

External Quality Assessment Scheme

## Haemoxymeters Round 1, 2023

### Specimens

Please find enclosed 2 liquid samples S001 and S002, each 1.2 mL. The samples are prepared from purified bovine haemoglobin solutions without adding any dyes or preservatives.

An own sample set is required for each analyser.

### Caution

Although the samples are not derived from human blood they must be handled with the same care as patient samples, i.e. as potential transmitters of serious diseases.

### Examinations

Total Hb: ctHb

O<sub>2</sub> saturation of Hb: sO<sub>2</sub>

Fractions of Hb-derivatives: FO<sub>2</sub>Hb, FCOHb and FMetHb

### Storage and use

After arrival the samples should be stored at +2...8 °C protected from light. Do not freeze the samples. The samples are ready for use. The samples should be analysed immediately after removal from refrigeration. Before use, gently but thoroughly invert the ampoule to mix the solution (no foam should be formed). Then tap the ampoule to restore the liquid to the bottom of the ampoule. Carefully snap off the neck of the ampoule but beware of sharp glass and immediately analyse the specimen.

With the Radiometer ABL instruments the samples should be analysed with the following settings because the sample matrix is non-human: Measuring mode should be: 195/250µL. i.e. Macro method. It is important not to use neither Cal, Verification nor Non-Radiometer QC, because of the matrix being bovine blood. Some ABL instruments can give oximetry error messages due to the non-human material in these samples. Therefore, the instrument's setup must be adjusted so that the results with a question mark ("?") are released in order to avoid errors caused by the bovine origin of the sample.

Before analysing the samples, please change also the settings for "reporting" to be wide enough to cover the measured values (maximum to observe the results) and not only the test values. It is necessary to change these measurement settings for every component (analyte). Please remember to set them back after analysing these EQA samples. The error message code 0581 means that the analysed material is different from human samples. Despite error messages please send your results.

### Result reporting

Please enter the results and methods via LabScala (www.labscala.com). If you cannot find your instrument or reagent from the registry, please contact the EQA Coordinator.

S001



S002



2023-03-20

### INSTRUCTIONS

Product no. 2150  
LQ750923011-012/FR

If the kit is incomplete or contains damaged specimens, please report immediately to [info@labquality.fi](mailto:info@labquality.fi).

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The results should be reported no later than **April 7, 2023.**

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### Inquiries

EQA Coordinator  
Anna-Riitta Vanhanen  
[anna-riitta.vanhanen@labquality.fi](mailto:anna-riitta.vanhanen@labquality.fi)

### Labquality Oy

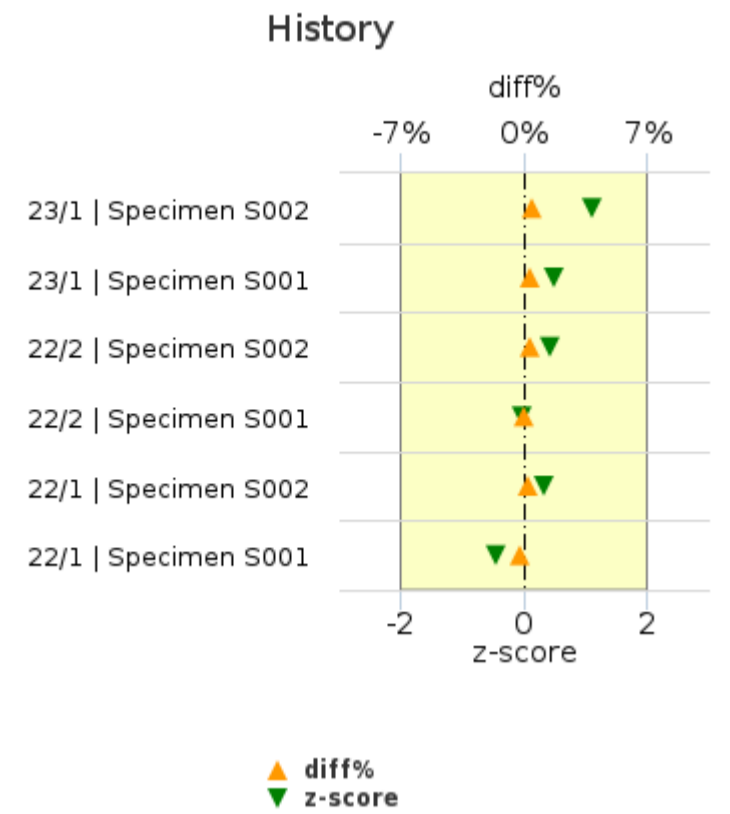
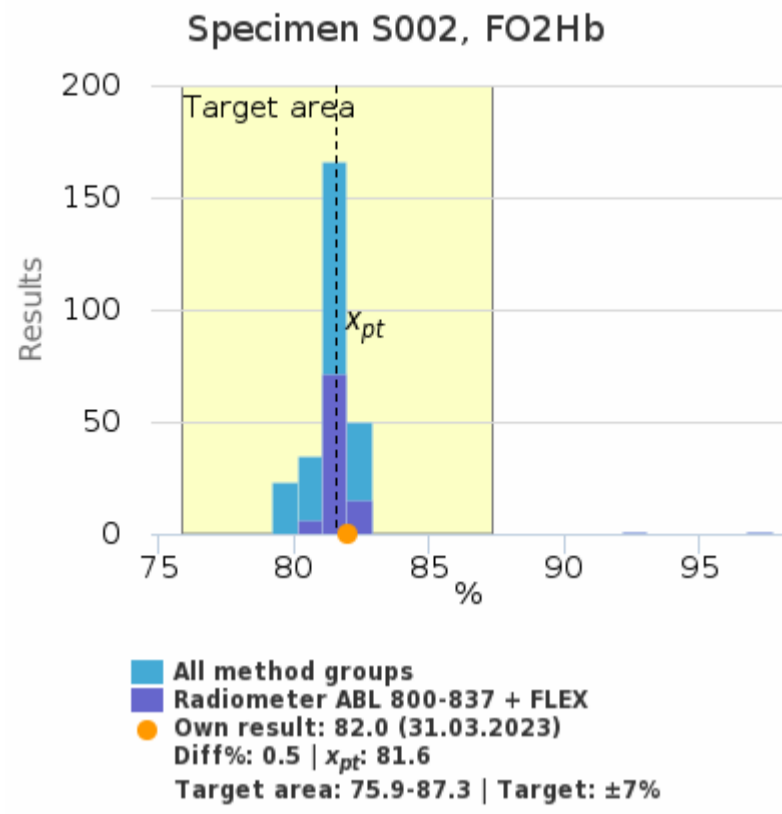
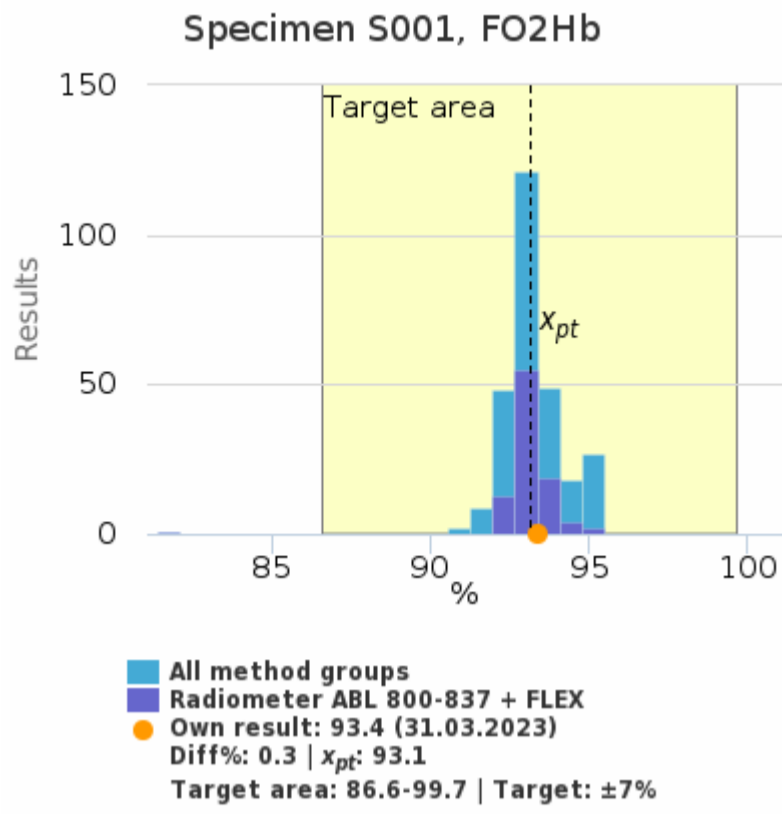
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[www.labquality.com](http://www.labquality.com)



FO2Hb | ABL800

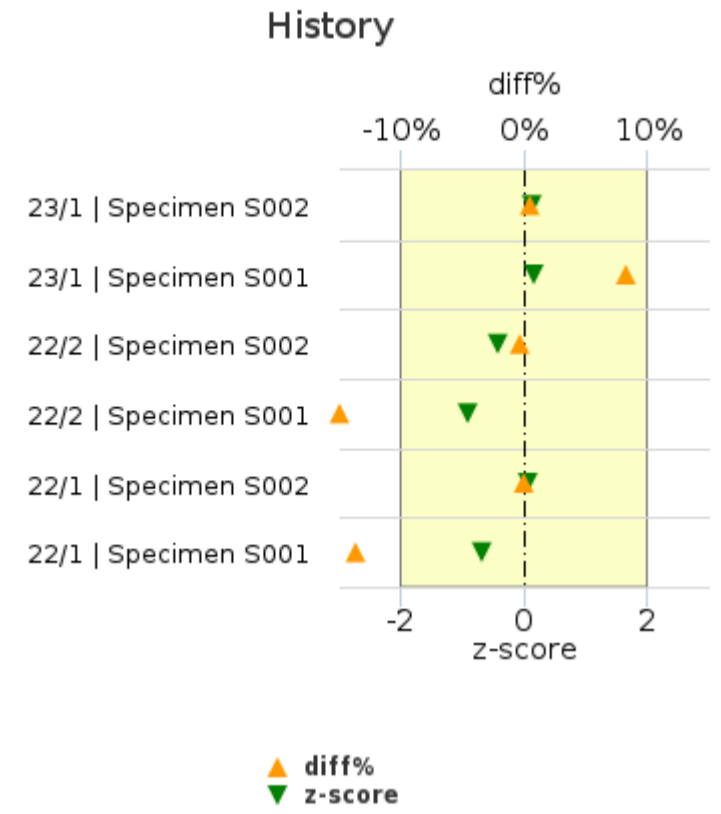
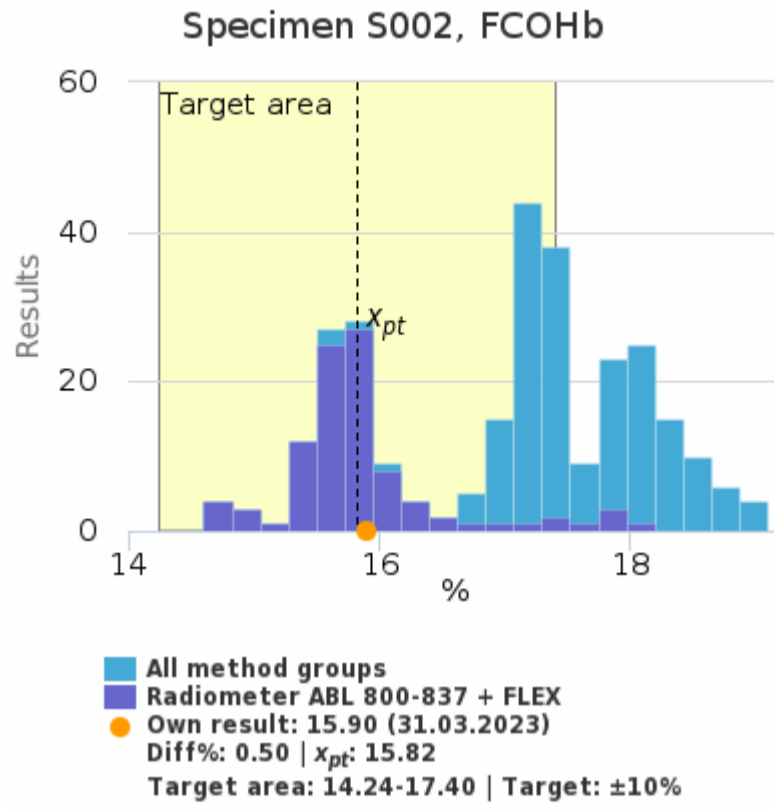
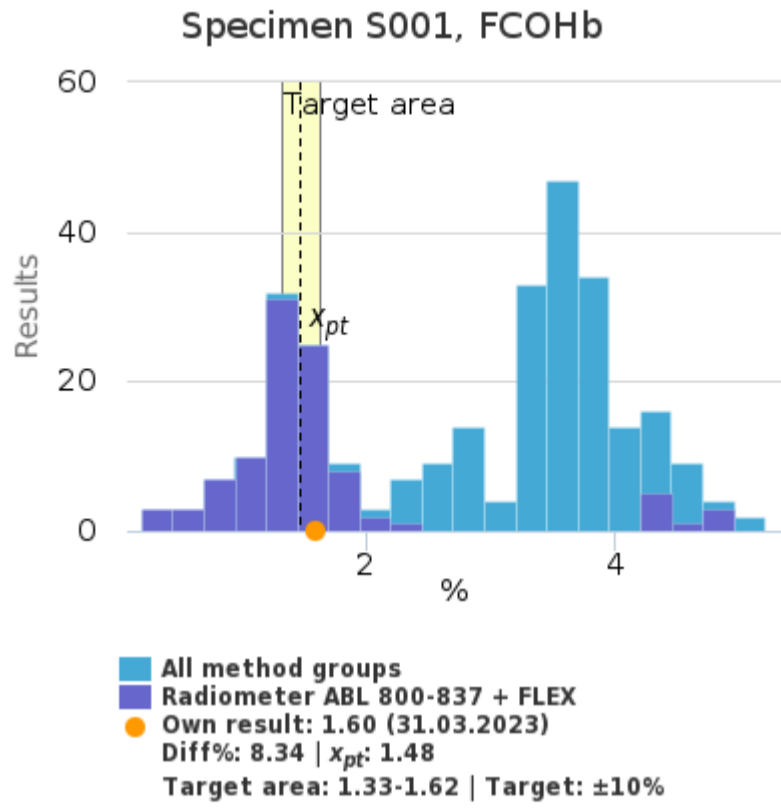


