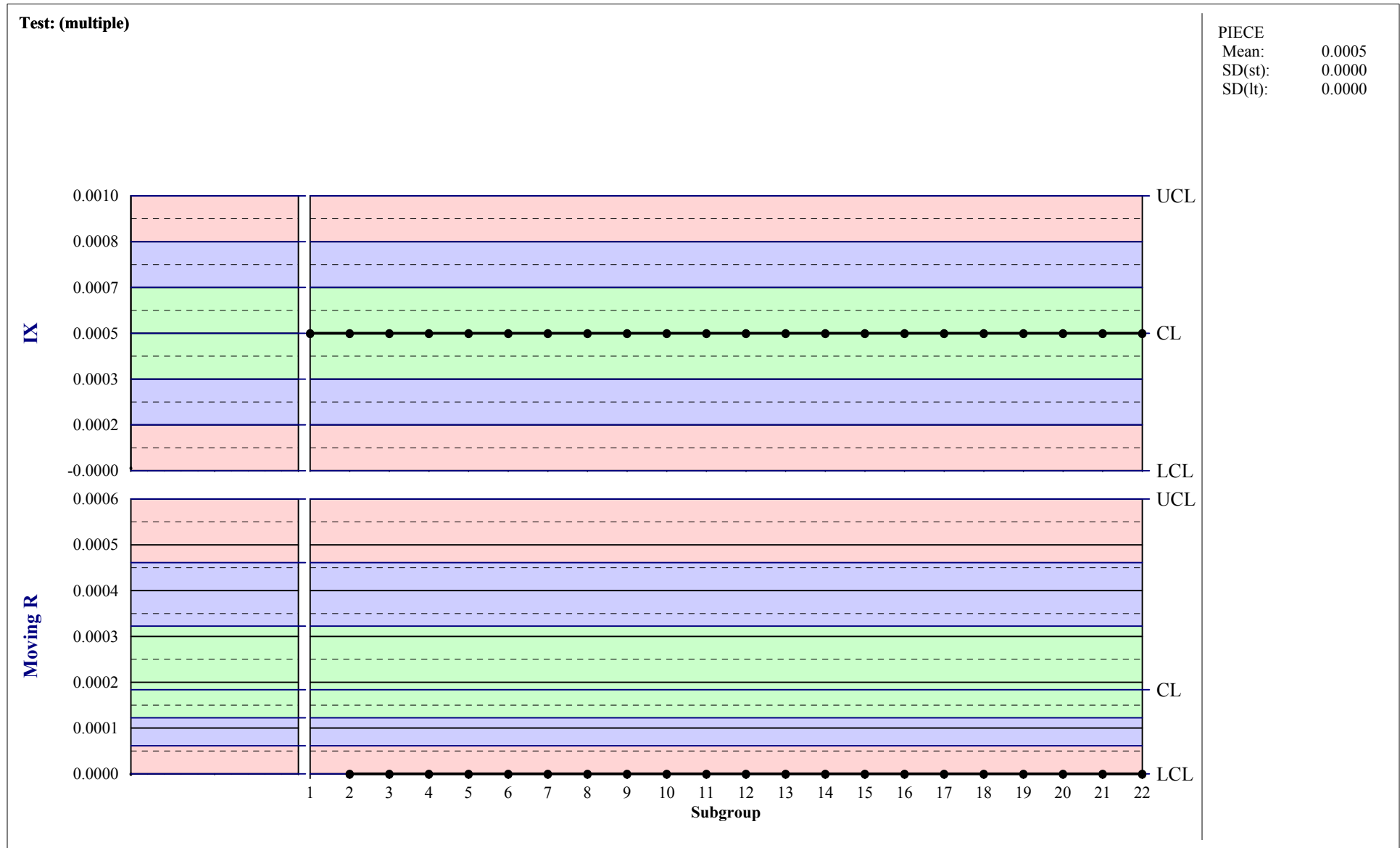
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Spec. Limits: CCB2-01028 / alab_gdms_w_th_m
095160 / alab_gdms_w_th_m
095160 / Th

USL: 0.0010
USL: 0.0010
USL: 0.0010

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

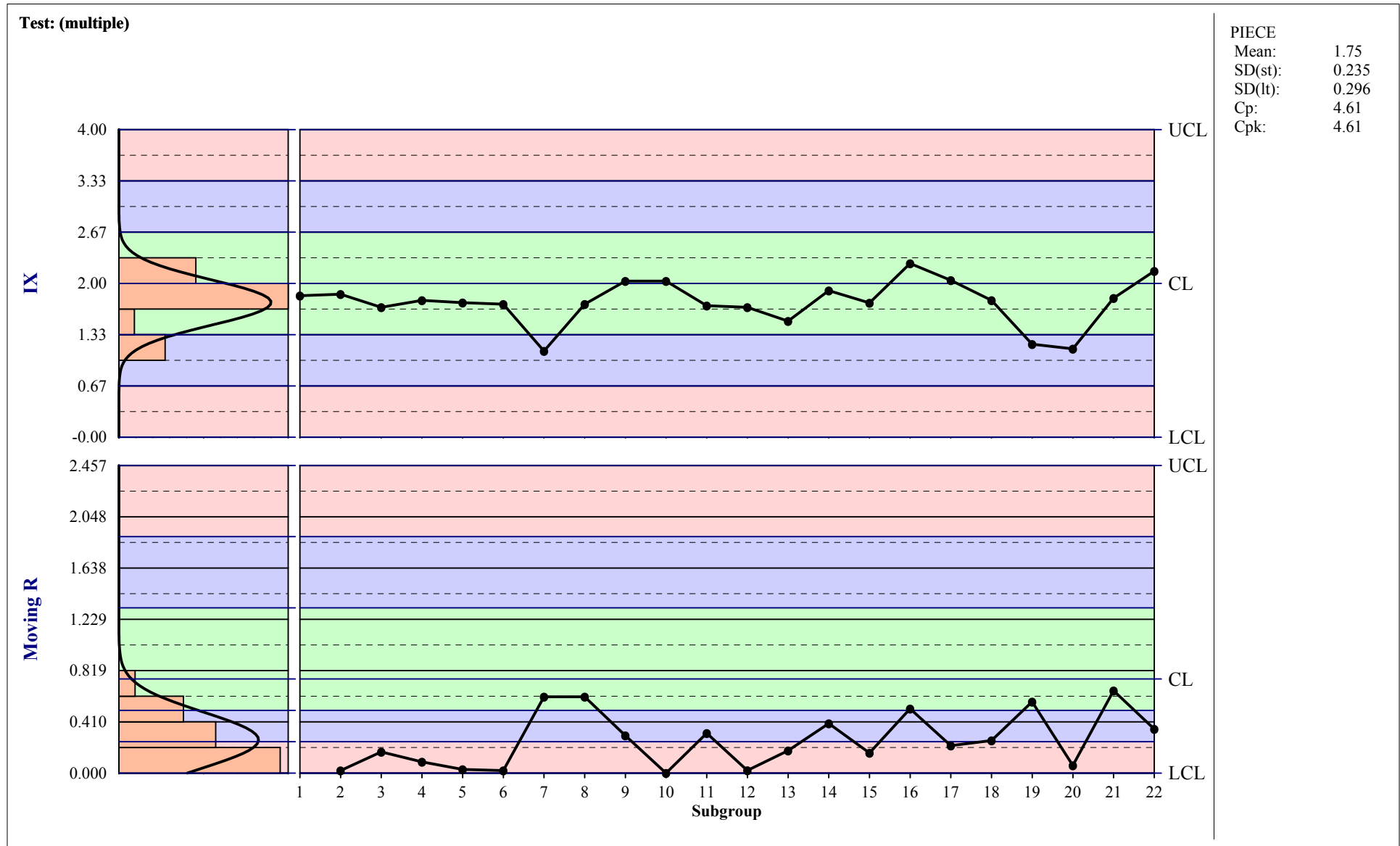
Total Metallics

Spec. Limits: CCB2-01028 / alab_gdms_w_metals_m
 095160 / alab_gdms_w_metals_m
 095160 / Metals

USL: 5.00
 USL: 5.00
 USL: 5.00

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

UCL = 2 X DL

Spec. Limits: CCB2-01028 / alab_gdms_w_u_m
095160 / alab_gdms_w_u_m
095160 / U

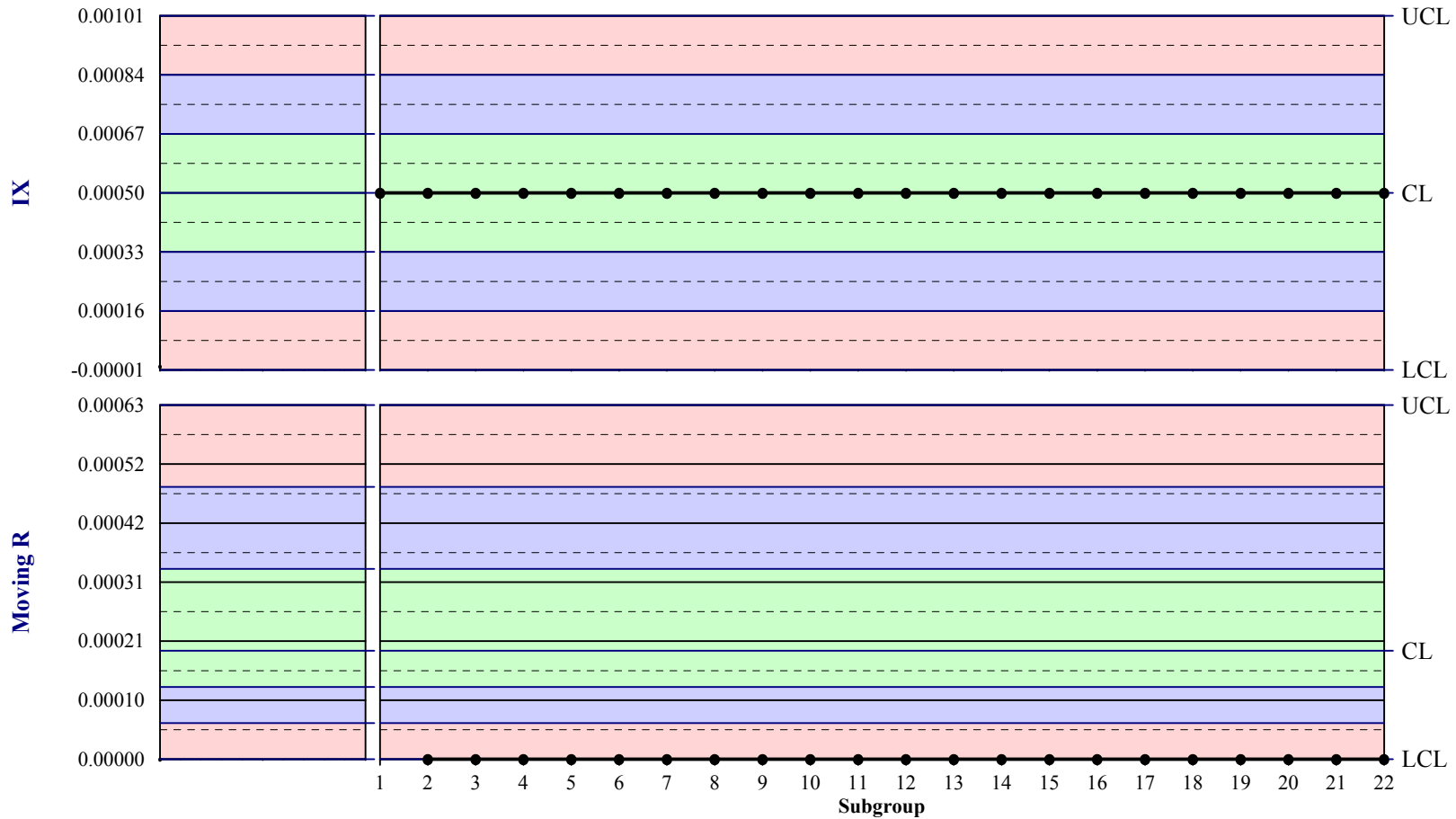
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USL: 0.00100

Part: CCB2-01028, 095160

Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm

Test: (multiple)

PIECE
Mean: 0.00050
SD(st): 0.00000
SD(lt): 0.00000



Honeywell

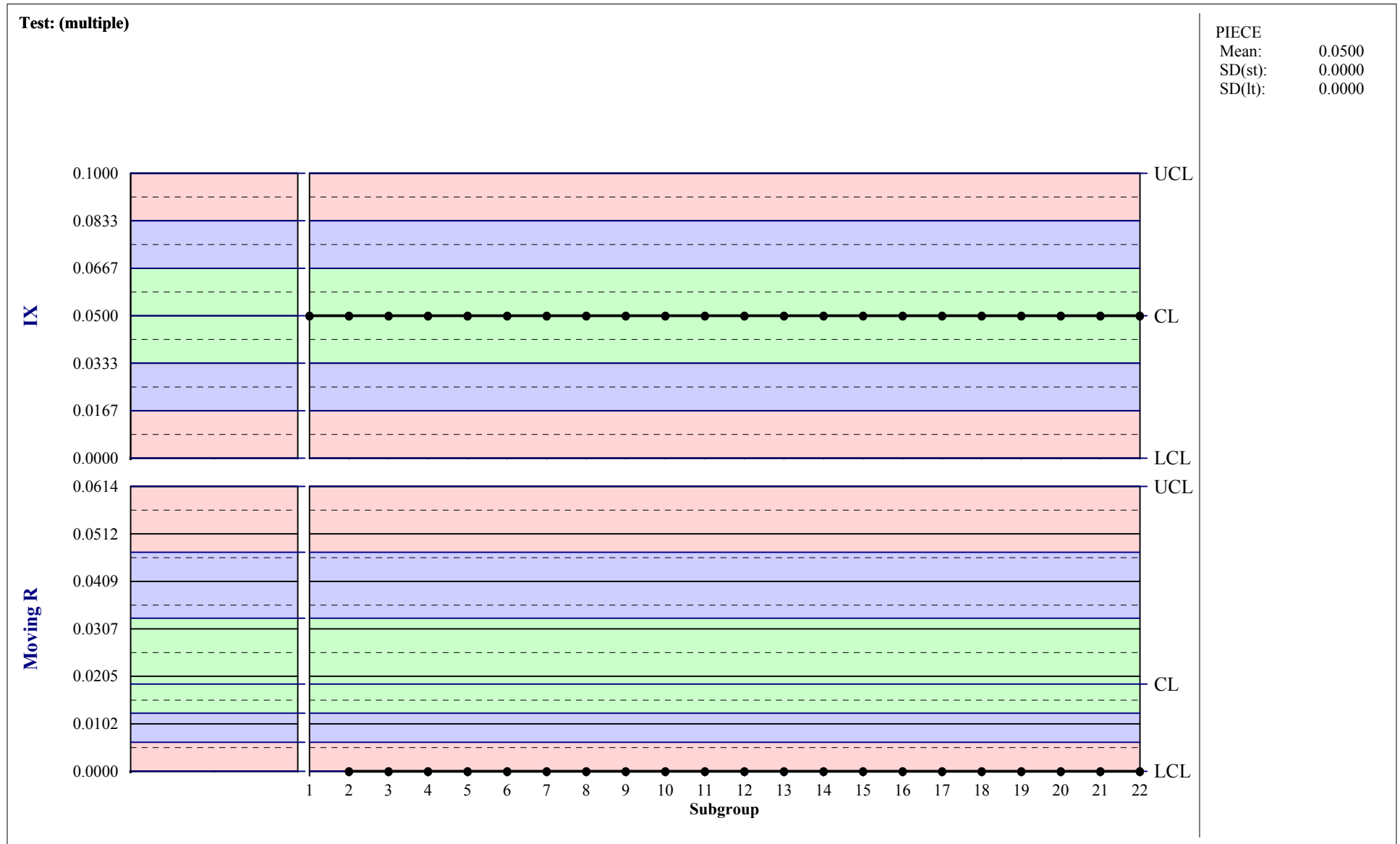
UCL = 2 X DL

Spec. Limits: CCB2-01028 / alab_gdms_w_zn_m
095160 / alab_gdms_w_zn_m
095160 / Zn