	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	93.1 %	0.5	<0.1	0.6	94
All methods	93.2 %	0.9	<0.1	0.9	275

	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	81.6 %	0.4	<0.1	0.4	94
All methods	81.4 %	0.7	<0.1	0.9	276

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	81.6	82.0	0.5%	1.10
23/1	Specimen S001	93.1	93.4	0.3%	0.49
22/2	Specimen S002	56.6	56.7	0.3%	0.43
22/2	Specimen S001	93.2	93.2	0.0%	-0.03
22/1	Specimen S002	55.8	55.9	0.2%	0.33
22/1	Specimen S001	94.7	94.5	-0.2%	-0.45

FCOHb | ABL800

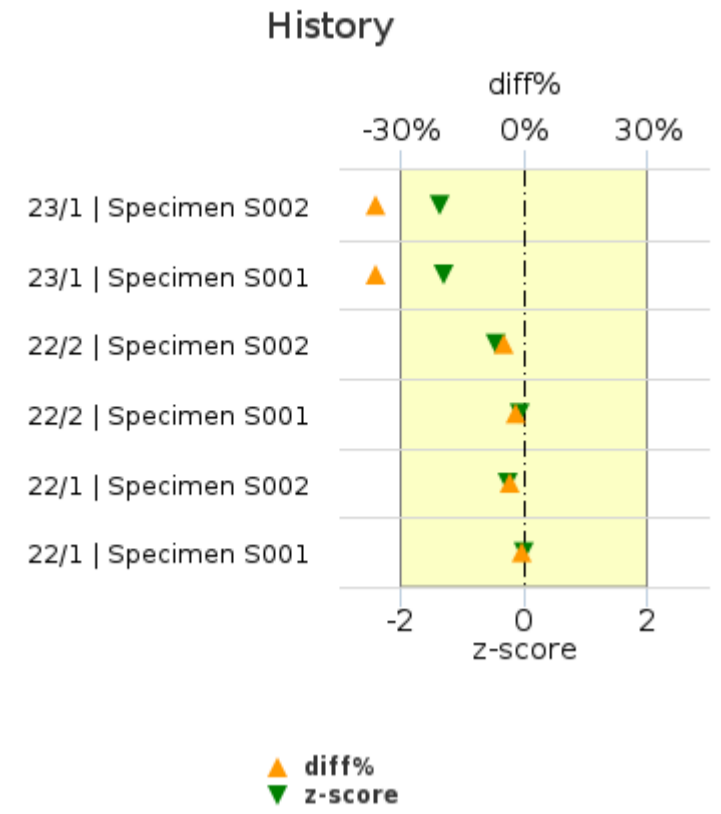
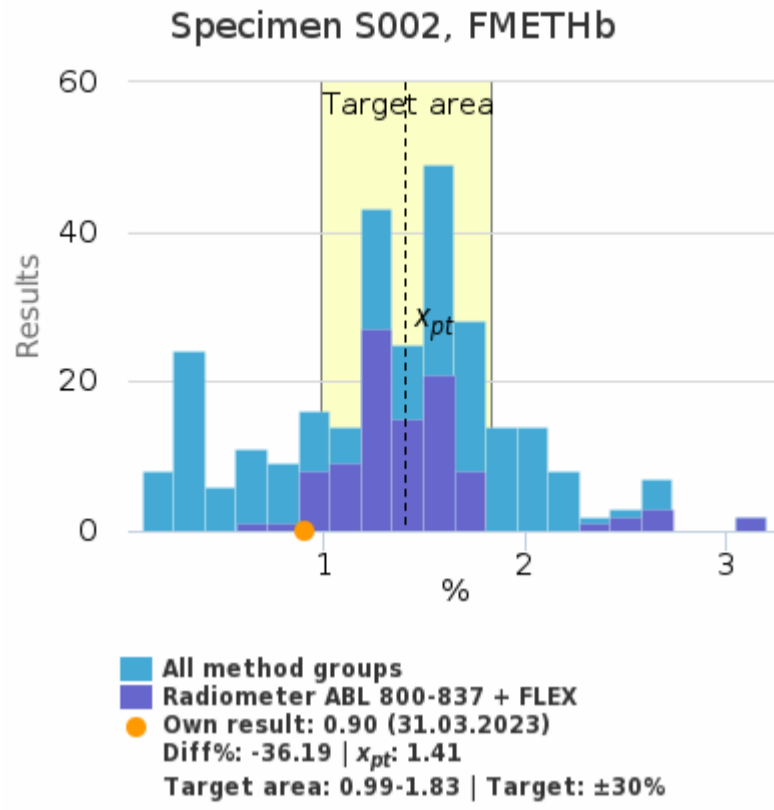
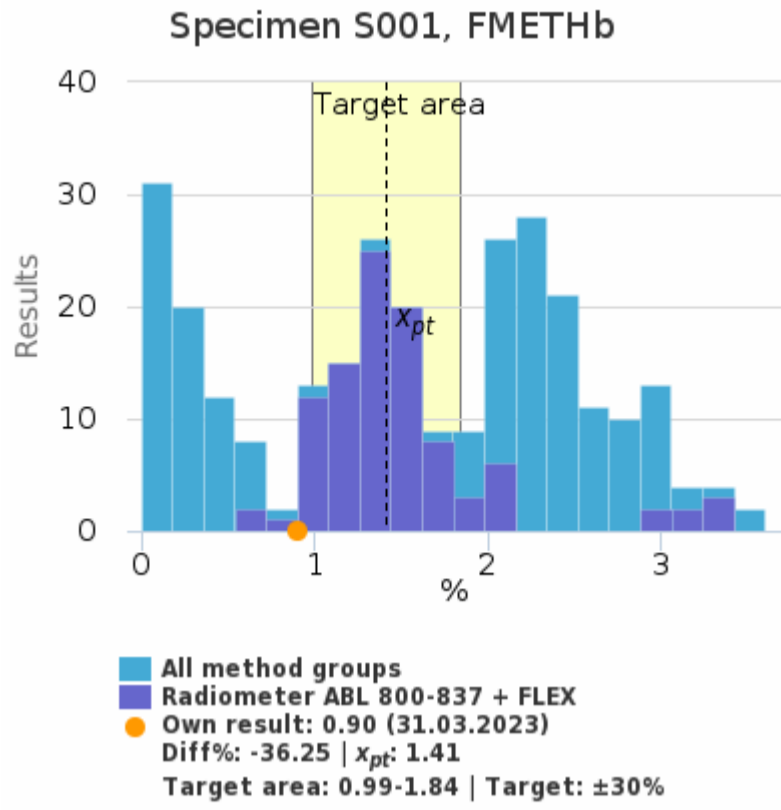


	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	1.48 %	0.76	0.08	51.3	99
All methods	2.85 %	1.18	0.07	41.3	285

	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	15.82 %	0.60	0.06	3.8	96
All methods	17.02 %	1.04	0.06	6.1	284

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	15.82	15.90	0.50%	0.13
23/1	Specimen S001	1.48	1.60	8.34%	0.16
22/2	Specimen S002	42.55	42.40	-0.34%	-0.42
22/2	Specimen S001	1.54	0.80	-48.15%	-0.90
22/1	Specimen S002	43.28	43.30	0.05%	0.06
22/1	Specimen S001	2.78	2.40	-13.56%	-0.67

FMETHb | ABL800

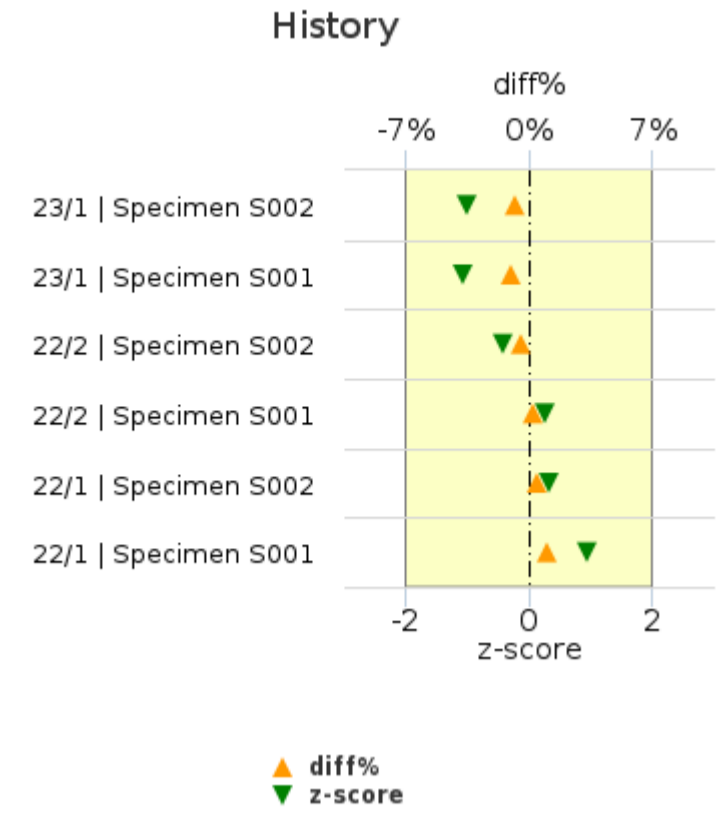
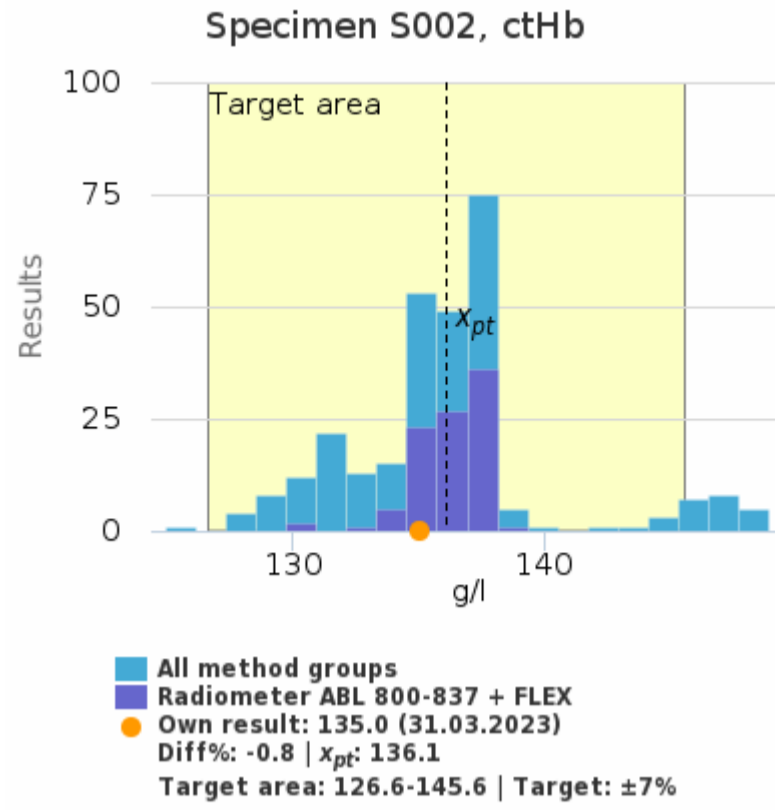
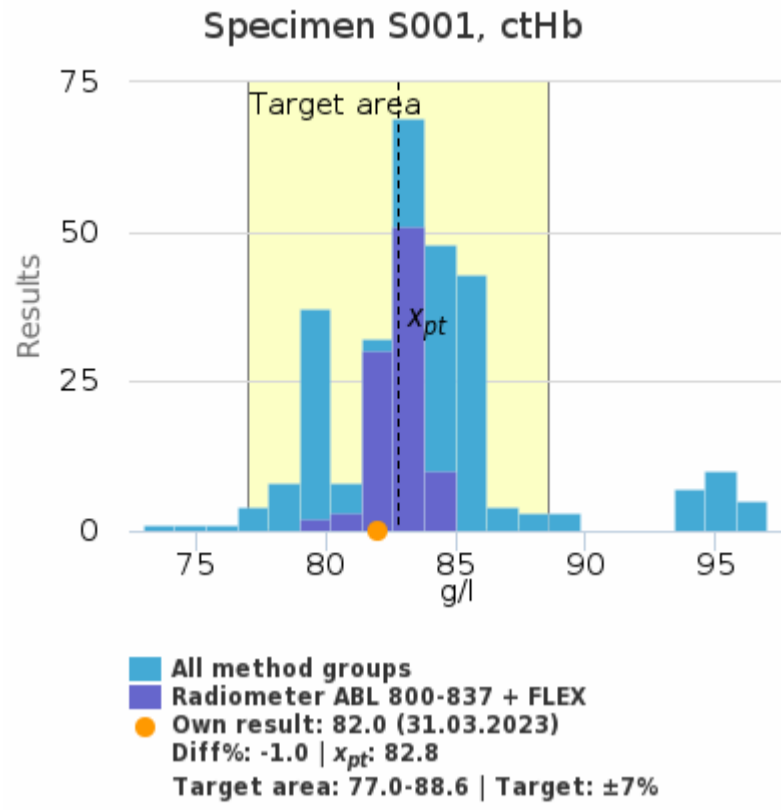


	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	1.41 %	0.39	0.04	27.8	99
All methods	1.55 %	0.96	0.06	61.7	284

	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	1.41 %	0.38	0.04	26.9	98
All methods	1.34 %	0.58	0.03	43.4	283

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	1.41	0.90	-36.19%	-1.35
23/1	Specimen S001	1.41	0.90	-36.25%	-1.31
22/2	Specimen S002	2.52	2.40	-4.75%	-0.47
22/2	Specimen S001	1.43	1.40	-2.11%	-0.06
22/1	Specimen S002	2.48	2.40	-3.33%	-0.26
22/1	Specimen S001	1.51	1.50	-0.36%	-0.01

ctHb | ABL800

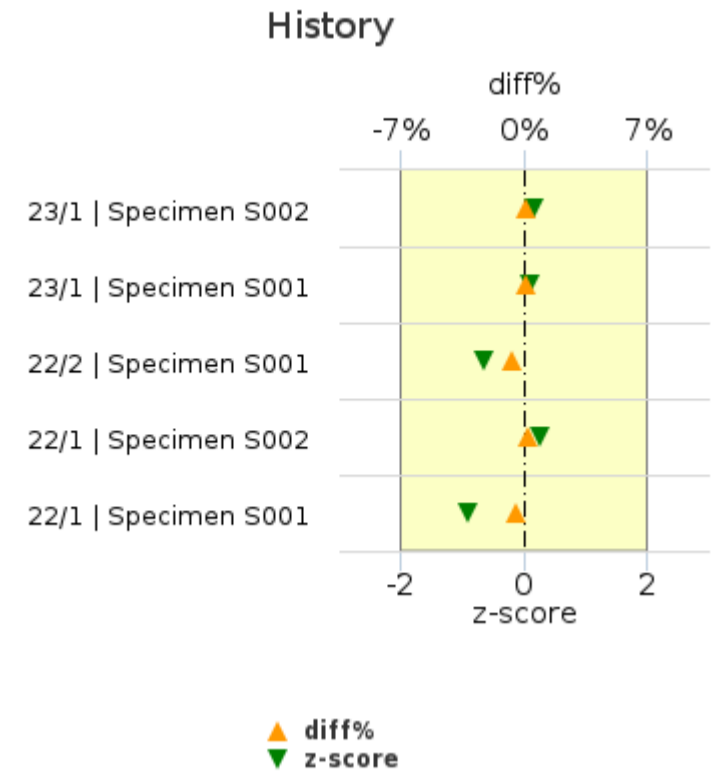
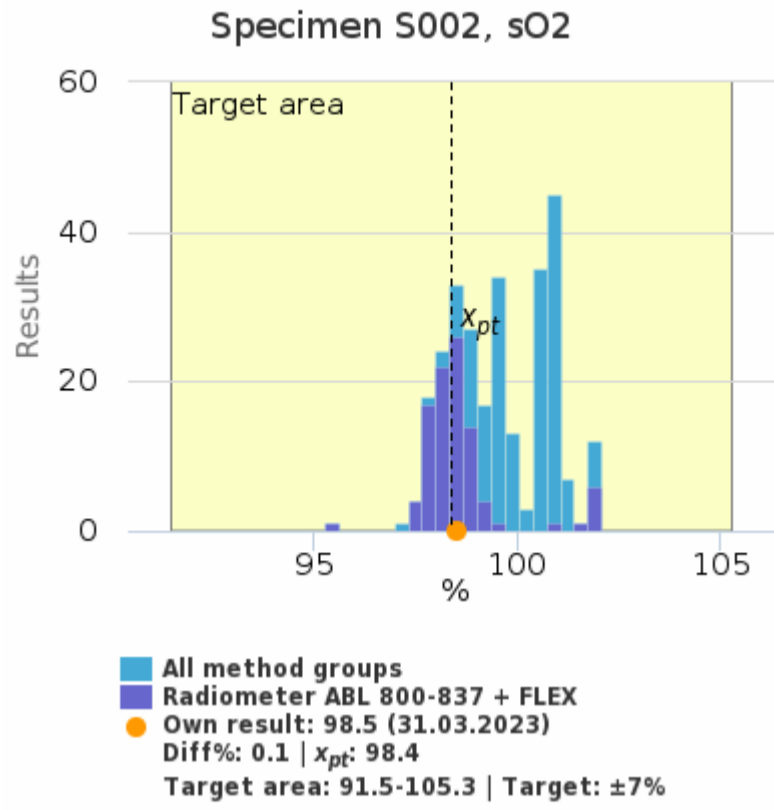
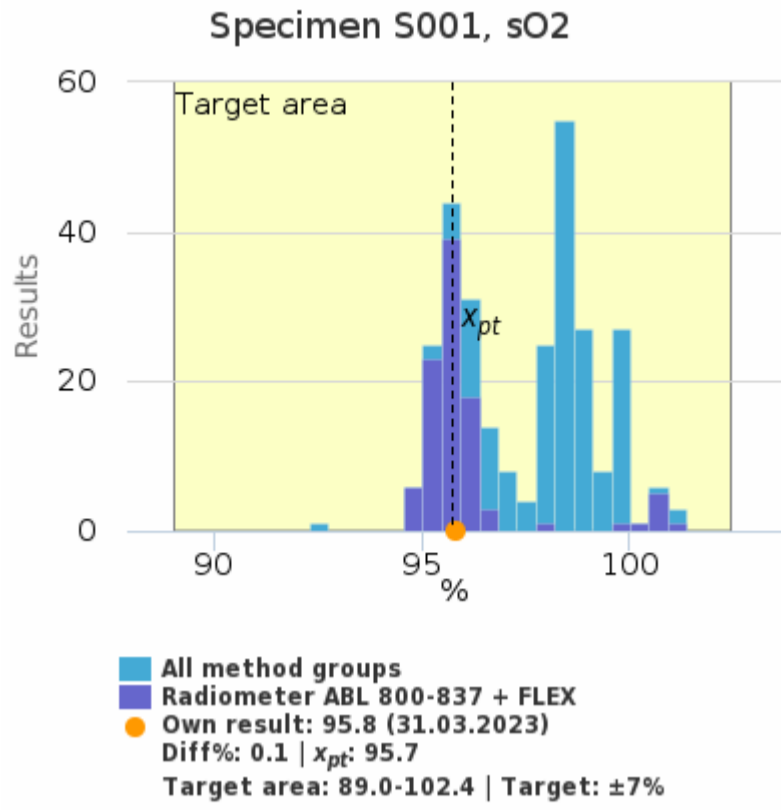


	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	82.8 g/l	0.7	<0.1	0.9	96
All methods	83.5 g/l	3.7	0.2	4.5	284

	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	136.1 g/l	1.1	0.1	0.8	95
All methods	135.8 g/l	3.9	0.2	2.9	283

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	136.1	135.0	-0.8%	-1.01
23/1	Specimen S001	82.8	82.0	-1.0%	-1.08
22/2	Specimen S002	173.7	173.0	-0.4%	-0.41
22/2	Specimen S001	82.8	83.0	0.2%	0.26
22/1	Specimen S002	158.4	159.0	0.4%	0.32
22/1	Specimen S001	81.2	82.0	1.0%	0.94

sO2 | ABL800



	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	95.7 %	0.6	<0.1	0.7	98
All methods	97.5 %	1.6	<0.1	1.7	285

	$x_{pt}$	sd	SEM	CV%	n
Radiometer ABL 800-837 + FLEX	98.4 %	0.7	<0.1	0.7	97
All methods	99.6 %	1.2	<0.1	1.2	275

Round	Sample	$x_{pt}$	Result	diff%	z-score
23/1	Specimen S002	98.4	98.5	0.1%	0.16
23/1	Specimen S001	95.7	95.8	0.1%	0.10
22/2	Specimen S001	95.9	95.3	-0.7%	-0.64
22/1	Specimen S002	101.8	102.0	0.2%	0.25
22/1	Specimen S001	98.8	98.3	-0.5%	-0.90

**Report info****Participants**

126 participants from 10 countries.