USL: 0.2000
USL: 0.2000
USL: 0.2000

Part: CCB2-01028, 095160

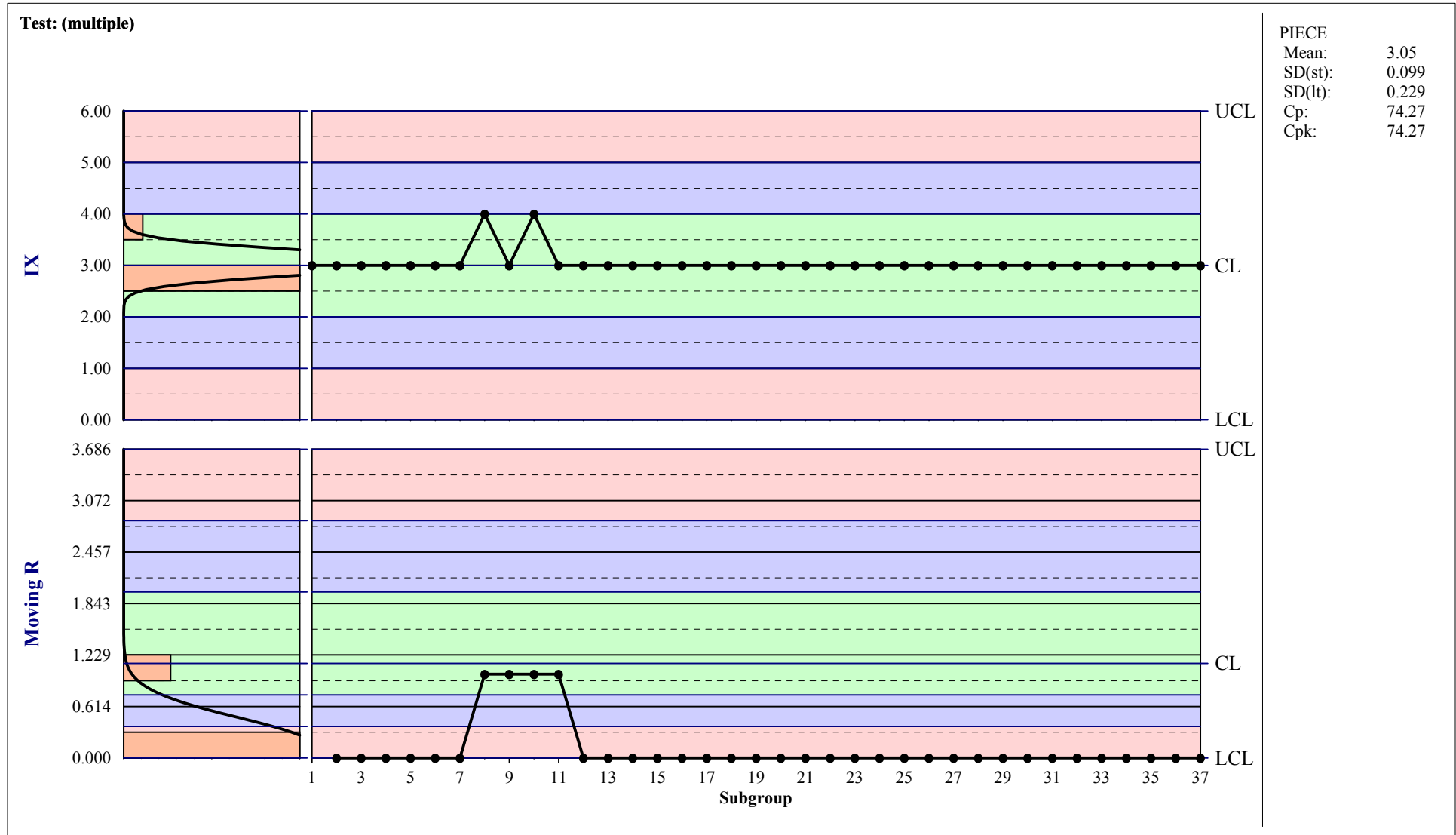
Date Range: 04/15/09 12:41:57 pm <=> 06/29/09 01:57:43 pm



Honeywell

Spec. Limits: CCB2-01072 / alab_leco_w_c_m USL: 25.00
 CCB2-01028 / alab_leco_w_c_m USL: 25.00
 095161 / alab_leco_w_c_m USL: 25.00
 095161 / C USL: 25.00
 095160 / alab_leco_w_c_m USL: 25.00
 095160 / C USL: 25.00

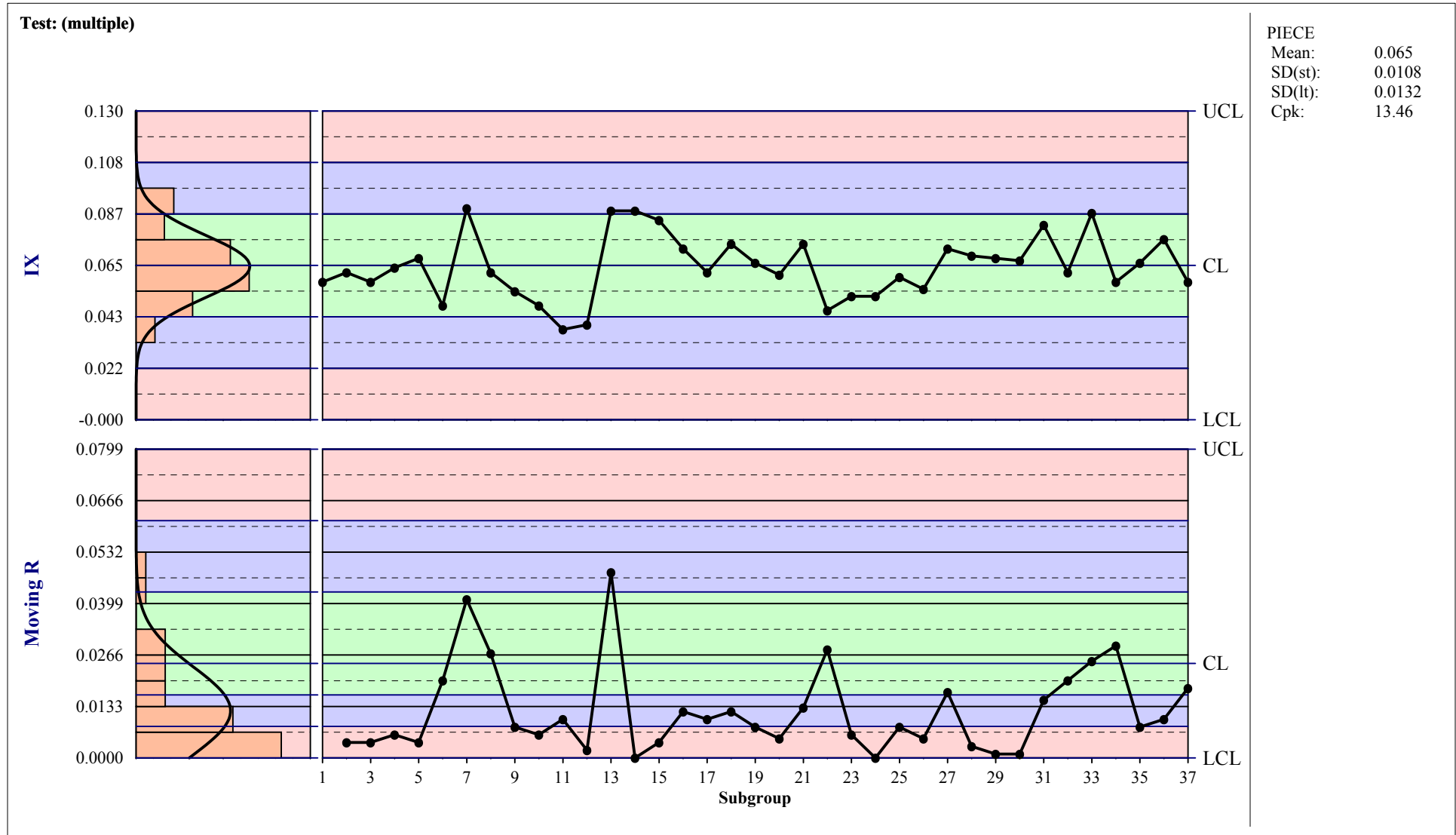
Part: CCB2-01028, CCB2-01072, 095161, 095160
Date Range: 04/08/09 02:34:36 pm <=> 06/29/09 01:57:43 pm



Honeywell

Spec. Limits: CCB2-01072 / alab_leco_w_h_m USL: 0.500
 CCB2-01028 / alab_leco_w_h_m USL: 0.500
 095161 / alab_leco_w_h_m USL: 0.500
 095161 / H USL: 0.500
 095160 / alab_leco_w_h_m USL: 0.500
 095160 / H USL: 0.500

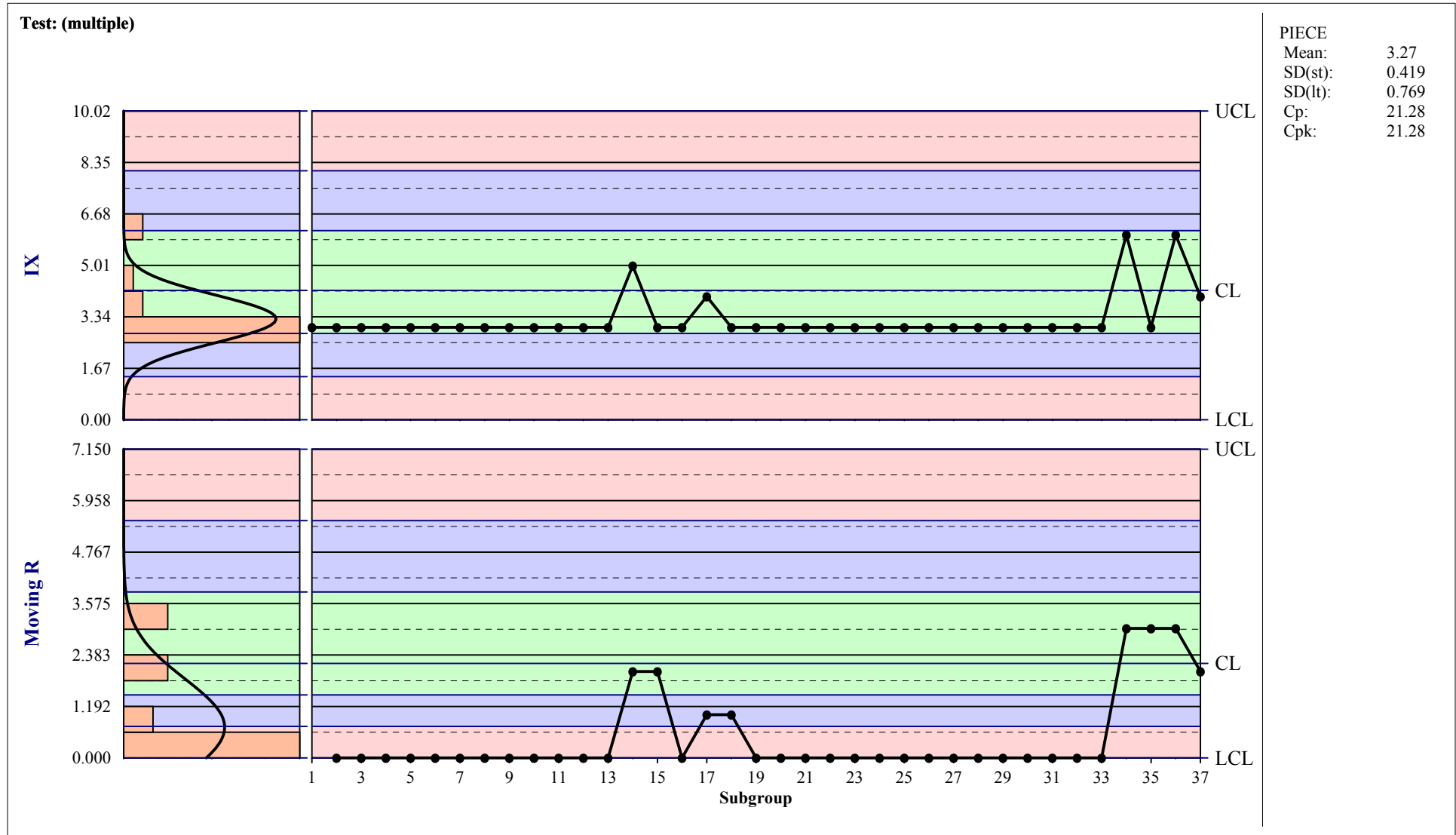
Part: CCB2-01028, CCB2-01072, 095160, 095161
Date Range: 04/08/09 02:34:36 pm <=> 06/29/09 01:57:43 pm



Honeywell

Spec. Limits: CCB2-01072 / alab_leco_w_o_m USL: 30.00
 CCB2-01028 / alab_leco_w_o_m USL: 30.00
 095161 / alab_leco_w_o_m USL: 30.00
 095161 / O USL: 30.00
 095160 / alab_leco_w_o_m USL: 30.00
 095160 / O USL: 30.00

Part: CCB2-01028, CCB2-01072, 095160, 095161
Date Range: 04/08/09 02:34:36 pm <=> 06/29/09 01:57:43 pm

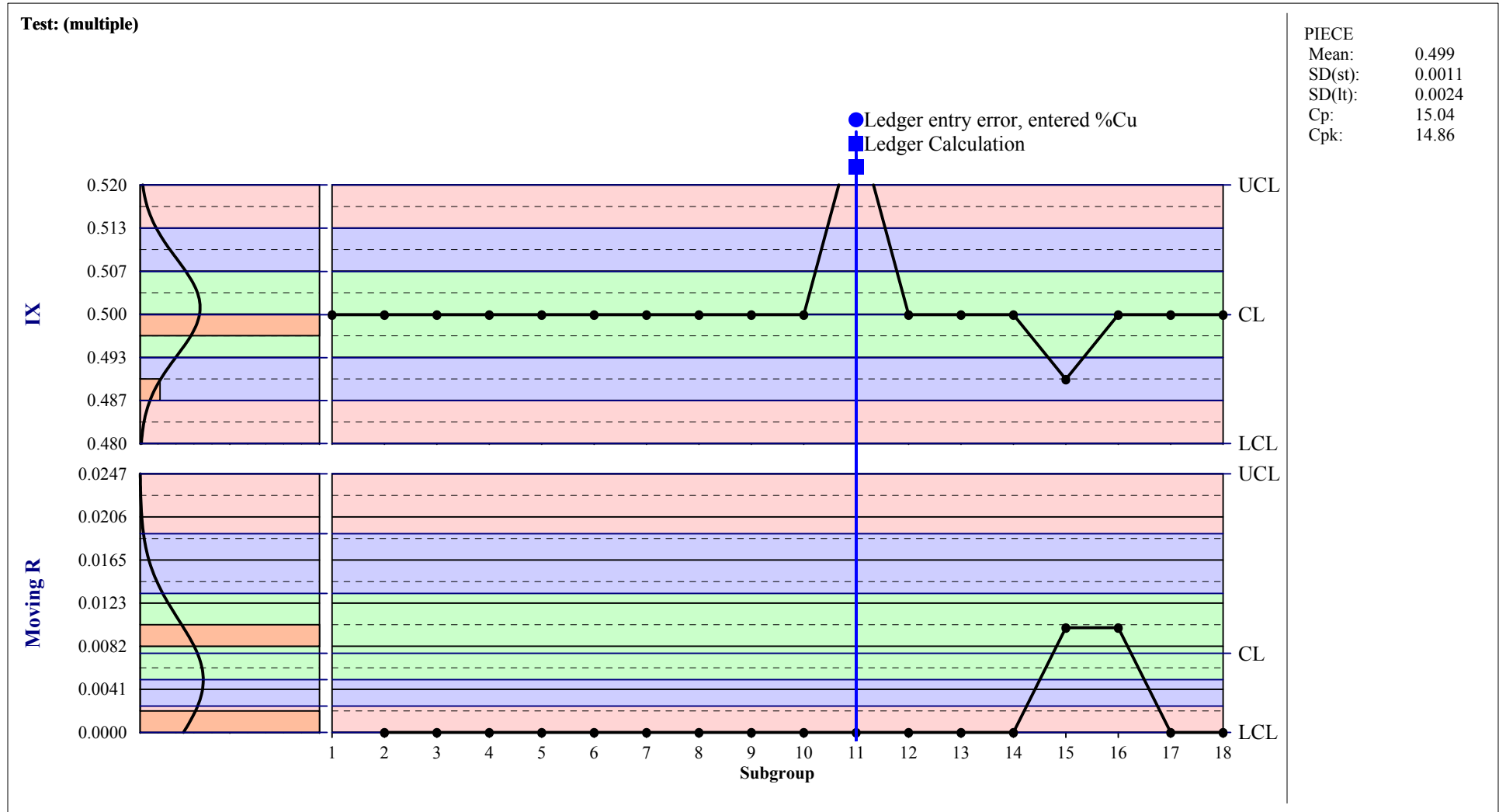


Honeywell

Al 1Si 0.5Cu (%Cu)