**Report info**

Your own result should be compared to others using the same method.

Assigned values ( $x_p$ , target values) are means of the results where results deviating more than  $\pm 3$  standard deviation from the median are removed. The standard uncertainty ( $u$ ) of

the assigned value is reported as standard error of the mean (SEM). Additionally, if the measurement uncertainty of the target value is large an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected."

In case the client's result is the only one in the method group, no assigned value will be calculated, no target area shown, and no statistics calculated. In case there are only a few results in the client's own method group, the result can be compared to all method mean or to a group that is similar to the own method.

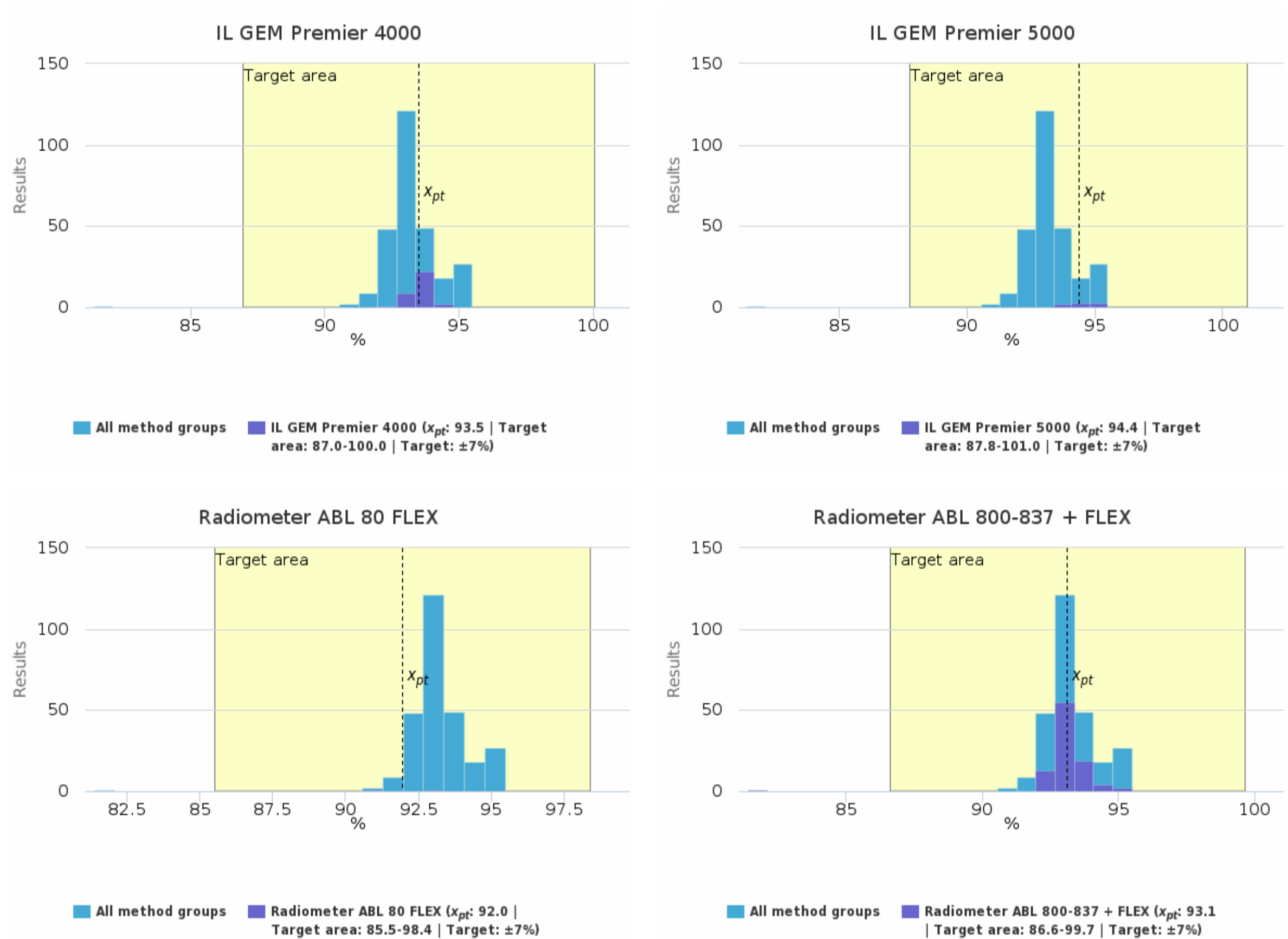
Results reported with  $<$  or  $>$  -signs cannot be included in the statistics.

For information on report interpretation and performance evaluation, please see the "EOAS Interpretation guidelines" LabScala User instructions (top right corner ?Help link).

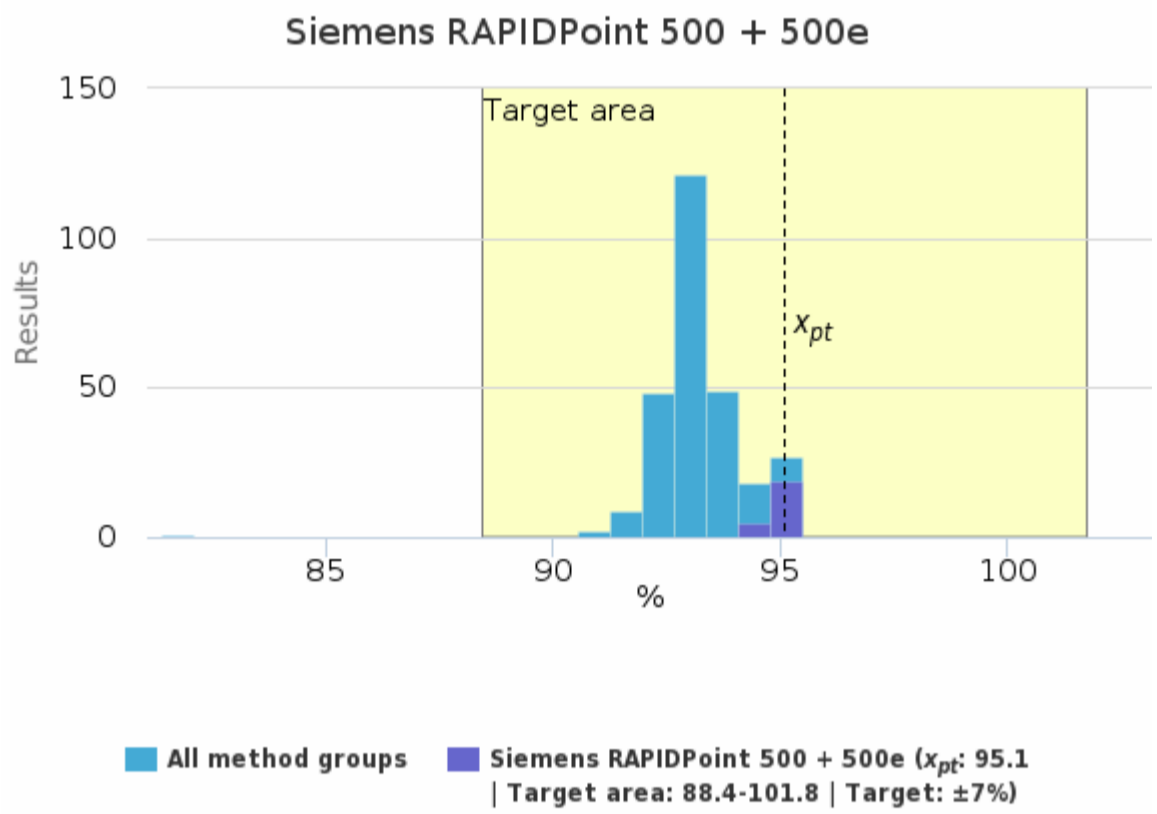
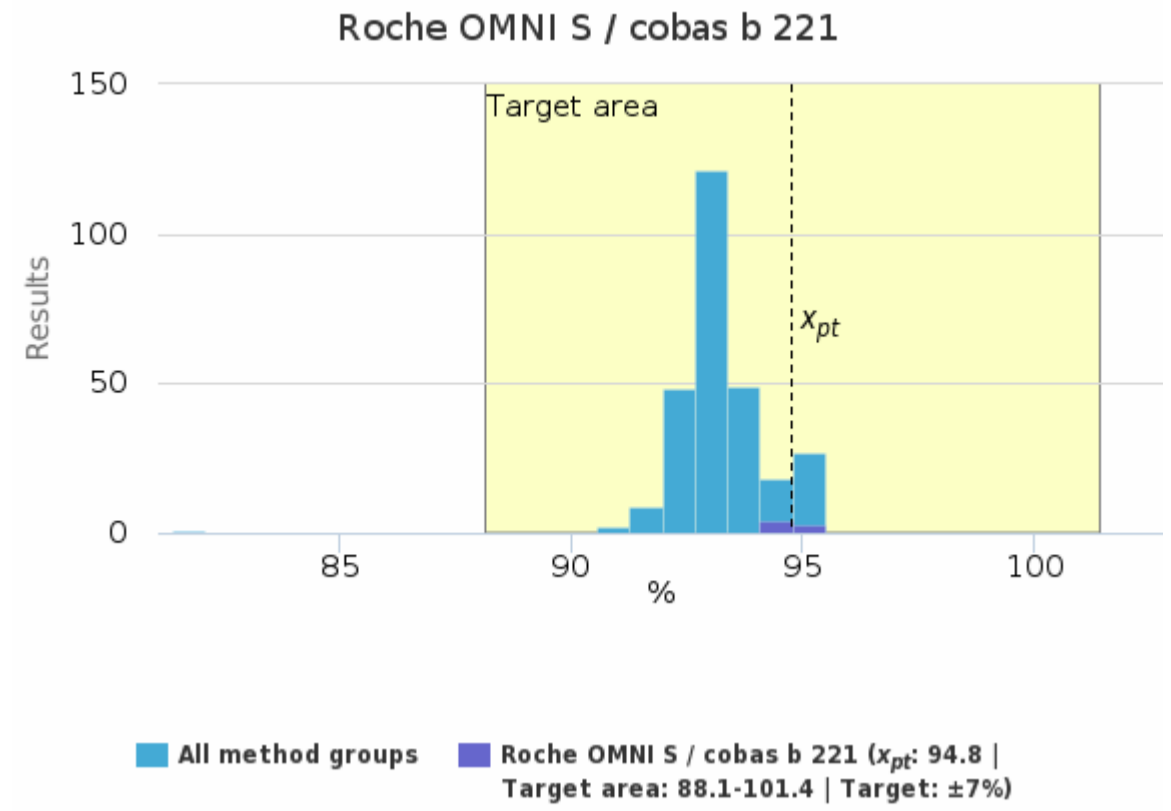
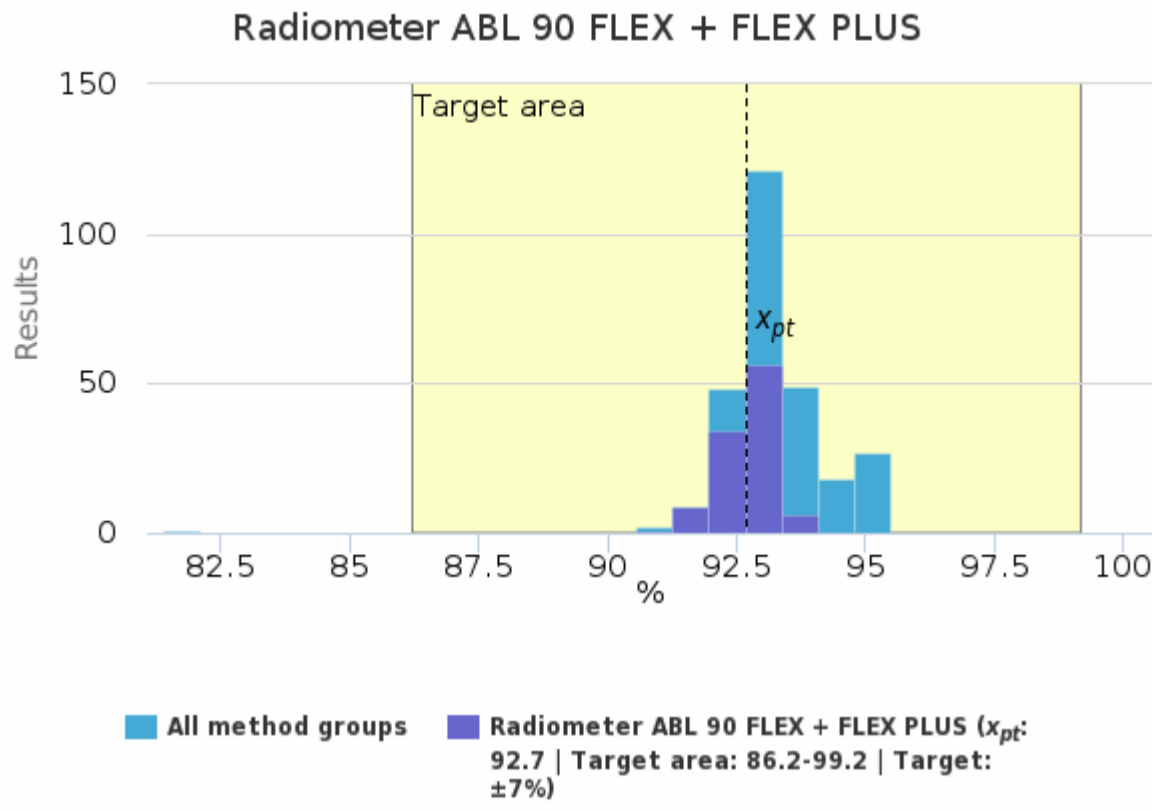
### Specimen S001 | FO2Hb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	93.5	93.6	0.5	0.5	<0.1	92.5	94.5	-	34
IL GEM Premier 5000	94.4	94.4	0.5	0.5	0.2	93.5	94.8	-	8
Radiometer ABL 80 FLEX	92.0	92.0	1.3	1.5	1.0	91.0	92.9	-	2
Radiometer ABL 800-837 + FLEX	93.1	93.1	0.5	0.6	<0.1	92.0	95.3	1	94
Radiometer ABL 90 FLEX + FLEX PLUS	92.7	92.7	0.5	0.5	<0.1	91.7	94.0	1	106
Roche OMNI S / cobas b 221	94.8	94.7	0.4	0.4	0.1	94.2	95.2	-	7
Siemens RAPIDPoint 500 + 500e	95.1	95.2	0.3	0.3	<0.1	94.4	95.5	-	24
<b>All</b>	<b>93.2</b>	<b>93.1</b>	<b>0.9</b>	<b>0.9</b>	<b>&lt;0.1</b>	<b>91.0</b>	<b>95.5</b>	<b>1</b>	<b>275</b>

### Specimen S001 | FO2Hb, % | histogram summaries in LabScala



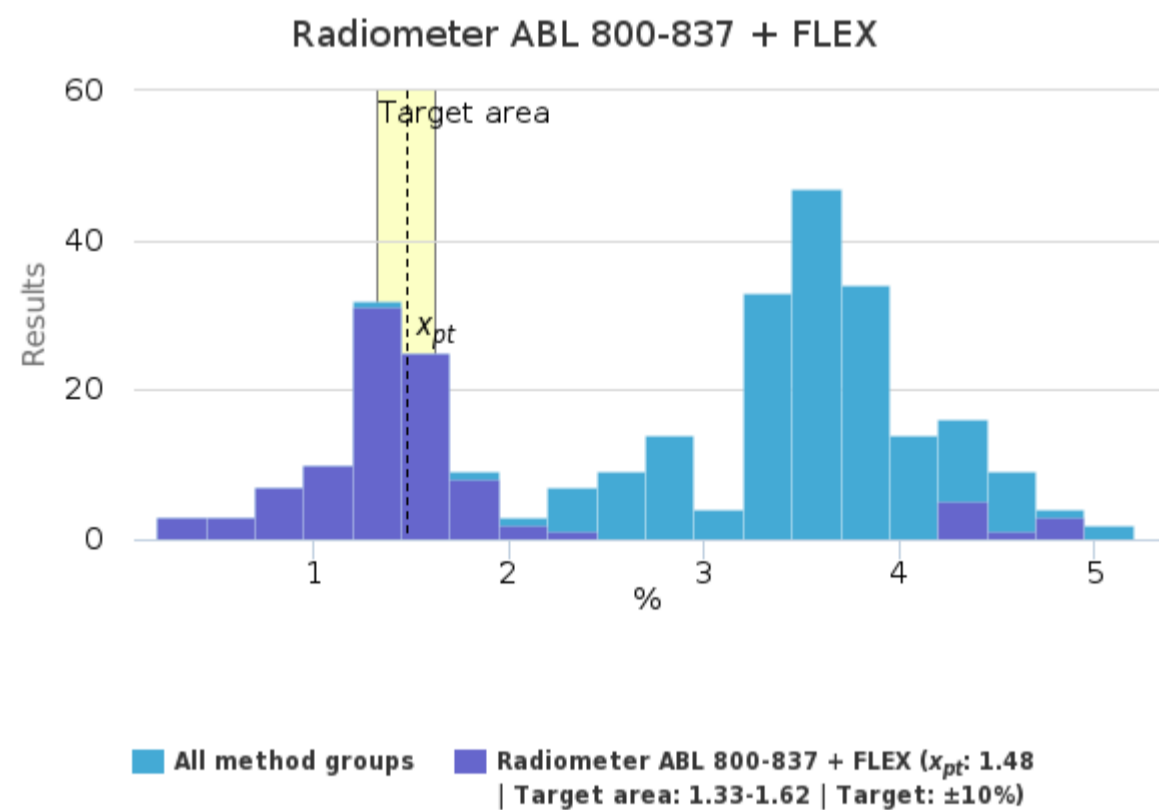
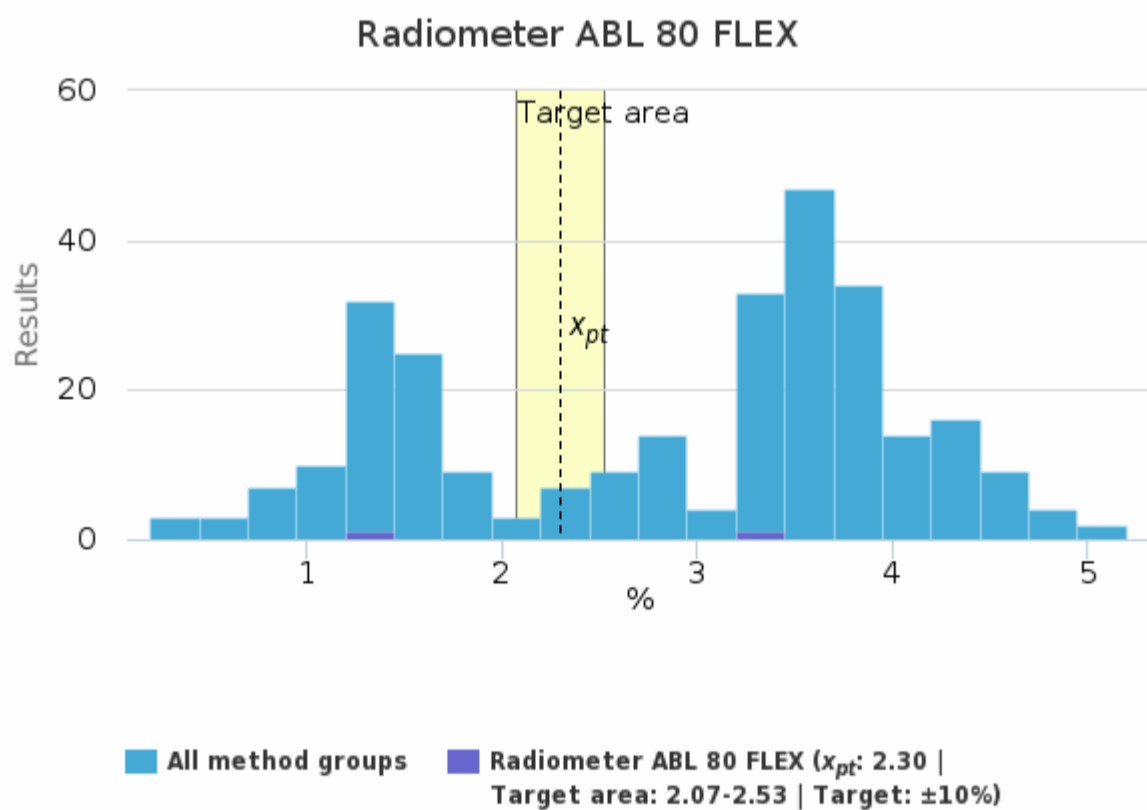
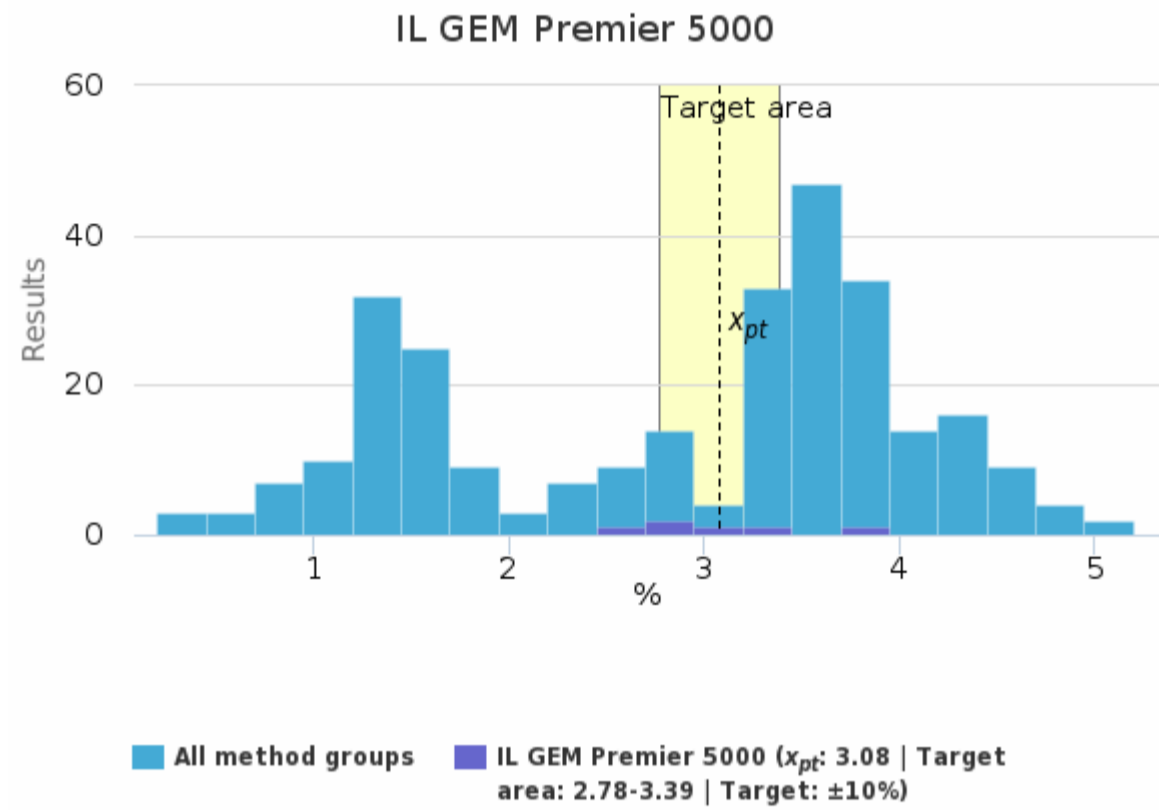
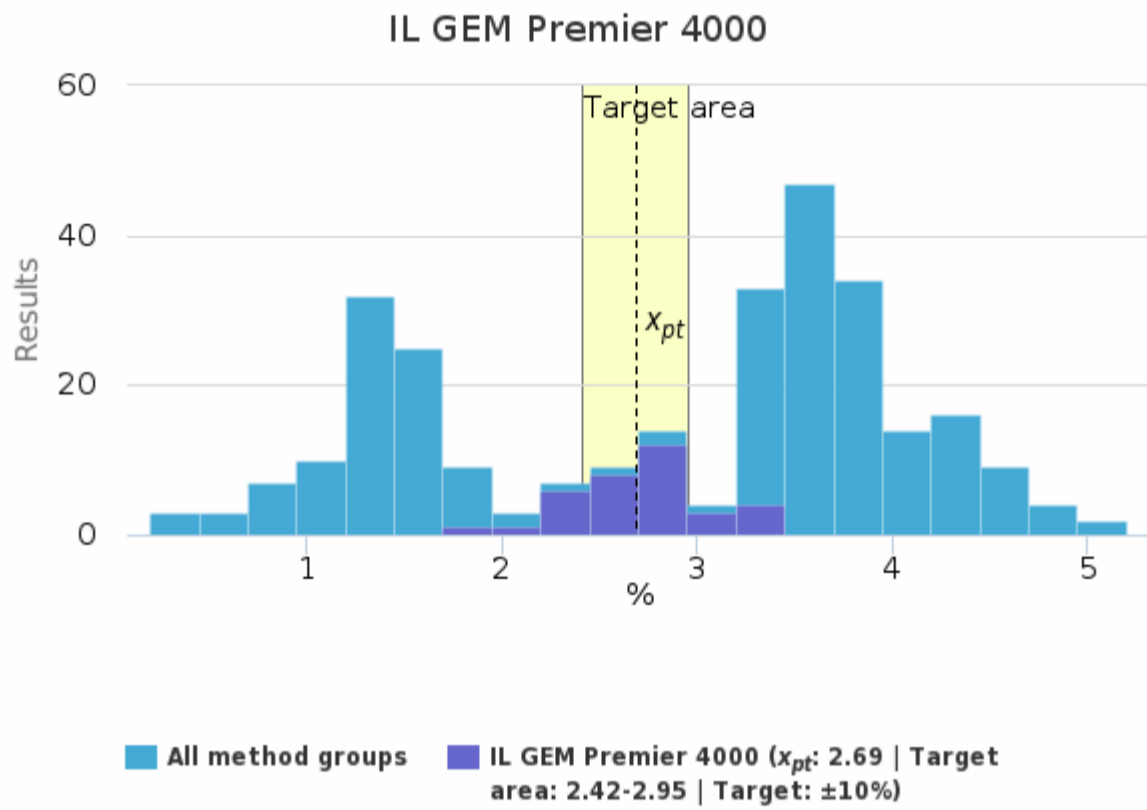