Spec. Limits:	CCB-01032 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	CCB-01073 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095136 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095136 / Cu	USL: 0.550	LSL: 0.450
	095143 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095143 / Cu	USL: 0.550	LSL: 0.450

Part: CCB-01032, CCB-01073, 095136, 095143
Test: alab_aa_w_cu_p, Cu
Date Range: 10/01/08 02:04:33 pm <=> 06/17/09 03:14:03 pm



Honeywell
Al 1Si 0.5Cu (%Cu)

11 - 12/15/08 03:28:14 pm

Comment: Dale Luders
ACC: Ledger Calculation

SID= 1231326896

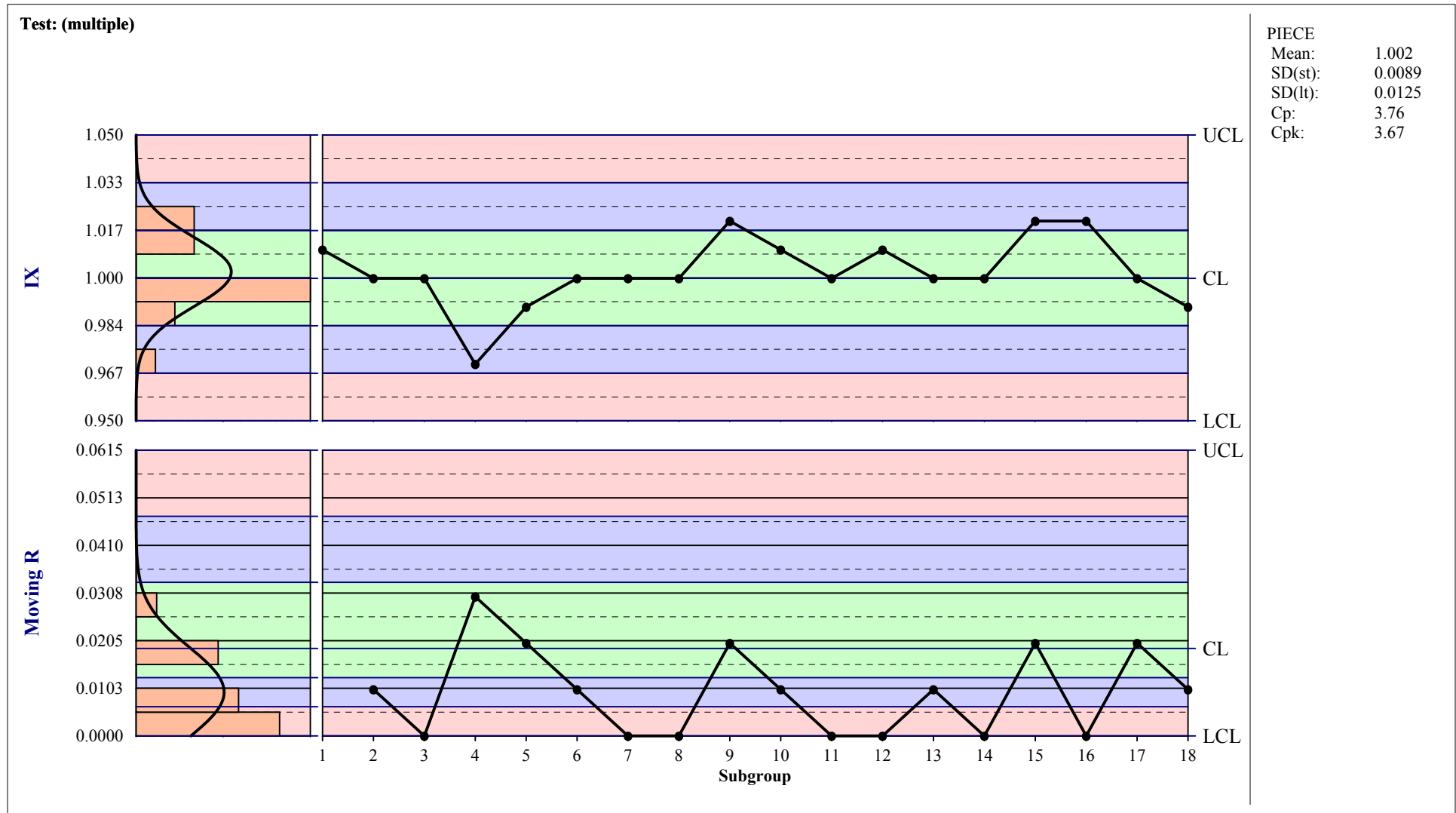
01/13/09 12:07:52 pm. Ledger entry error, entered %Cu as .005 instead of .05

Honeywell

Al 1Si 0.5Cu (%Si)

Spec. Limits:	CCB-01032 / alab_aa_w_si_p	USL: 1.100	LSL: 0.900
	CCB-01073 / alab_aa_w_si_p	USL: 1.100	LSL: 0.900
	095136 / alab_aa_w_si_p	USL: 1.100	LSL: 0.900
	095136 / Si	USL: 1.100	LSL: 0.900
	095143 / alab_aa_w_si_p	USL: 1.100	LSL: 0.900
	095143 / Si	USL: 1.100	LSL: 0.900

Part: CCB-01032, CCB-01073, 095136, 095143
Date Range: 10/01/08 02:04:33 pm <=> 06/17/09 03:14:03 pm

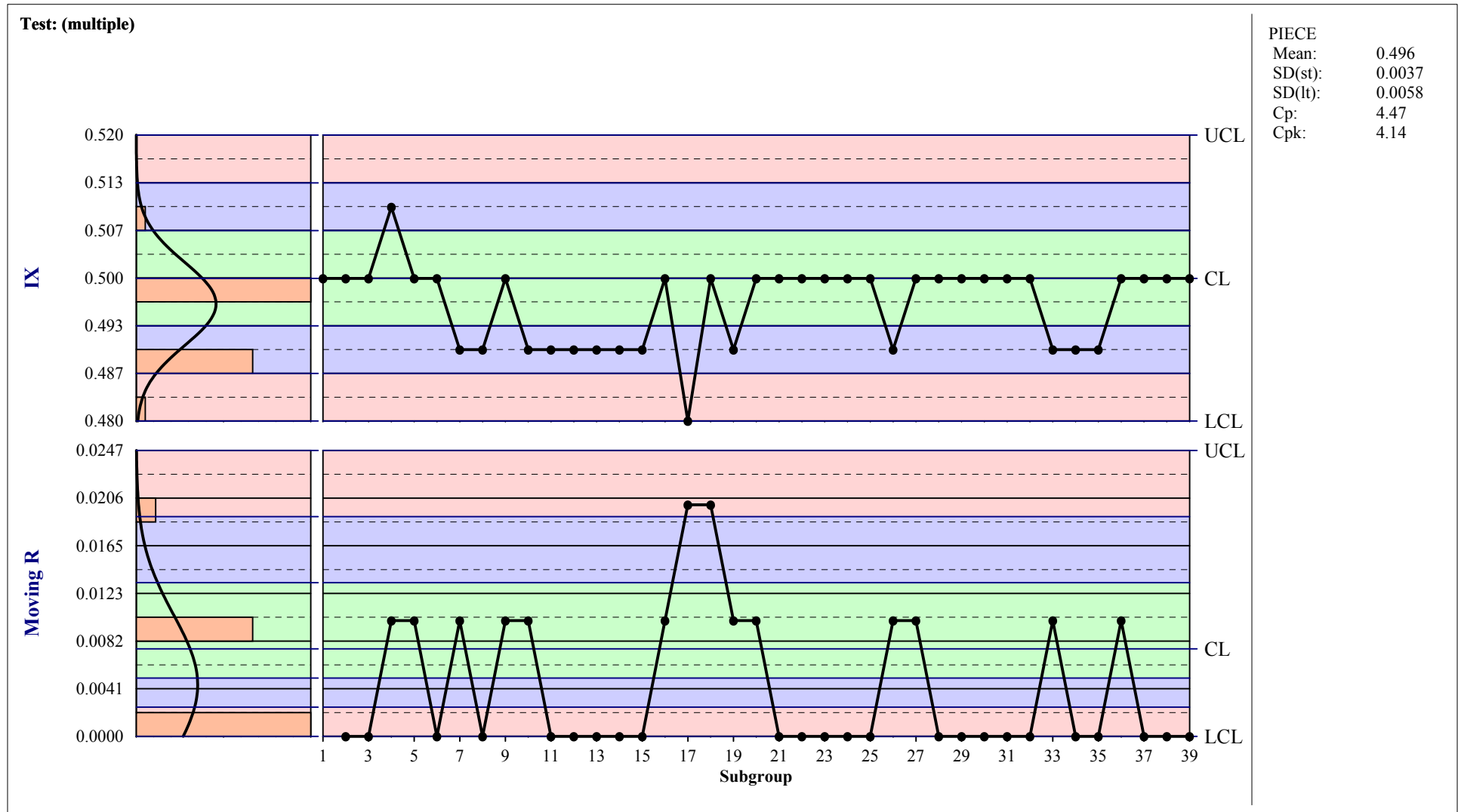


Honeywell

Al .5Cu (%Cu)

Spec. Limits:	CCB2-01072 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	CCB2-01028 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095161 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095161 / Cu	USL: 0.550	LSL: 0.450
	095160 / alab_aa_w_cu_p	USL: 0.550	LSL: 0.450
	095160 / Cu	USL: 0.550	LSL: 0.450

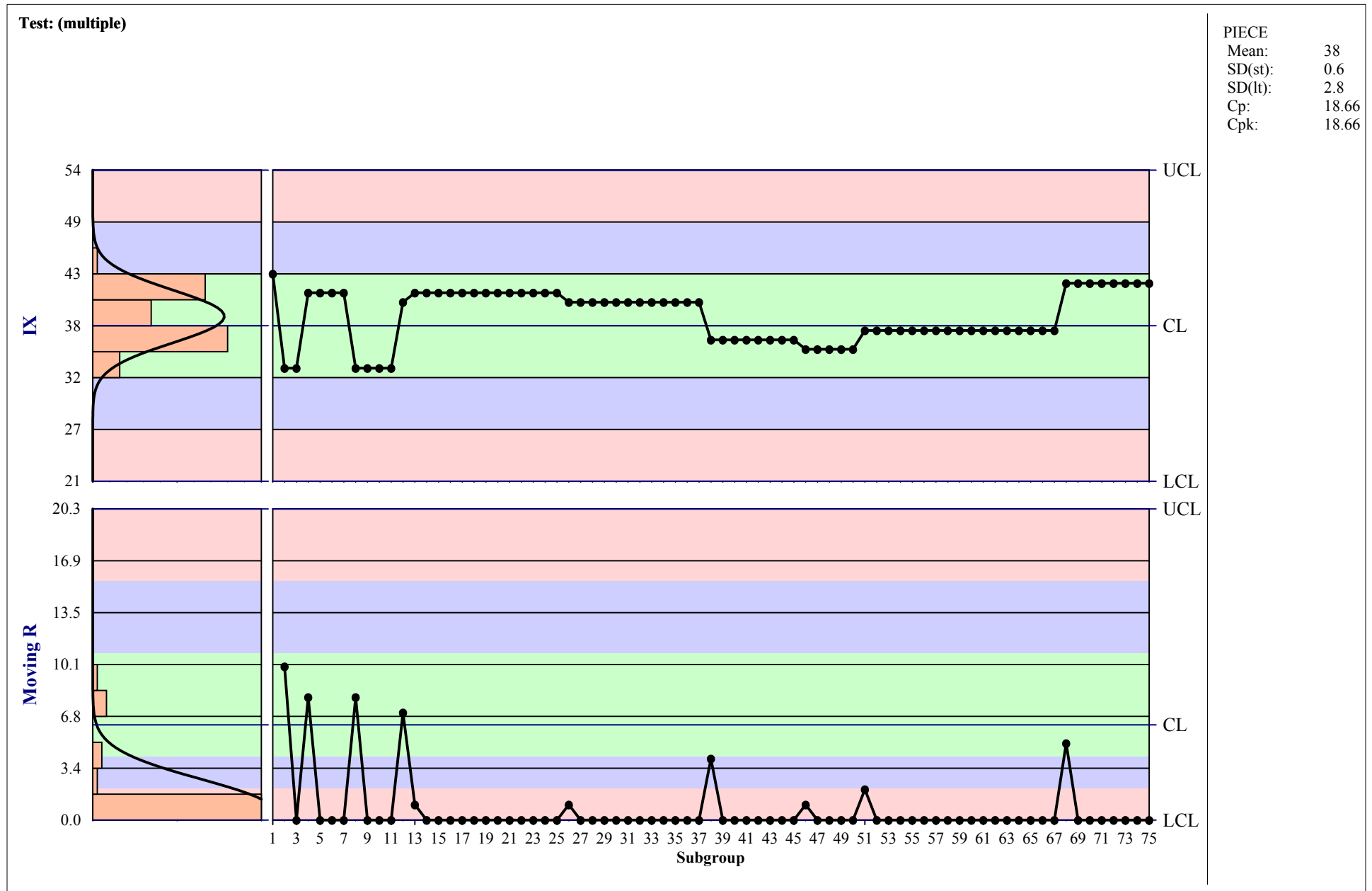
Part: CCB2-01028, CCB2-01072, 095160, 095161
Date Range: 04/09/09 01:51:46 pm <=> 06/29/09 01:57:43 pm



Honeywell

Al .5Cu (APX)