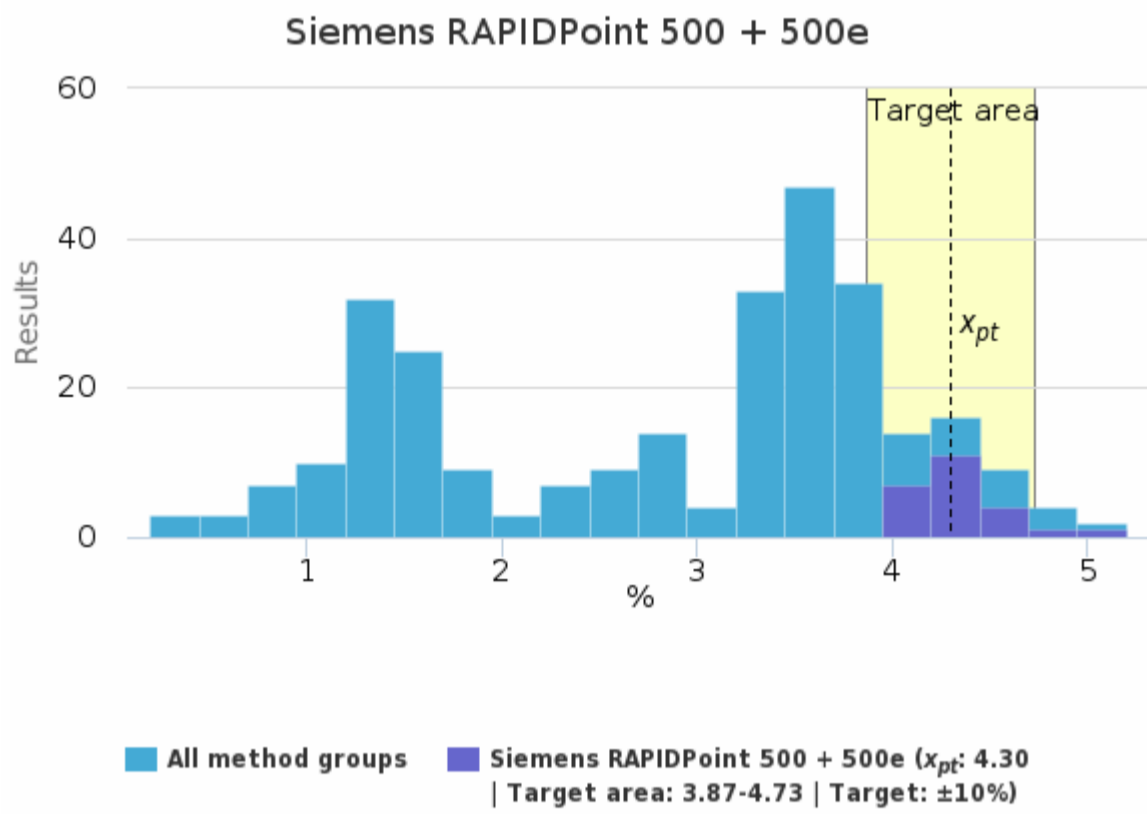
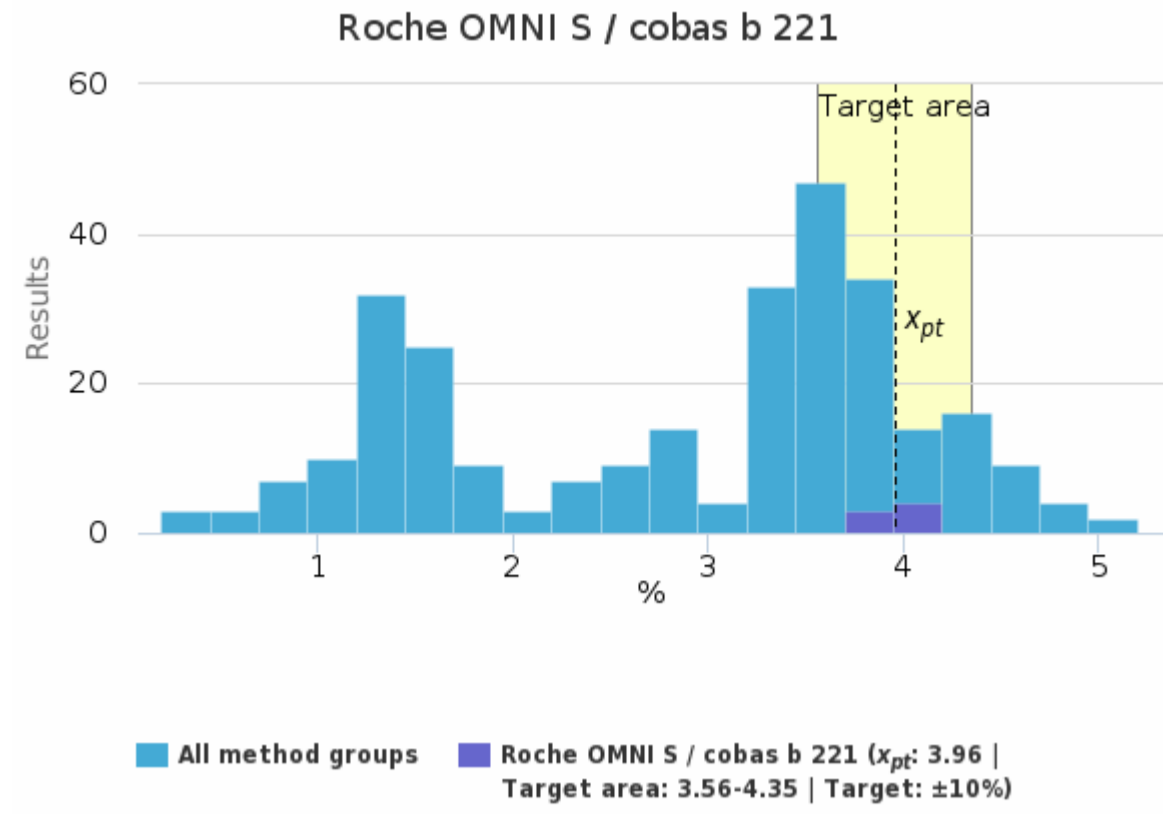
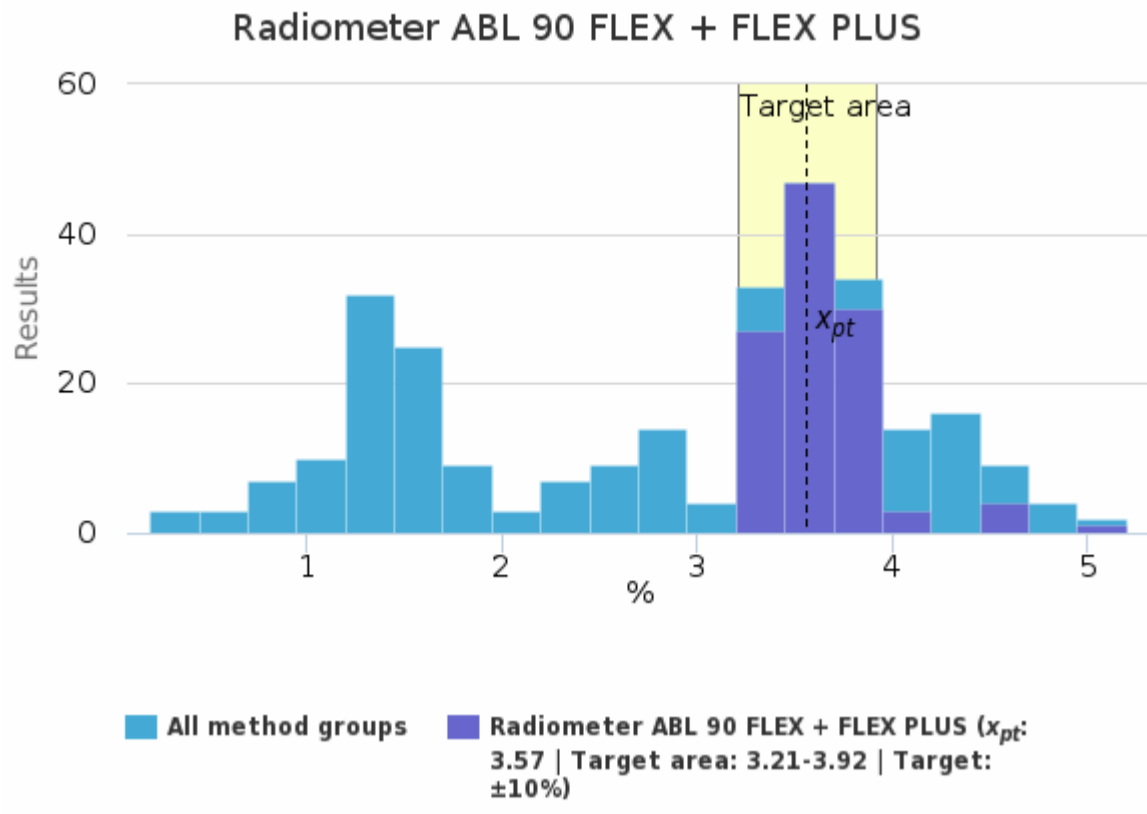


### Specimen S001 | FCOHb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	2.69	2.70	0.34	12.6	0.06	1.90	3.40	-	35
IL GEM Premier 5000	3.08	2.95	0.46	15.0	0.19	2.60	3.90	-	6
Radiometer ABL 80 FLEX	2.30	2.30	1.27	55.3	0.90	1.40	3.20	-	2
Radiometer ABL 800-837 + FLEX	1.48	1.40	0.76	51.3	0.08	0.20	4.30	4	99
Radiometer ABL 90 FLEX + FLEX PLUS	3.57	3.60	0.19	5.3	0.02	3.20	4.10	5	112
Roche OMNI S / cobas b 221	3.96	4.00	0.05	1.4	0.02	3.90	4.00	-	7
Siemens RAPIDPoint 500 + 500e	4.30	4.30	0.21	4.8	0.04	4.00	4.80	1	24
<b>All</b>	<b>2.85</b>	<b>3.30</b>	<b>1.18</b>	<b>41.3</b>	<b>0.07</b>	<b>0.20</b>	<b>5.20</b>	-	<b>285</b>

### Specimen S001 | FCOHb, % | histogram summaries in LabScala

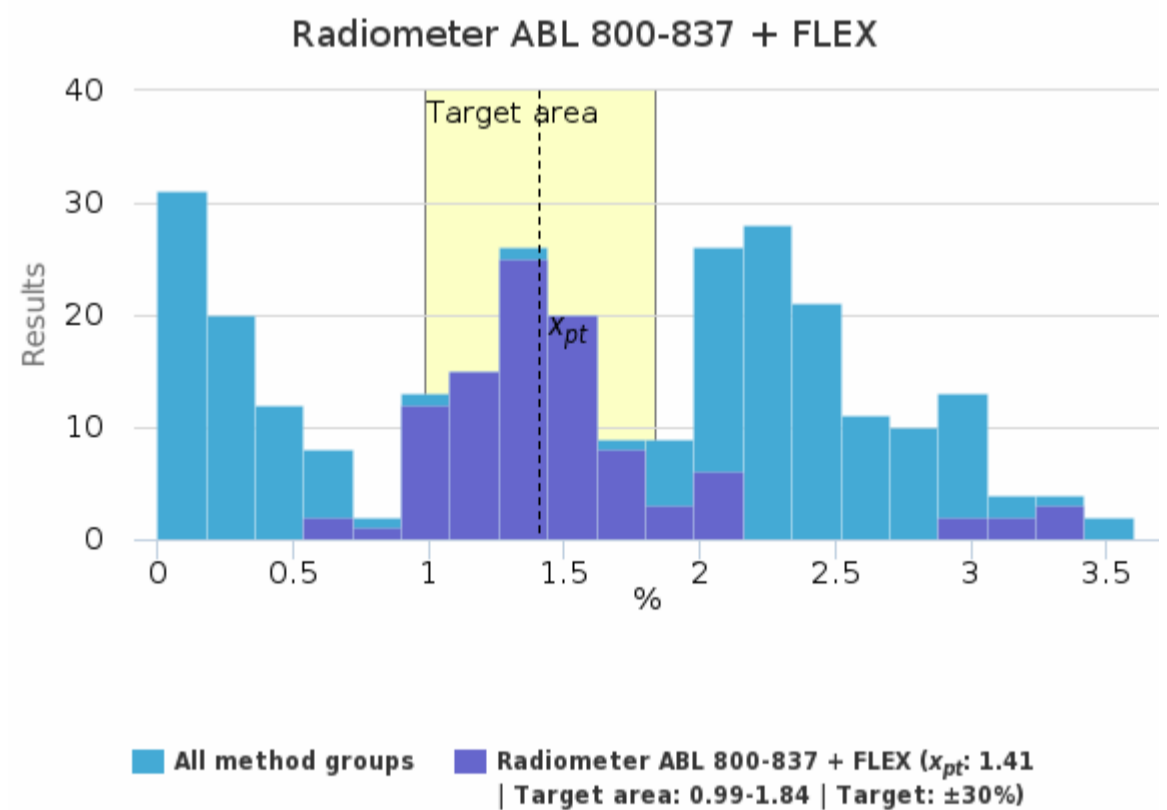
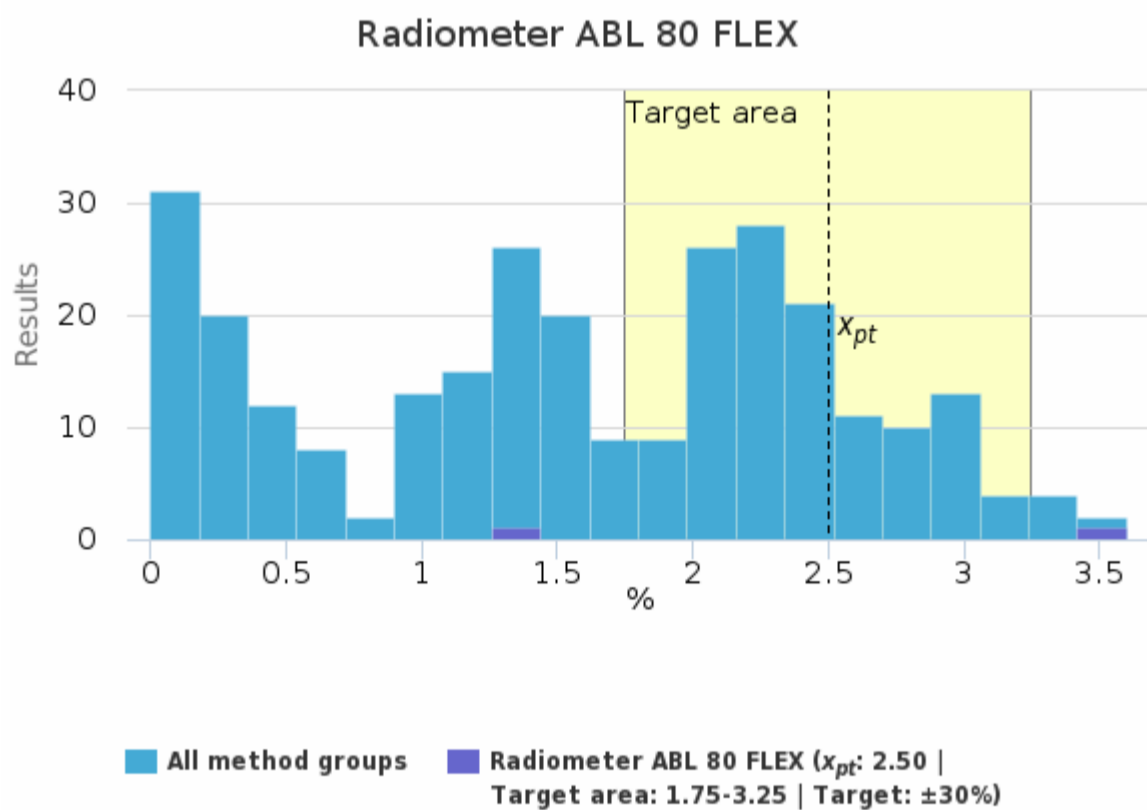
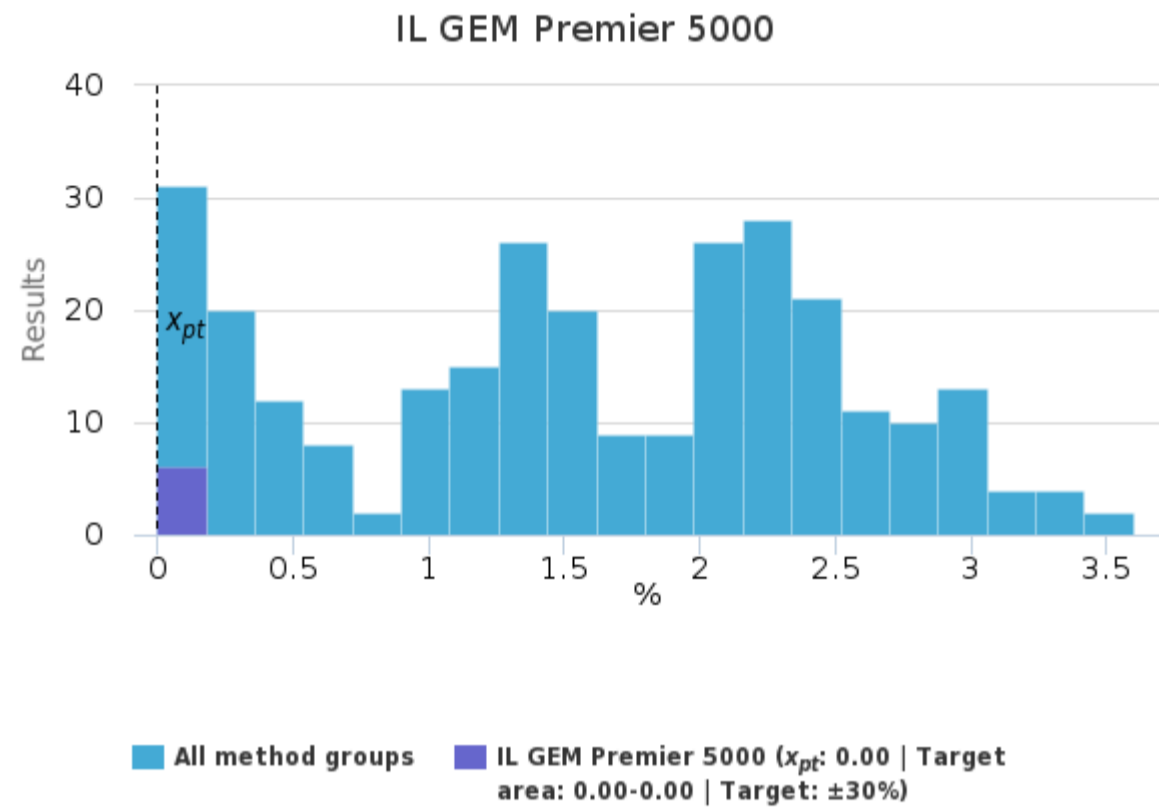
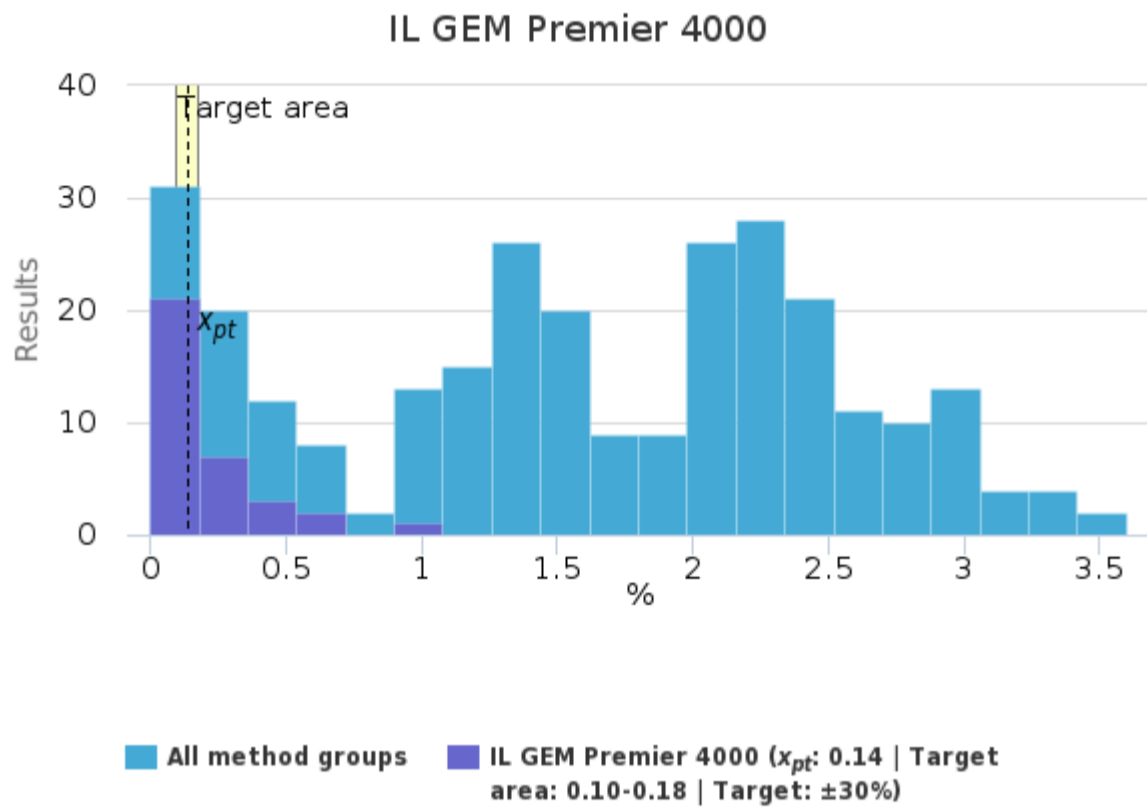