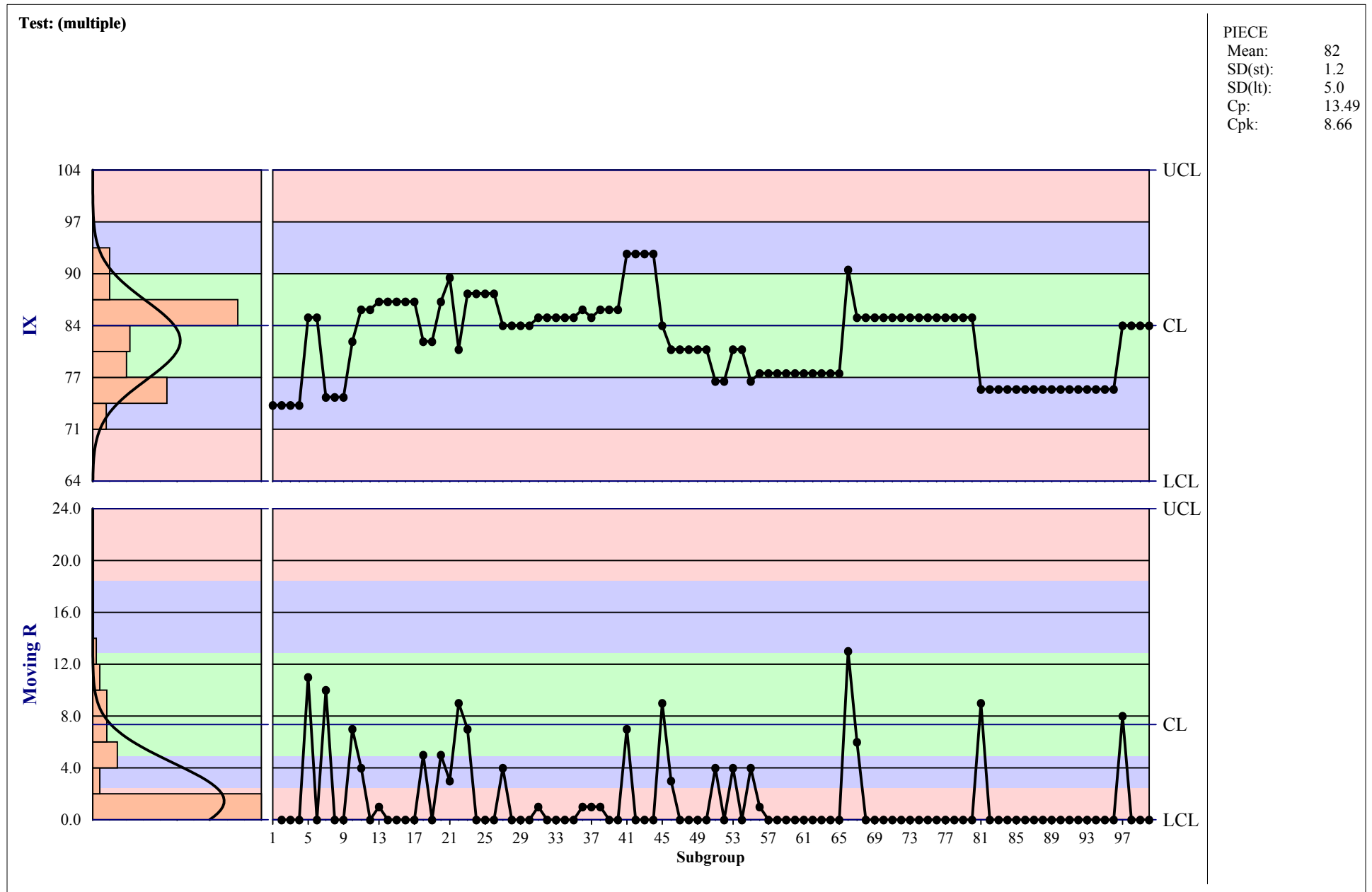
Part: TSENALMOX-08347, 083584
 Date Range: 05/19/09 07:36:59 pm <=> 06/26/09 08:49:15 pm



Honeywell

Al .5Cu OOP (Lg Endura)

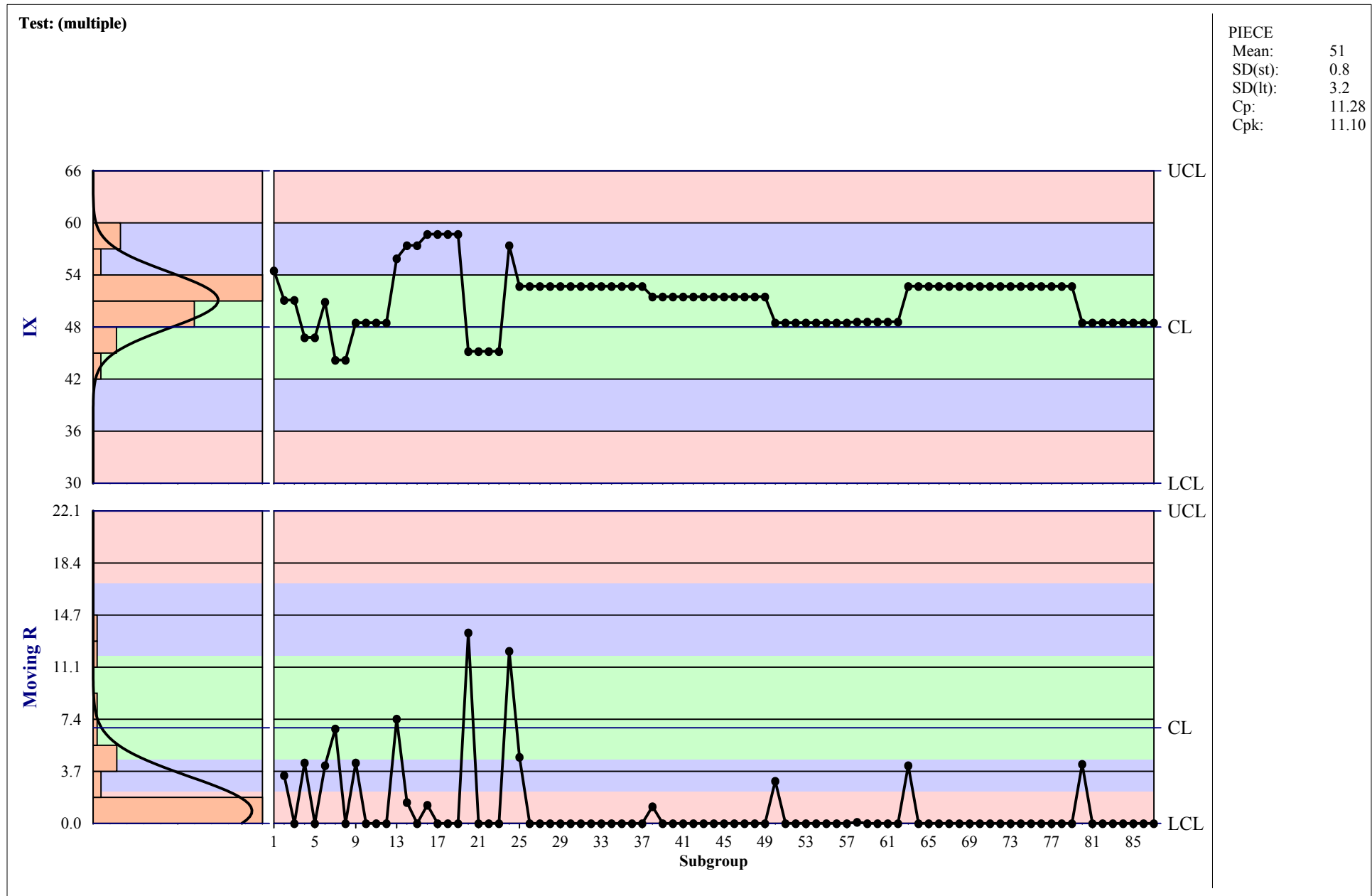
Part: TB-03051, TSENALMOX-08287
 Date Range: 02/24/09 10:04:03 pm <=> 07/08/09 01:27:12 pm



Honeywell

Al .5Cu (APX)

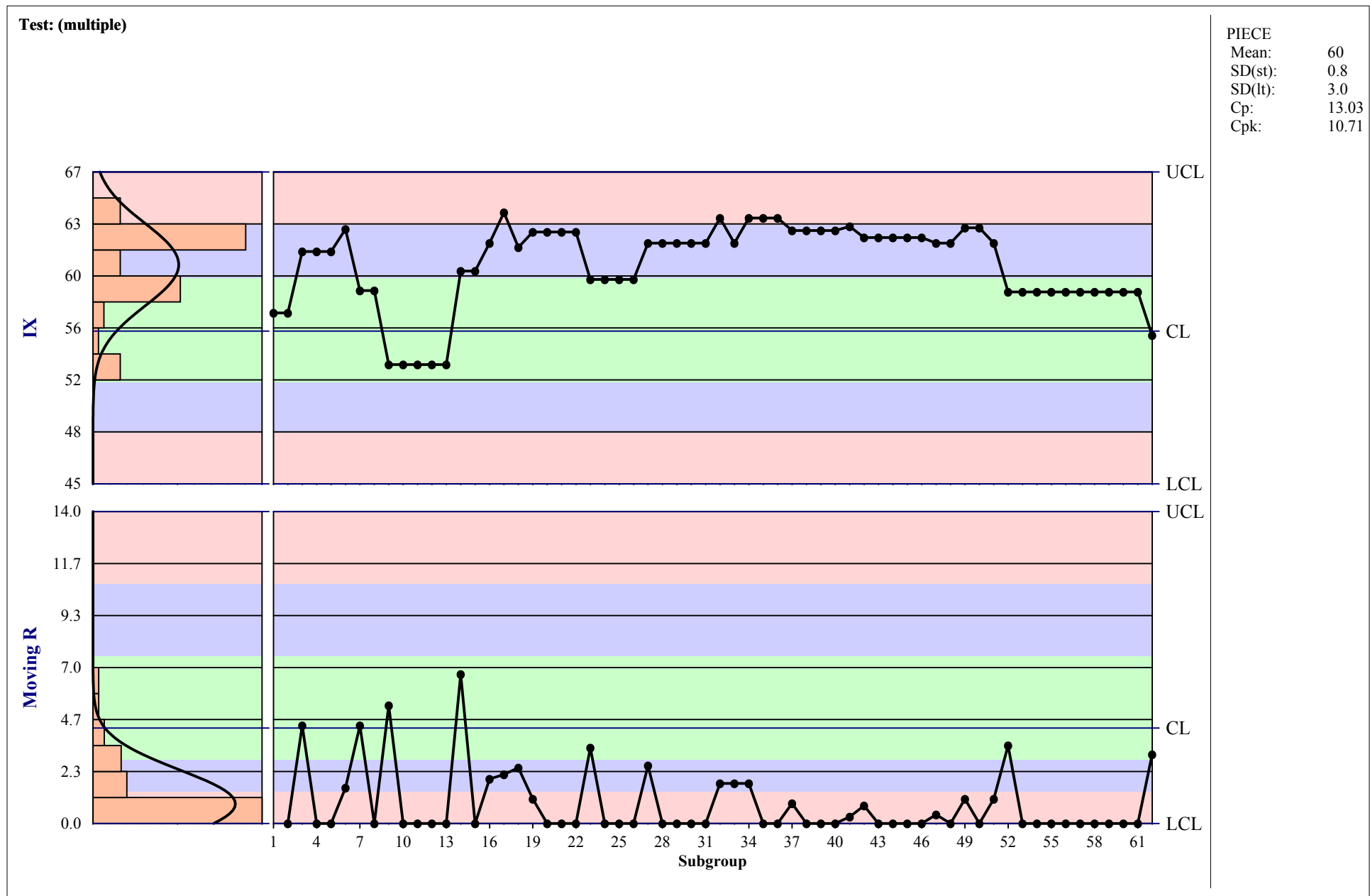
Part: TSENALMOX-08347, 083584
 Date Range: 04/09/09 11:18:39 am <=> 06/26/09 08:49:15 pm



Honeywell

Al .5Cu (OOP)

Part: TB-03051, TSENALMOX-08287
 Date Range: 03/27/09 08:16:16 am <=> 06/25/09 10:58:25 am



SECTION 3 - COPPER

Copper Trace Elemental Impurities

Configuration	Characteristic	File Name (*.bmp)
69 Cu	C	6NCu_C
	Cr	6NCu_Cr
	Fe	6NCu_Fe
	K	6NCu_K
	Na	6NCu_Na
	Li	6NCu_Li
	O	6NCu_O
	Tot Metallics	6NCu_Tot

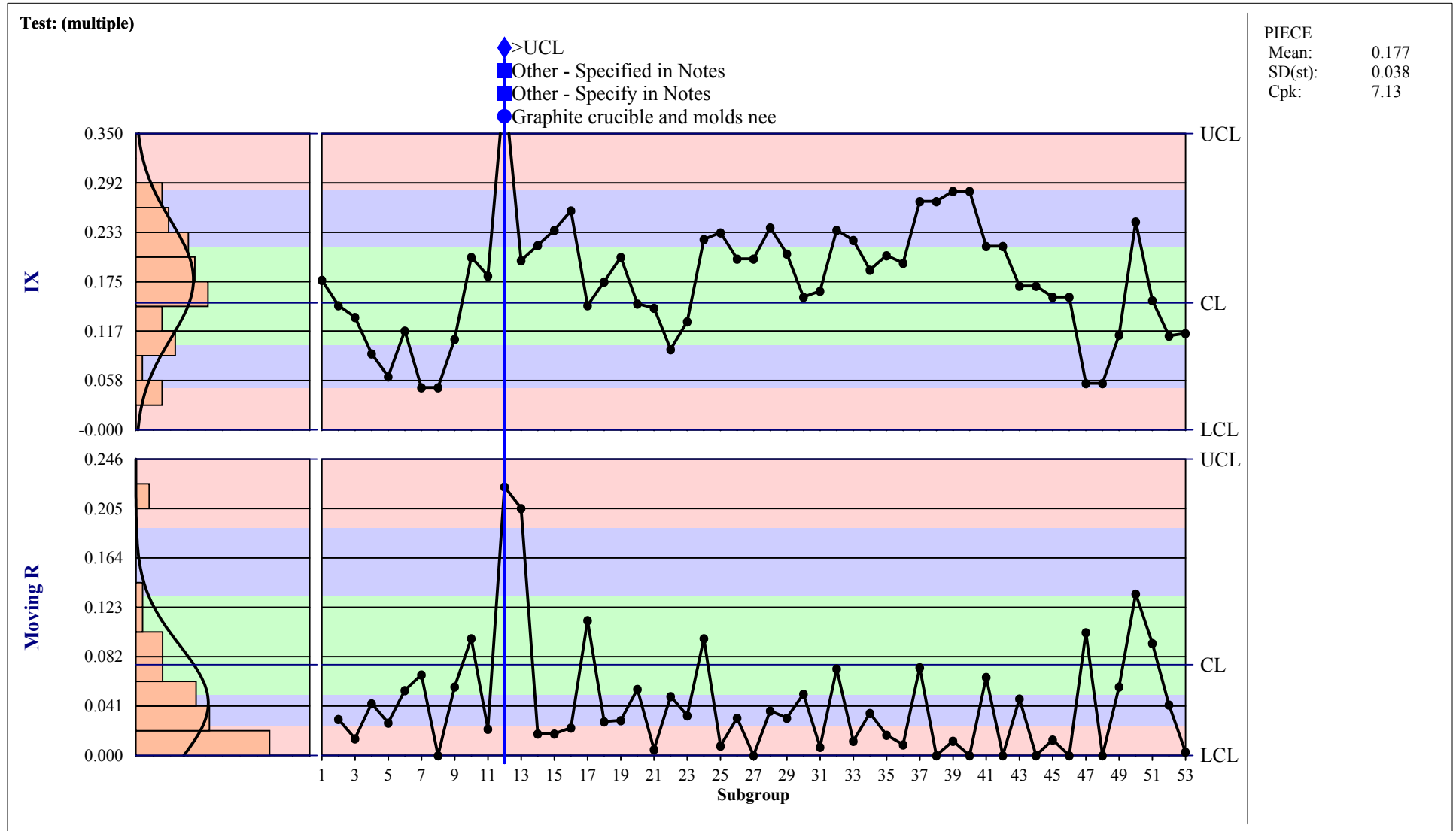
Honeywell

SIP, HCM

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083

Spec. Limits: 083389 / alab_gdms_w_c_m USL: 1.000
 090724 / alab_gdms_w_c_m USL: 1.000
 091996 / alab_gdms_w_c_m USL: 1.000
 095083 / alab_gdms_w_c_m USL: 1.000
 095083 / C USL: 1.000

Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm



Honeywell
SIP, HCM

12 - 05/01/09 10:32:00 am

Alarm: IX
ACC: Other - Specified in Notes
CAC: Other - Specify in Notes
Comment: Dale Woody

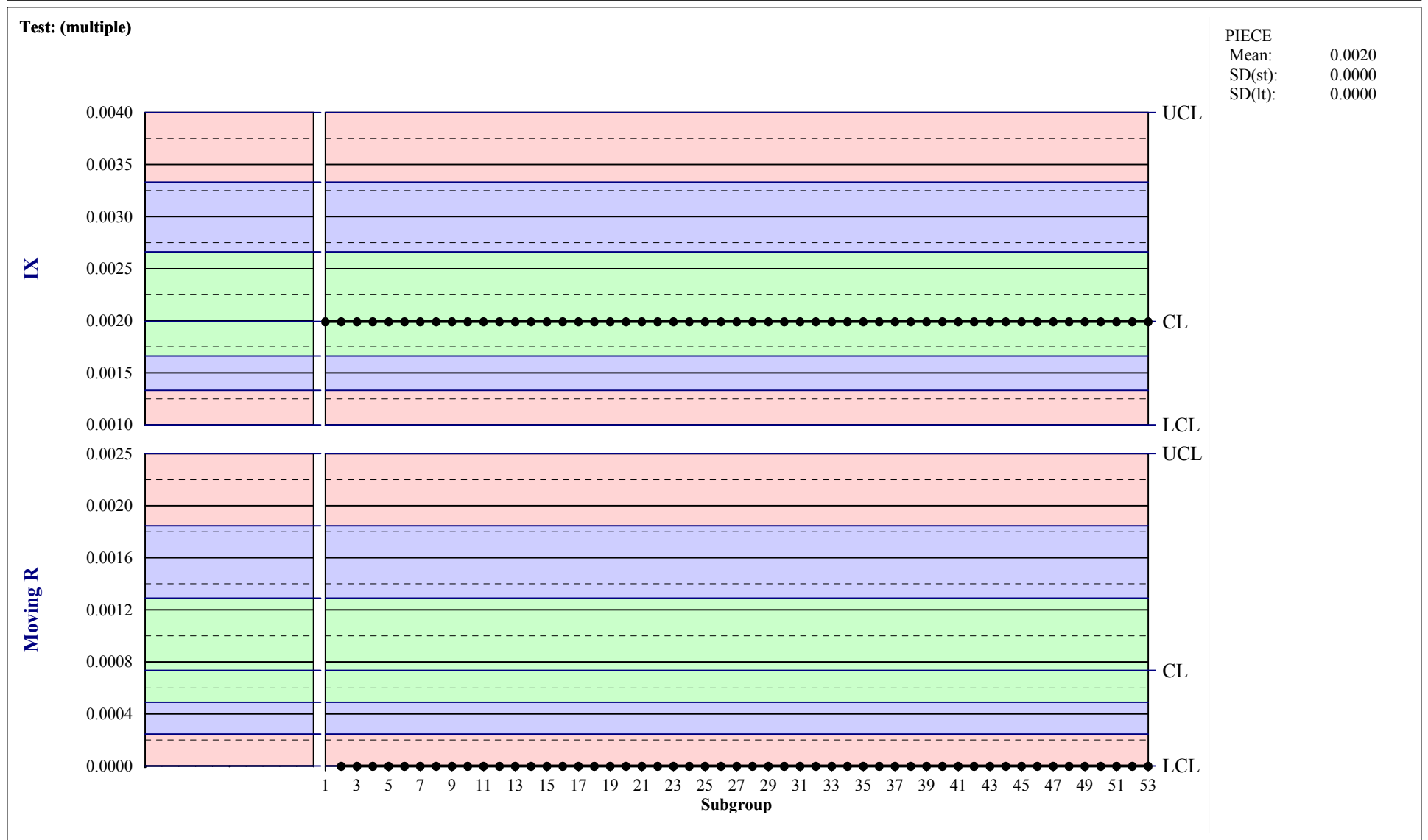
SID= 1241516465
Above Upper Control Limit

05/05/09 10:04:56 am. Graphite crucible and molds need cleaned more thoroughly

Honeywell

SIP, HCM

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083
Lot: Entire Database
Spec. Limits: 083389 / alab_gdms_w_cr_m USL: 0.0200
 090724 / alab_gdms_w_cr_m USL: 0.0200
 091996 / alab_gdms_w_cr_m USL: 0.0200
 095083 / alab_gdms_w_cr_m USL: 0.0200



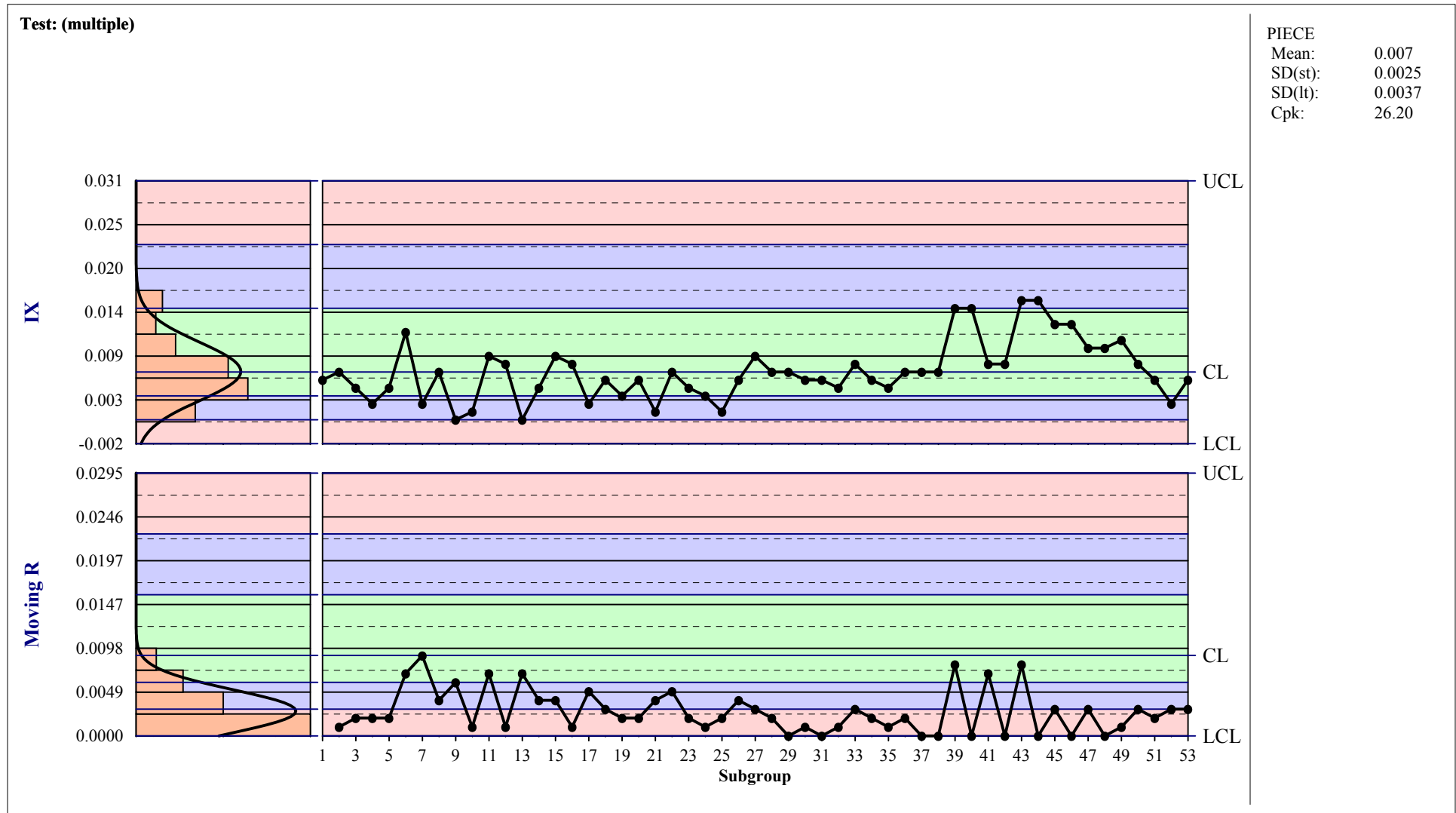
Honeywell

SIP, HCM

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083

Spec. Limits: 083389 / alab_gdms_w_fe_m USL: 0.200
 090724 / alab_gdms_w_fe_m USL: 0.200
 091996 / alab_gdms_w_fe_m USL: 0.200
 094991 / alab_gdms_w_fe_m USL: 0.200
 095083 / alab_gdms_w_fe_m USL: 0.200
 095083 / Fe USL: 0.200

Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm



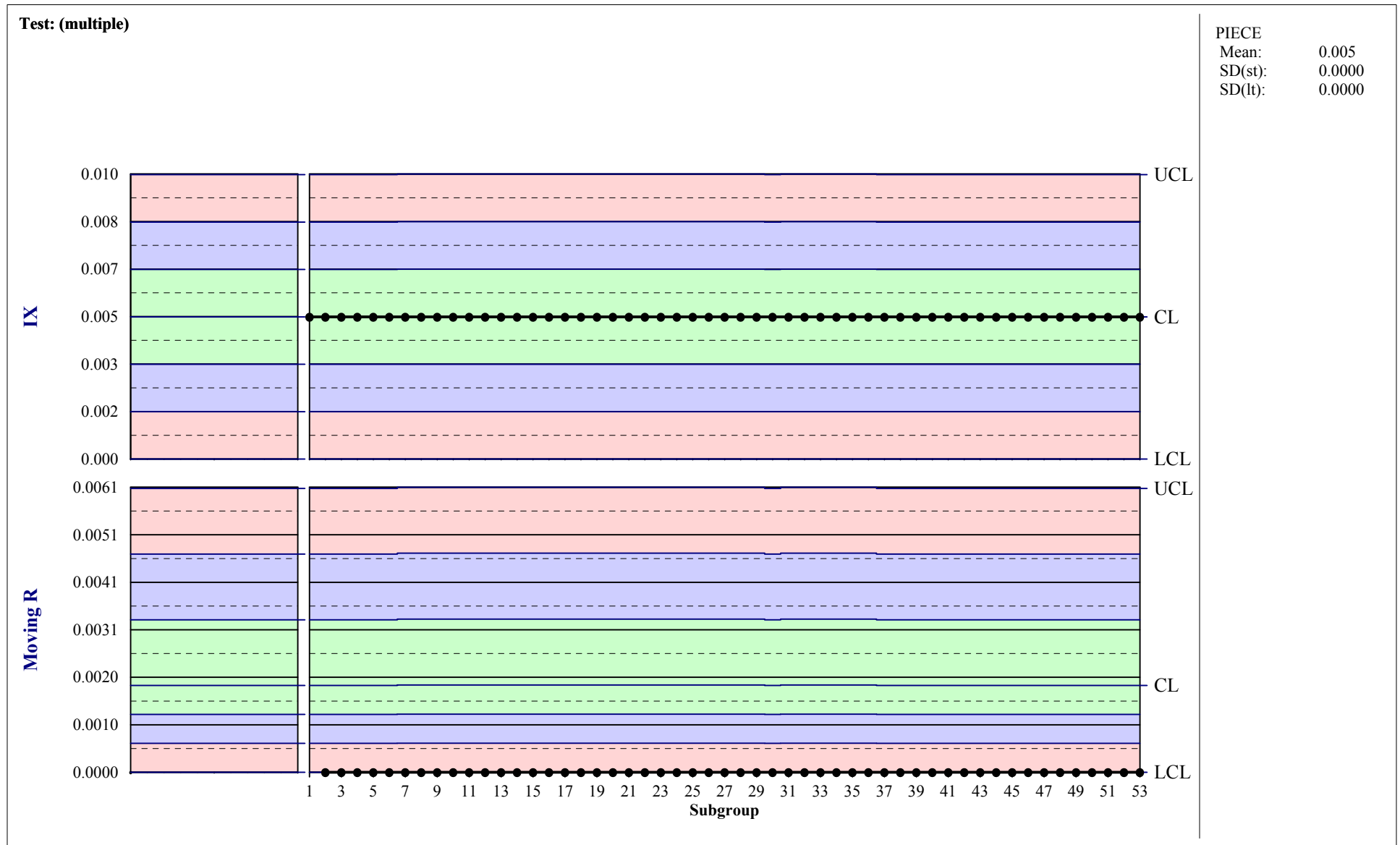
Honeywell

SIP, HCM

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083

Spec. Limits: 083389 / alab_gdms_w_k_m USL: 0.010
 090724 / alab_gdms_w_k_m USL: 0.010
 091996 / alab_gdms_w_k_m USL: 0.010

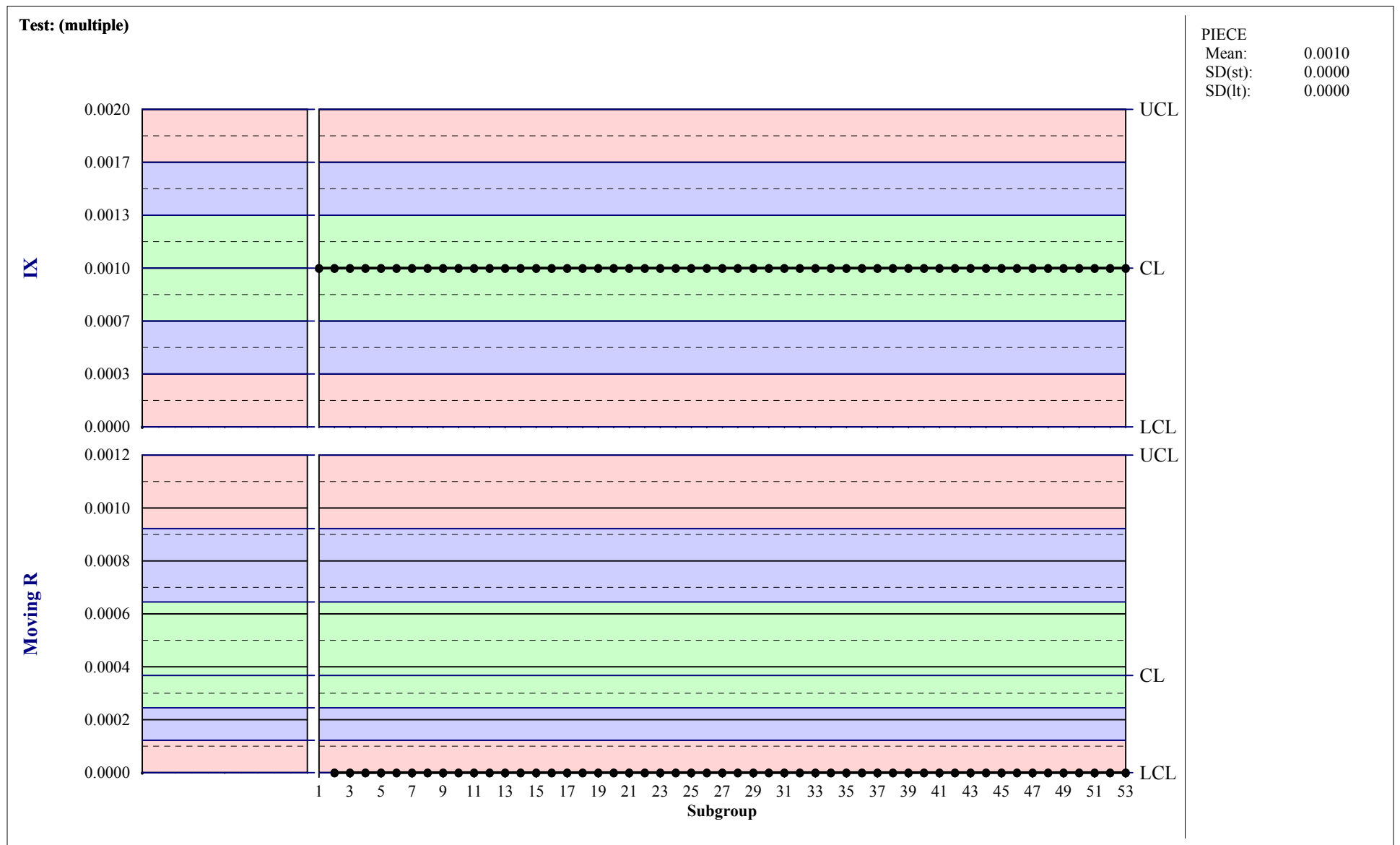
Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm



Honeywell

SIP, HCM

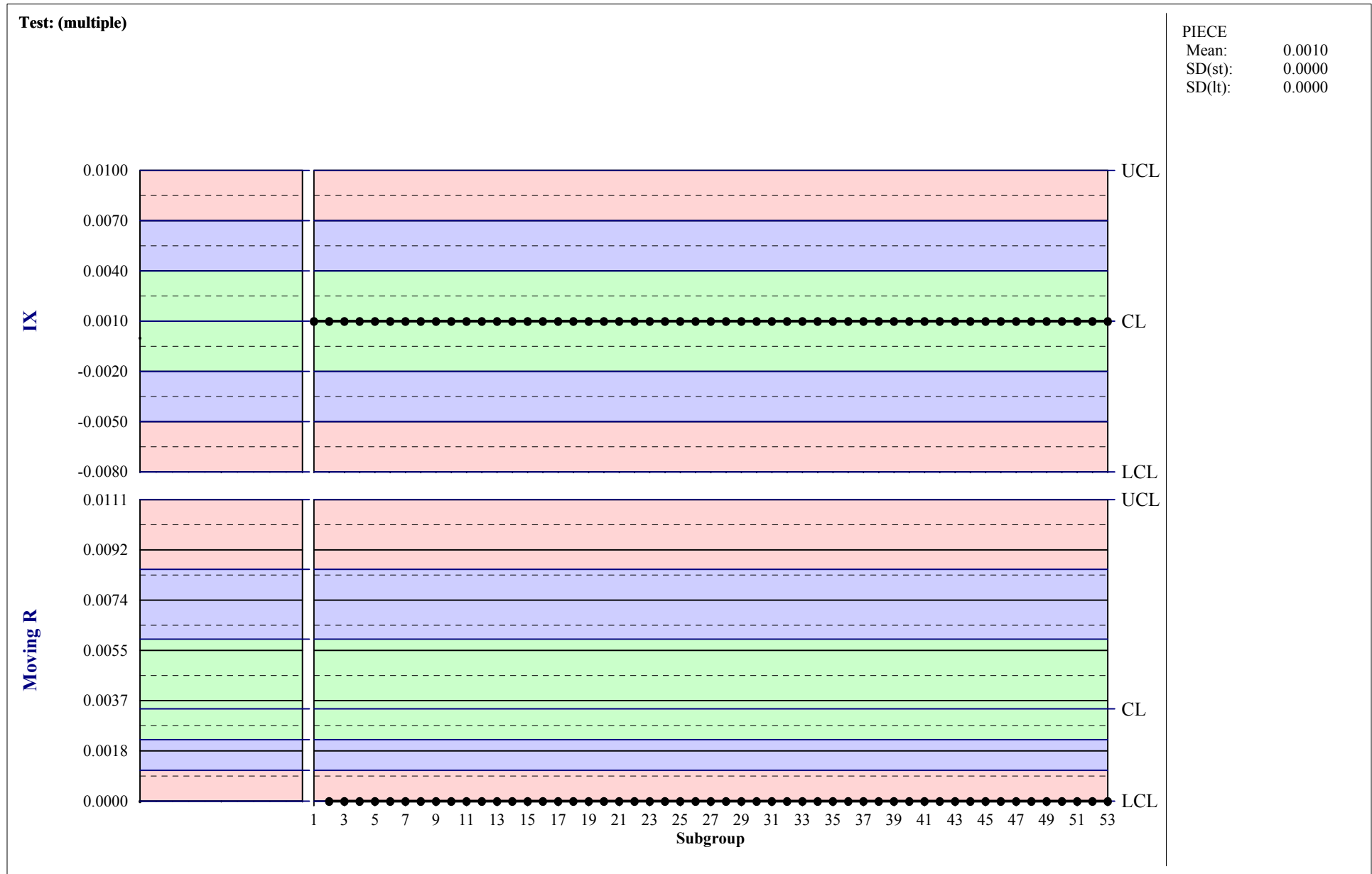
Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083
Lot: Entire Database
Spec. Limits: 083389 / alab_gdms_w_li_m USL: 0.0100
 090724 / alab_gdms_w_li_m USL: 0.0100
 091996 / alab_gdms_w_li_m USL: 0.0100



Honeywell

(Confidential)

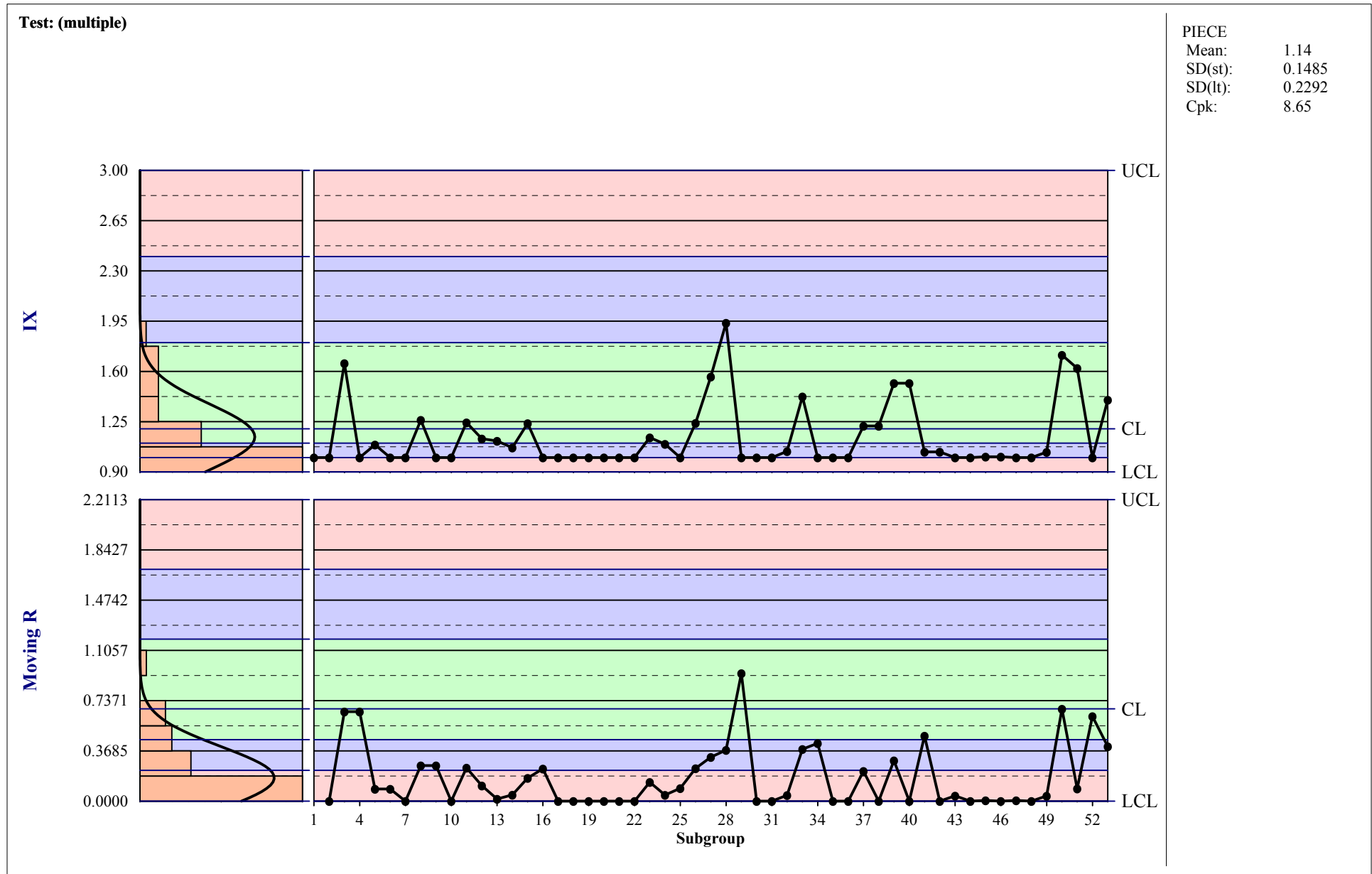
Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083
Test: alab_gdms_w_na_m, Na
Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm



Honeywell

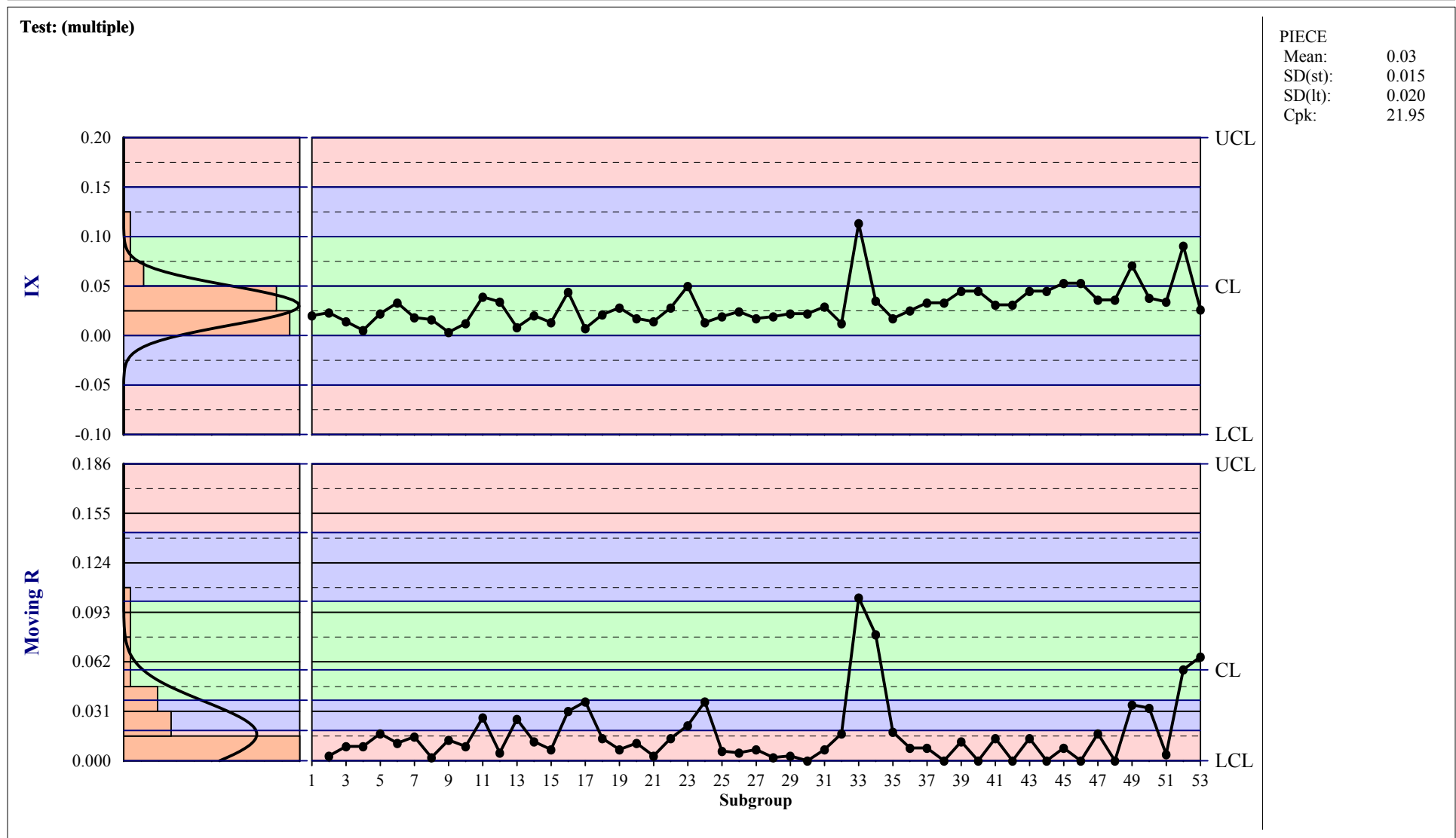
(Confidential)

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083
 Test: alab_gdms_w_o_m, O
 Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm



Honeywell

Part: 082369, 082679, 082903, 083389, 084714, 084715, 090724, 091996, 094991, 095083
Date Range: 04/14/09 02:14:50 pm <=> 06/29/09 03:17:15 pm
Spec. Limits: 083389 / alab_gdms_w_metals_m USL: 1.00
 090724 / alab_gdms_w_metals_m USL: 1.00
 091996 / alab_gdms_w_metals_m USL: 1.00
 094991 / alab_gdms_w_metals_m USL: 1.00
 095083 / alab_gdms_w_metals_m USL: 1.00
 095083 / Metals USL: 1.00



SECTION 2 - TITANIUM

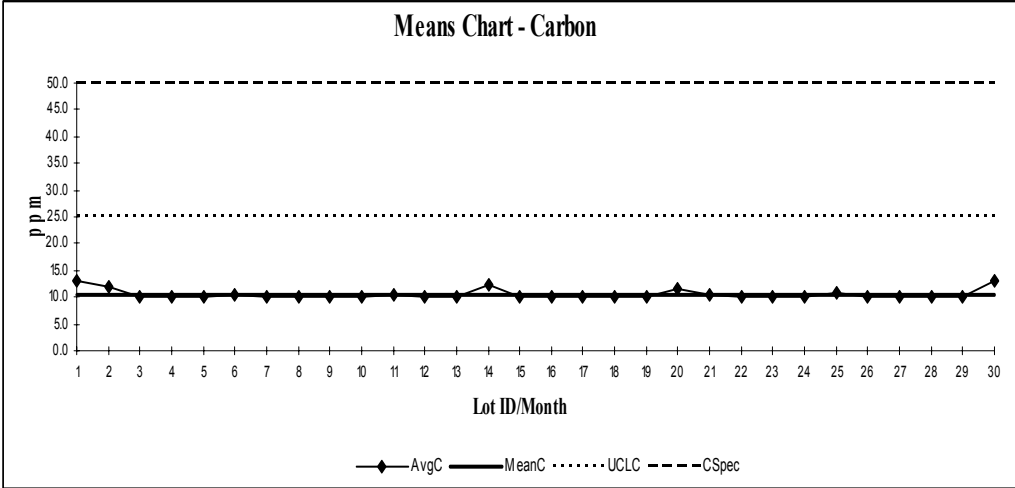
Titanium Trace Elemental Impurities

Configuration	Characteristic	File Name (*.pdf)
49.5 Ti	C	4N5Ti_C
	Ca	4N5Ti_Ca
	Fe	4N5Ti_Fe
	K	4N5Ti_K
	Li	4N5Ti_Li
	Na	4N5Ti_Na
	O	4N5Ti_O
	Tot Metallics	4N5Ti_Tot
	59 Ti	C
Ca		5NTi_Ca
Fe		5NTi_Fe
K		5NTi_K
Li		5NTi_Li
Na		5NTi_Na
O		5NTi_O
Tot Metallics		5NTi_Tot
Advanced Planar		Grain Size

HONEYWELL

Fombell

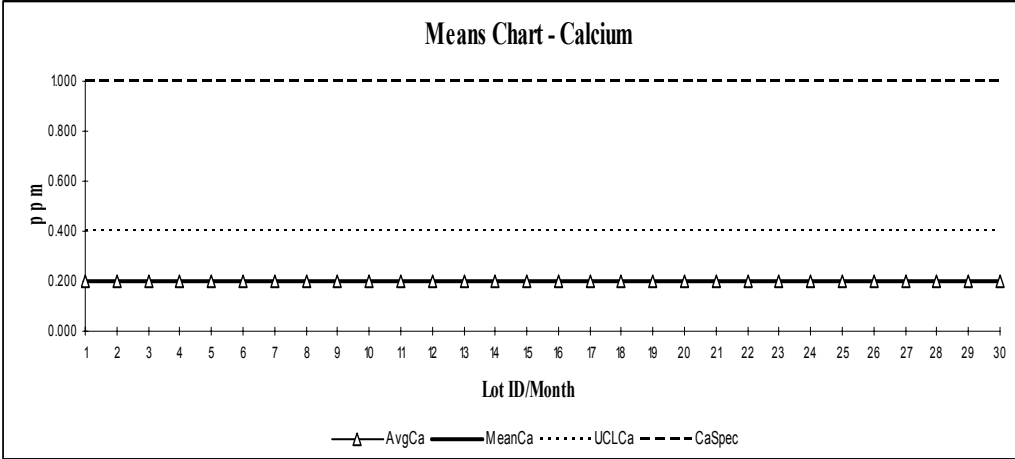
Carbon
Report Period Q209
Mean 10.5
Stdev 0.6
Std Error 0.4
UCL 25.0
Upper Spec 50.0
Cpk 22.27



HONEYWELL

Fombell

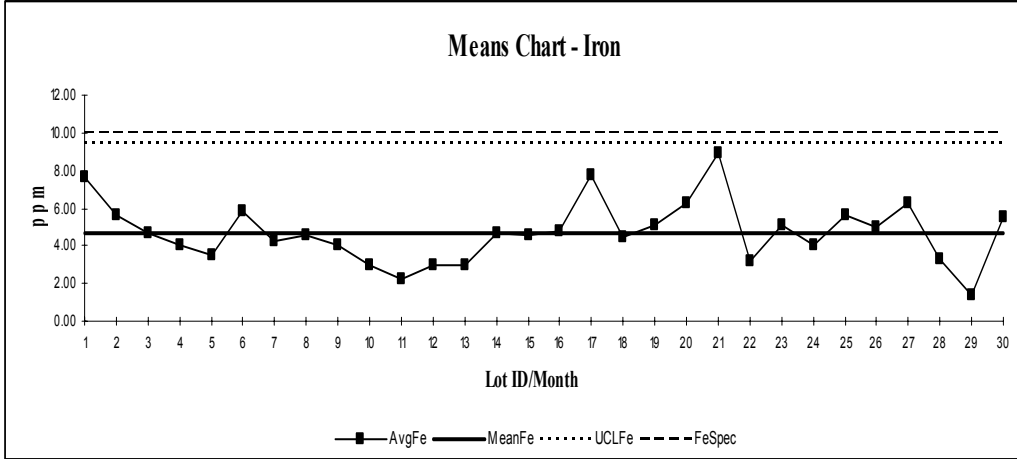
Calcium
Report Period Q209
Mean .200
Stdev .000
Std Error .000
UCL .400
Upper Spec 1.000
Cpk DL



HONEYWELL

Fombell

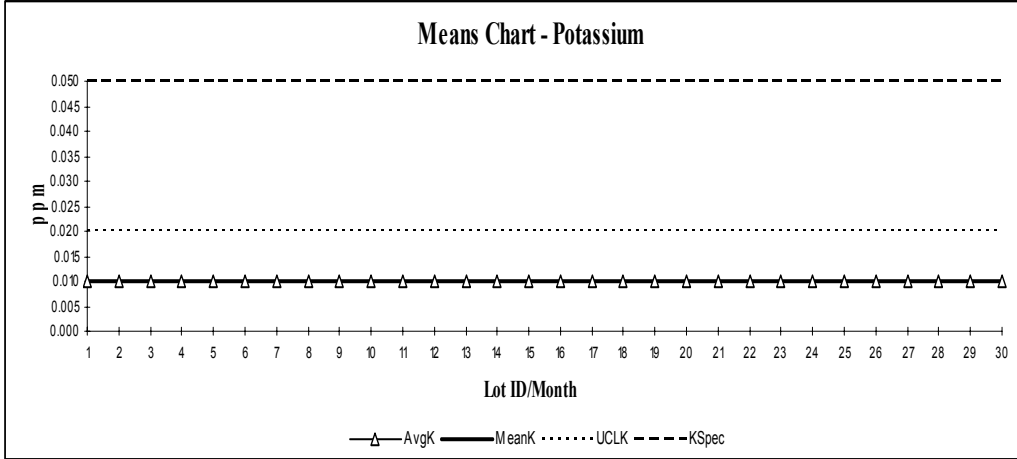
Iron
Report Period Q209
Mean 4.71
Stdev 1.63
Std Error 1.15
UCL 9.50
Upper Spec 10.00
Cpk 1.08



HONEYWELL

Fombell

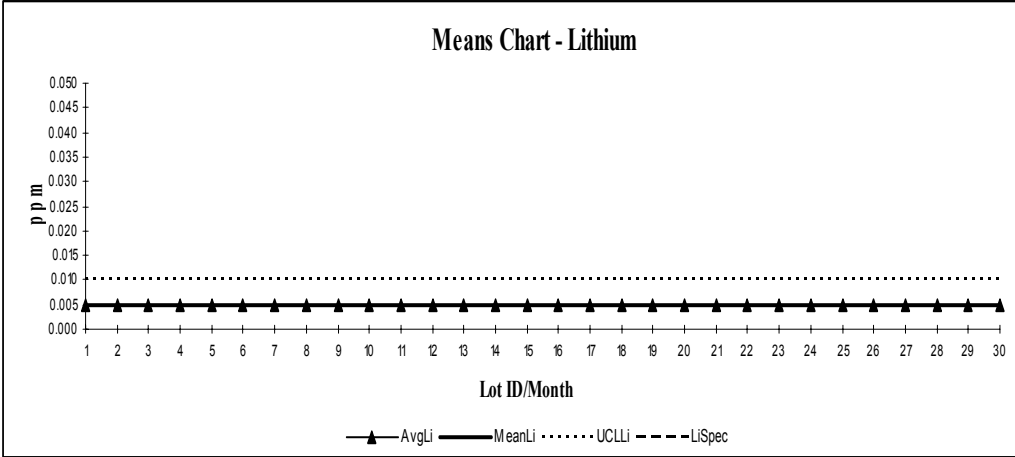
Potassium
Report Period Q209
Mean .010
Stdev .000
Std Error .000
UCL .020
Upper Spec .050
Cpk DL



HONEYWELL

Fombell

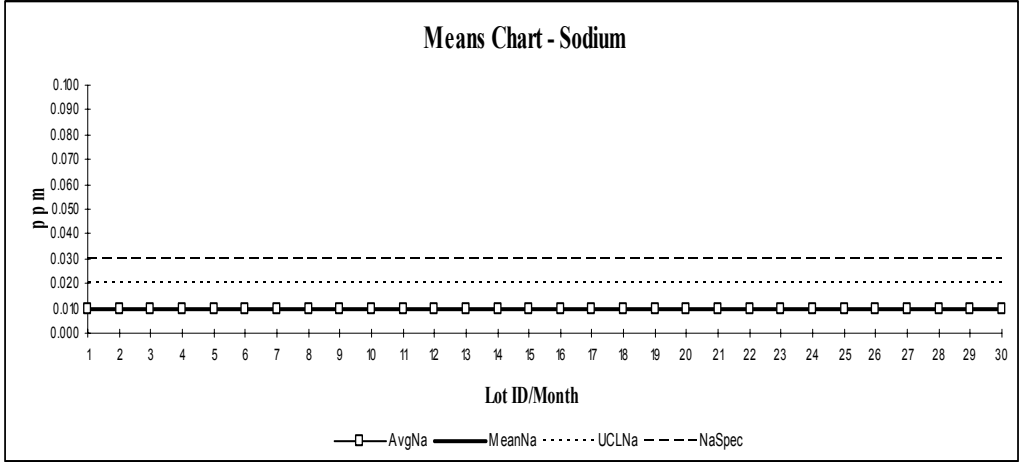
Lithium
Report Period Q209
Mean 0.005
Stdev 0.000
Std Error 0.000
UCL 0.010
Upper Spec 0.500
Cpk DL



HONEYWELL

Fombell

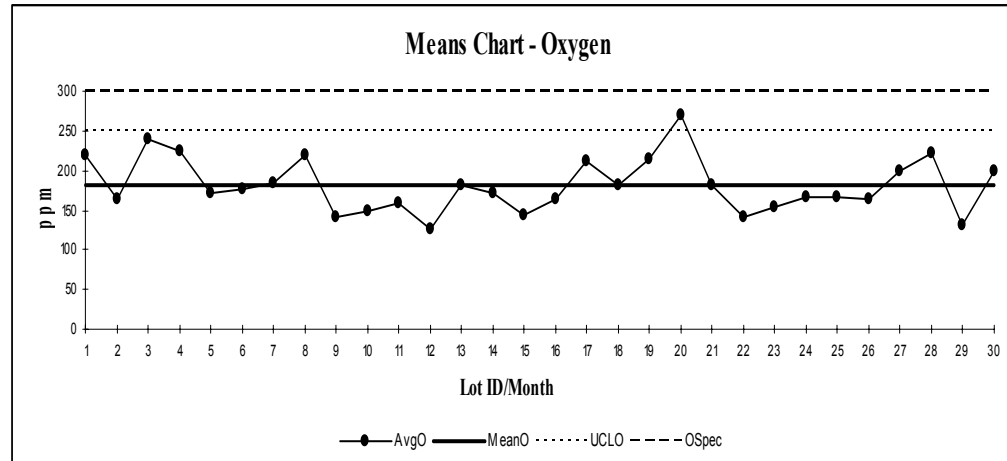
Sodium
Report Period Q209
Mean .010
Stdev .000
Std Error .000
UCL .020
Upper Spec .030
Cpk DL



HONEYWELL

Fombell

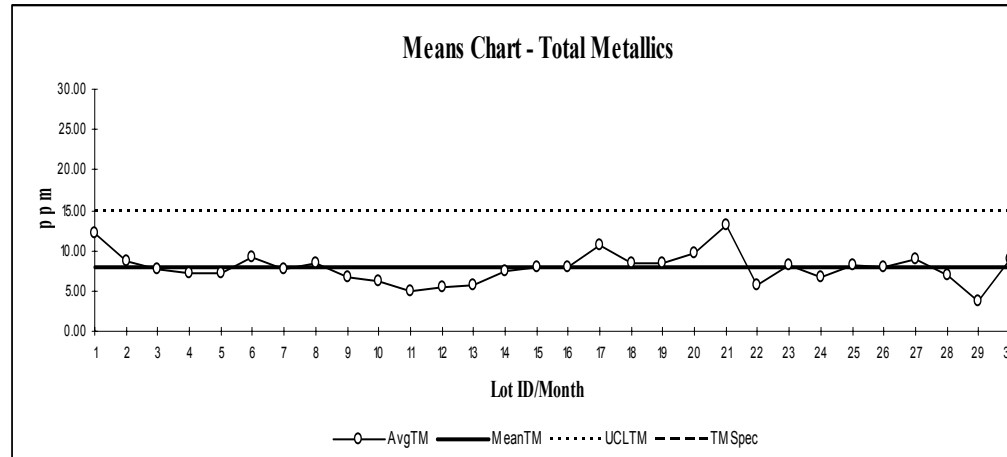
Oxygen
Report Period Q209
Mean 181
Stdev 22.9
Std Error 16.2
UCL 250
Upper Spec 300
Cpk 1.73



HONEYWELL

Fombell

Total Metallics
Report Period Q209
Mean 7.86
Stdev 1.59
Std Error 1.12
UCL 15.00
Upper Spec 50.00
Cpk 8.84

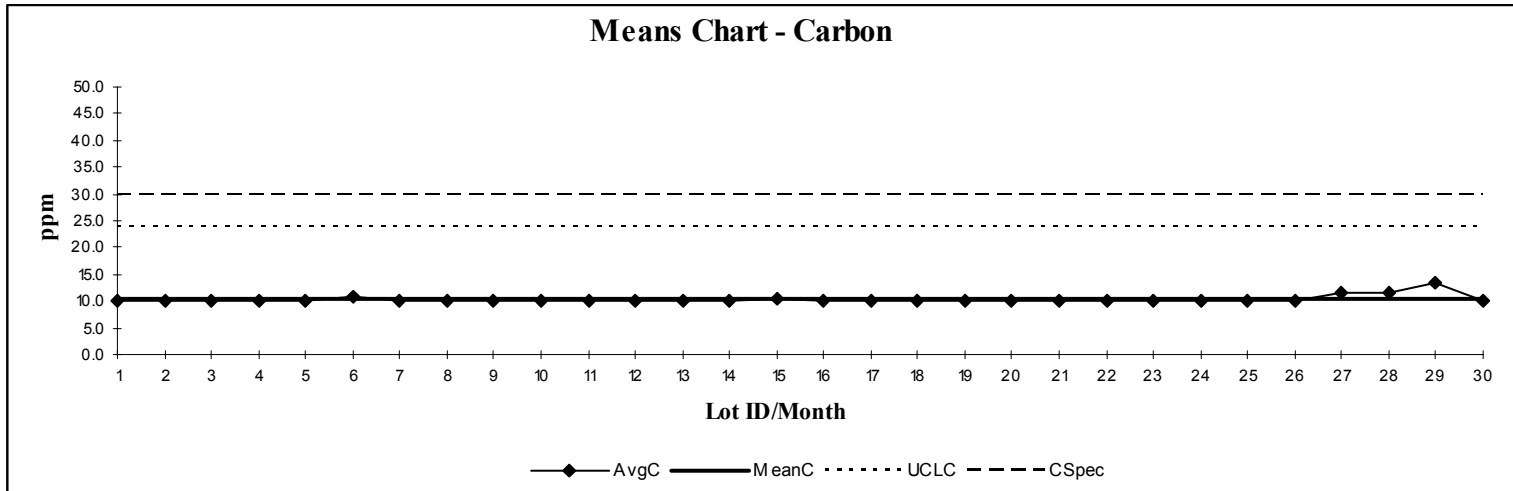


HONEYWELL

Fombell

Means Chart - Carbon

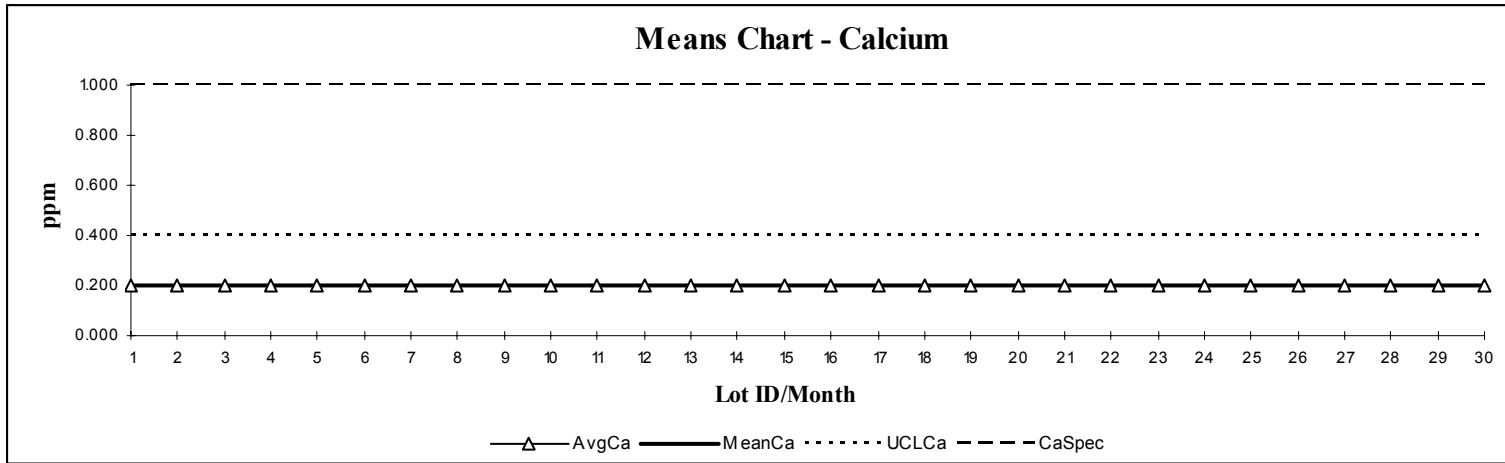
Carbon
Report Period Q109
Mean 10.3
Stdev 0.8
Std Error 0.6
UCL 24.0
Upper Spec 30.0
Cpk 8.06



HONEYWELL

Fombell

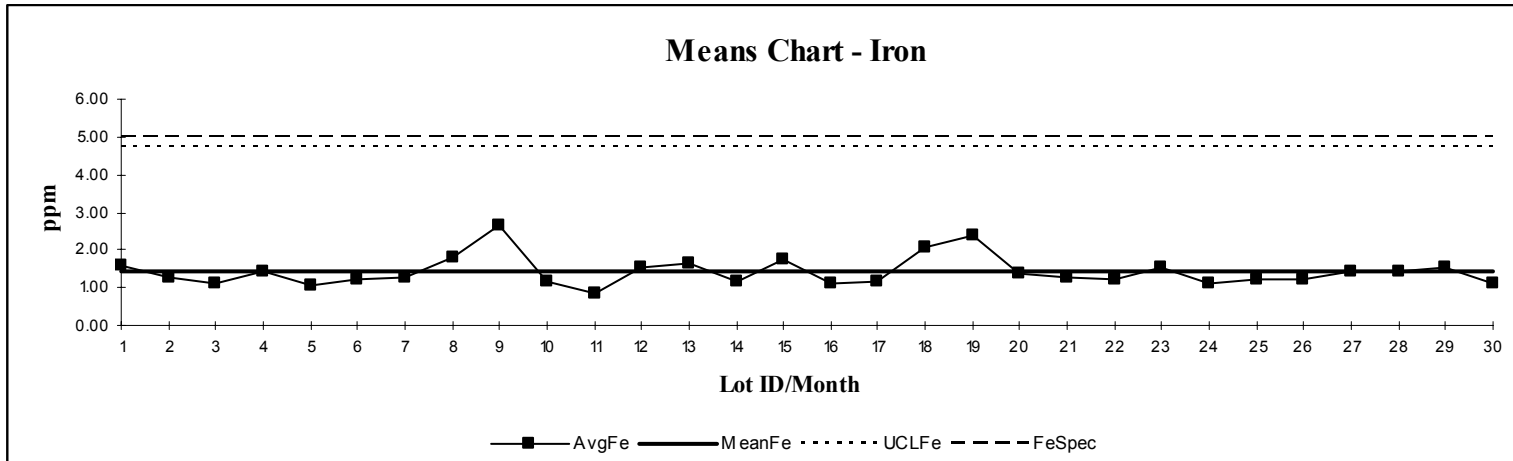
Calcium
Report Period Q209
Mean .200
Stdev .000
Std Error .000
UCL .400
Upper Spec 1.000
Cpk DL



HONEYWELL

Fombell

Iron
Report Period Q109
Mean 1.42
Stdev 0.76
Std Error 0.54
UCL 4.70
Upper Spec 5.00
Cpk 1.57

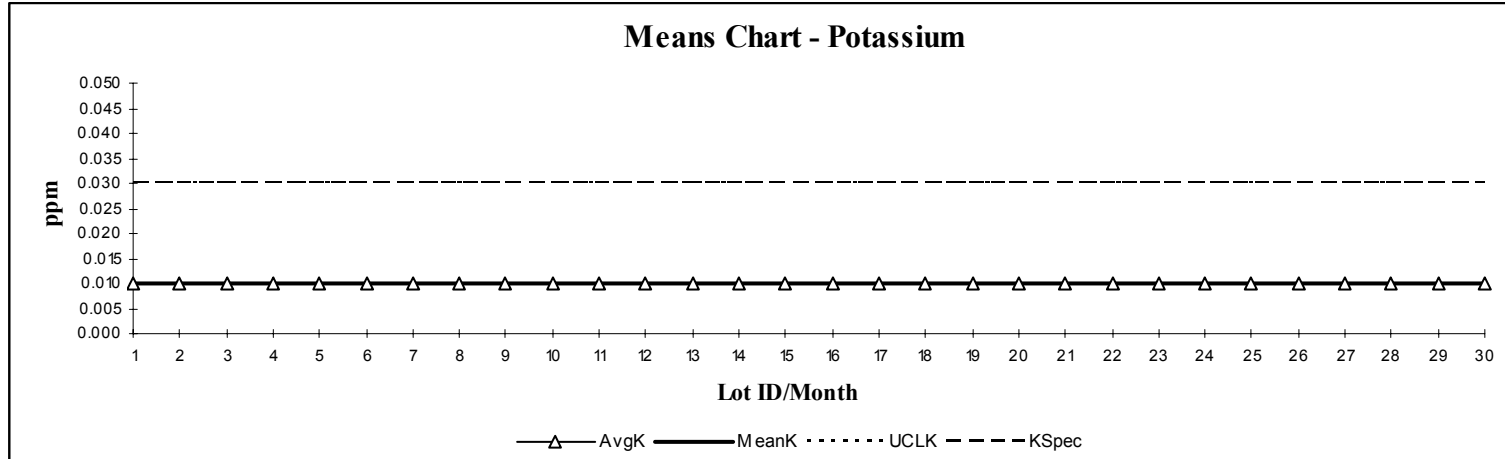


HONEYWELL

Fombell

Means Chart - Potassium

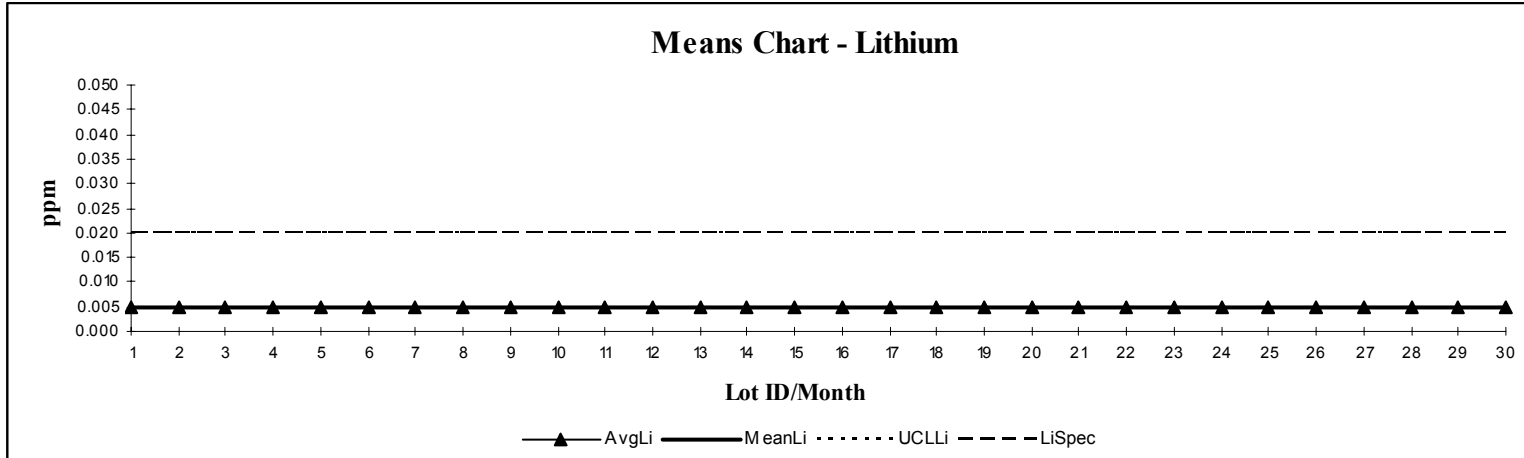
Potassium
Report Period Q109
Mean .010
Stdev .000
Std Error .000
UCL .030
Upper Spec .030
Cpk DL



HONEYWELL

Fombell

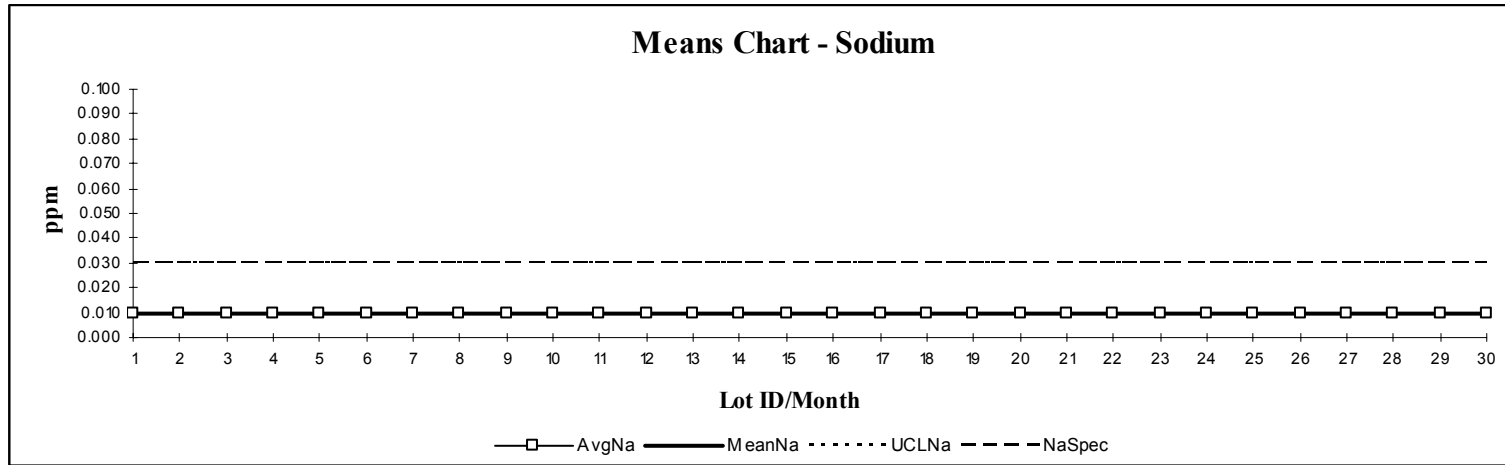
Lithium
Report Period Q109
Mean 0.005
Stdev 0.000
Std Error 0.000
UCL 0.020
Upper Spec 0.020
Cpk DL



HONEYWELL

Fombell

Means Chart - Sodium

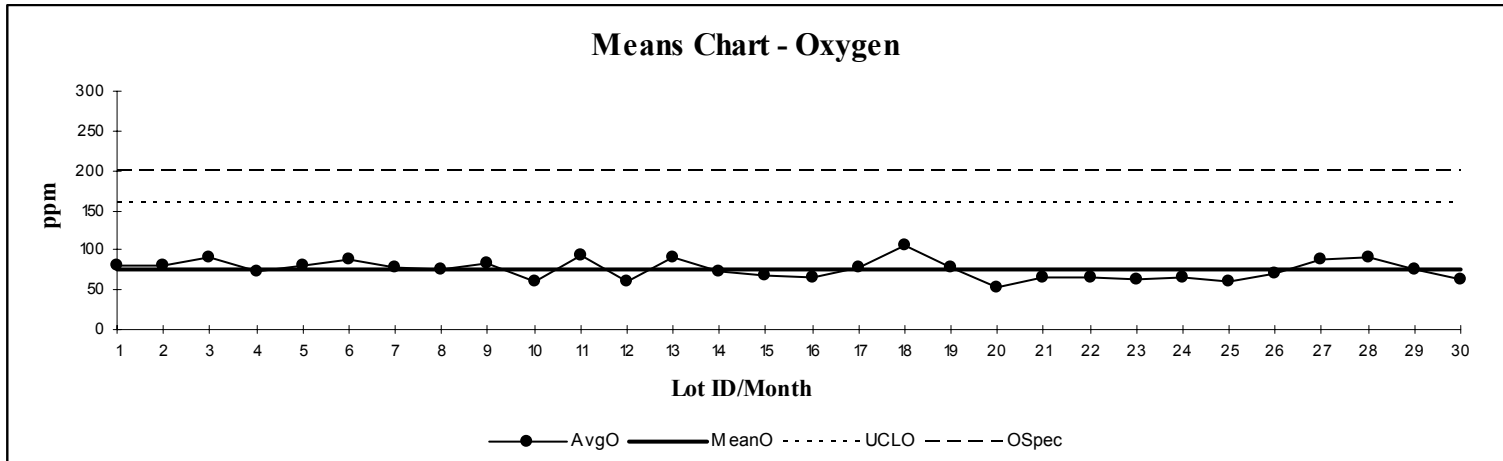


Sodium
Report Period Q109
Mean .010
Stdev .000
Std Error .000
UCL .030
Upper Spec .030
Cpk DL

HONEYWELL

Fombell

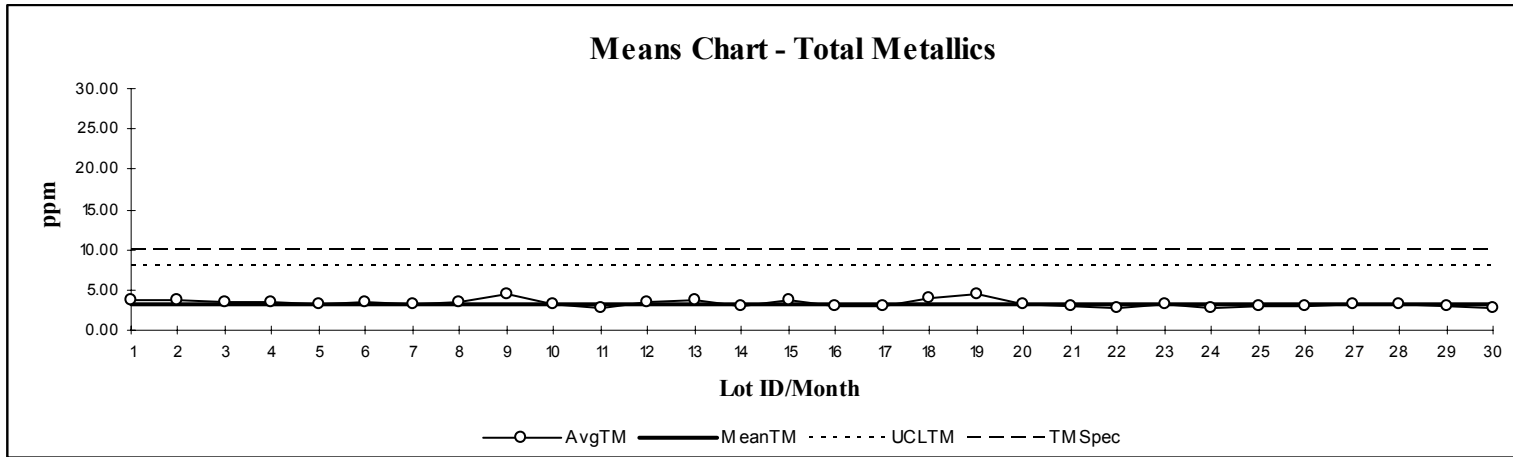
Oxygen
Report Period Q109
Mean 75
Stdev 12.8
Std Error 9.1
UCL 160
Upper Spec 200
Cpk 3.24



HONEYWELL

Fombell

Total Metallics
Report Period Q109
Mean 3.33
Stdev .55
Std Error 0.39
UCL 8.00
Upper Spec 10.00
Cpk 4.07



HONEYWELL

Fombell

<20 Micron GS SQC

Mean	12.60
Std Dev	1.76
USL	20
Cp	1.89
Cpk	1.40
UCL	17