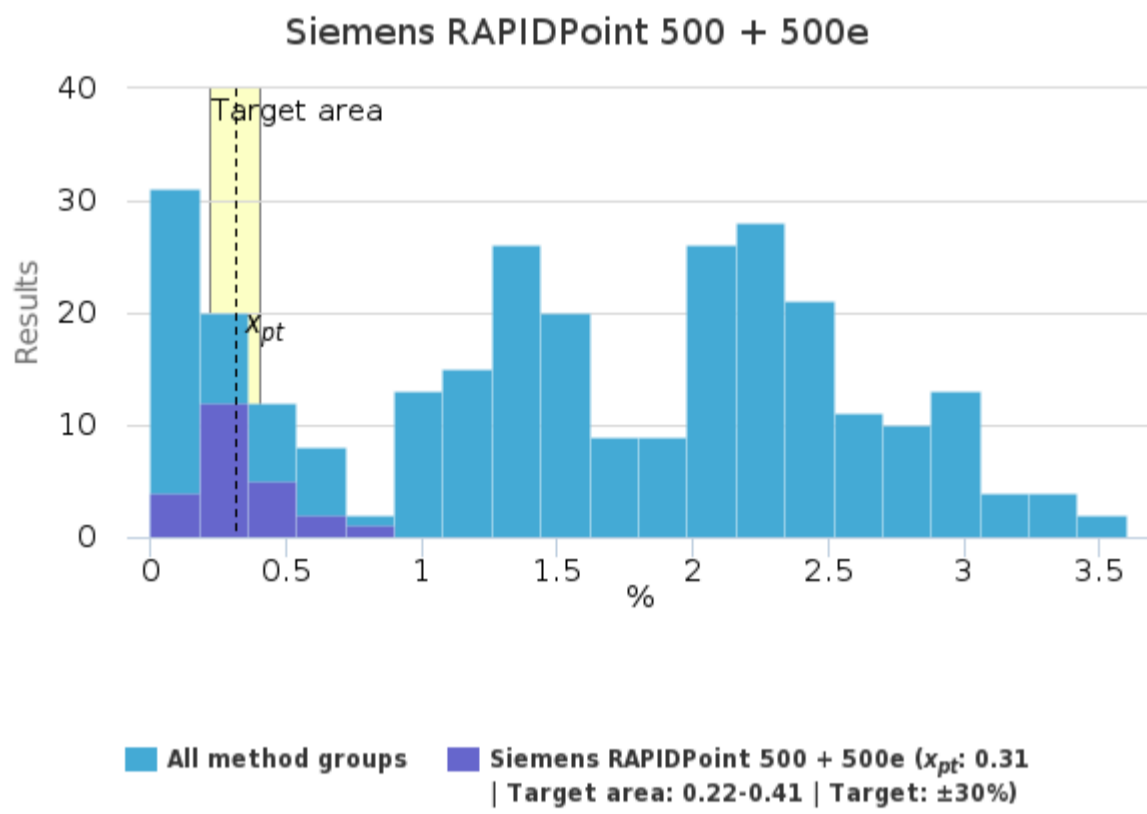
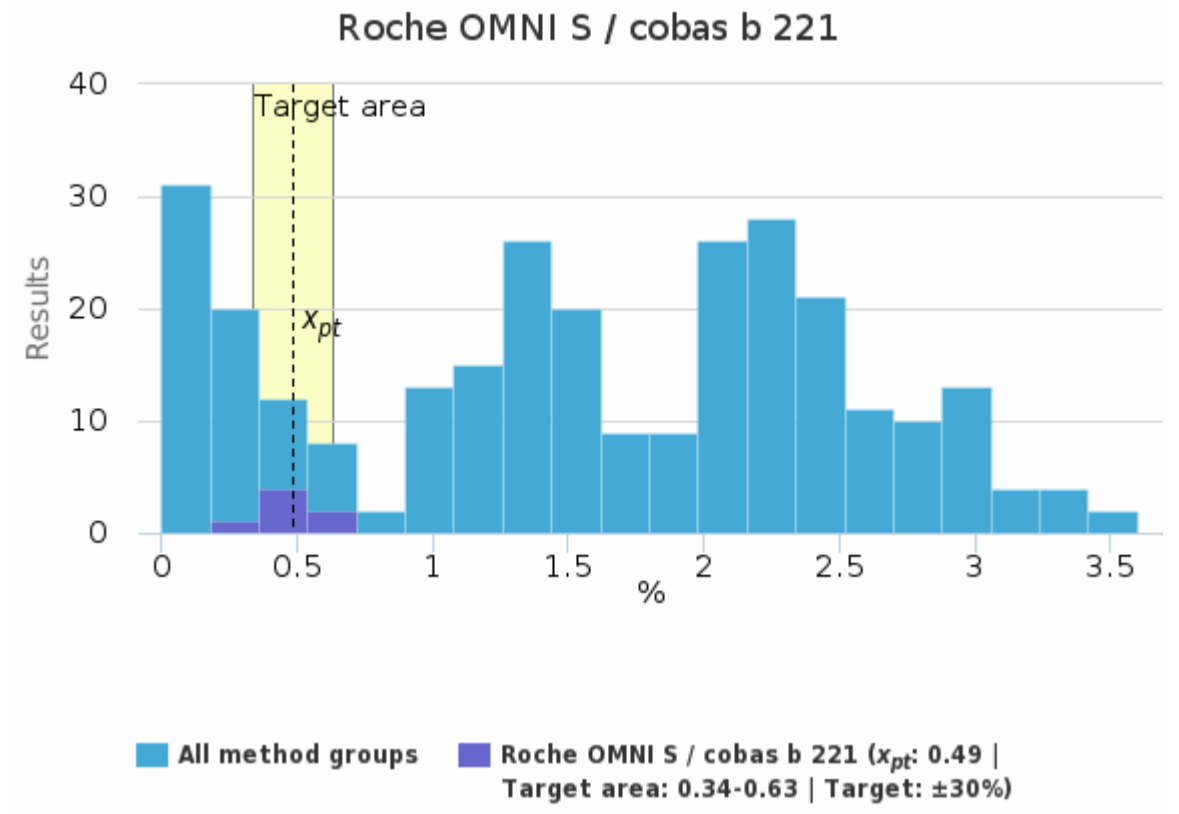
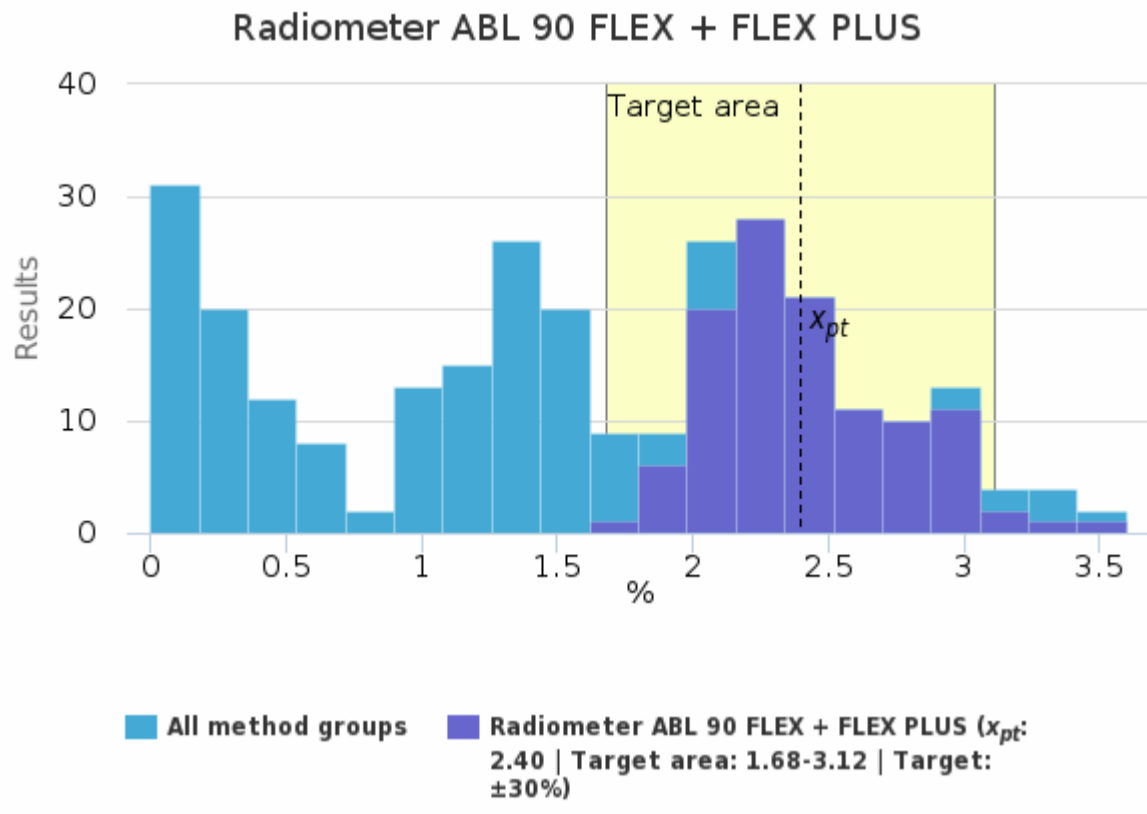


### Specimen S001 | FMETHb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	0.14	0.10	0.18	130.7	0.03	0.00	0.60	1	34
IL GEM Premier 5000	0.00	0.00	<0.01	<0.1	<0.01	0.00	0.00	-	6
Radiometer ABL 80 FLEX	2.50	2.50	1.56	62.2	1.10	1.40	3.60	-	2
Radiometer ABL 800-837 + FLEX	1.41	1.40	0.39	27.8	0.04	0.60	3.00	5	99
Radiometer ABL 90 FLEX + FLEX PLUS	2.40	2.40	0.34	14.2	0.03	1.70	3.30	1	112
Roche OMNI S / cobas b 221	0.49	0.50	0.13	27.7	0.05	0.30	0.70	-	7
Siemens RAPIDPoint 500 + 500e	0.31	0.30	0.19	61.4	0.04	0.00	0.80	-	24
<b>All</b>	<b>1.55</b>	<b>1.60</b>	<b>0.96</b>	<b>61.7</b>	<b>0.06</b>	<b>0.00</b>	<b>3.60</b>	-	<b>284</b>

### Specimen S001 | FMETHb, % | histogram summaries in LabScala

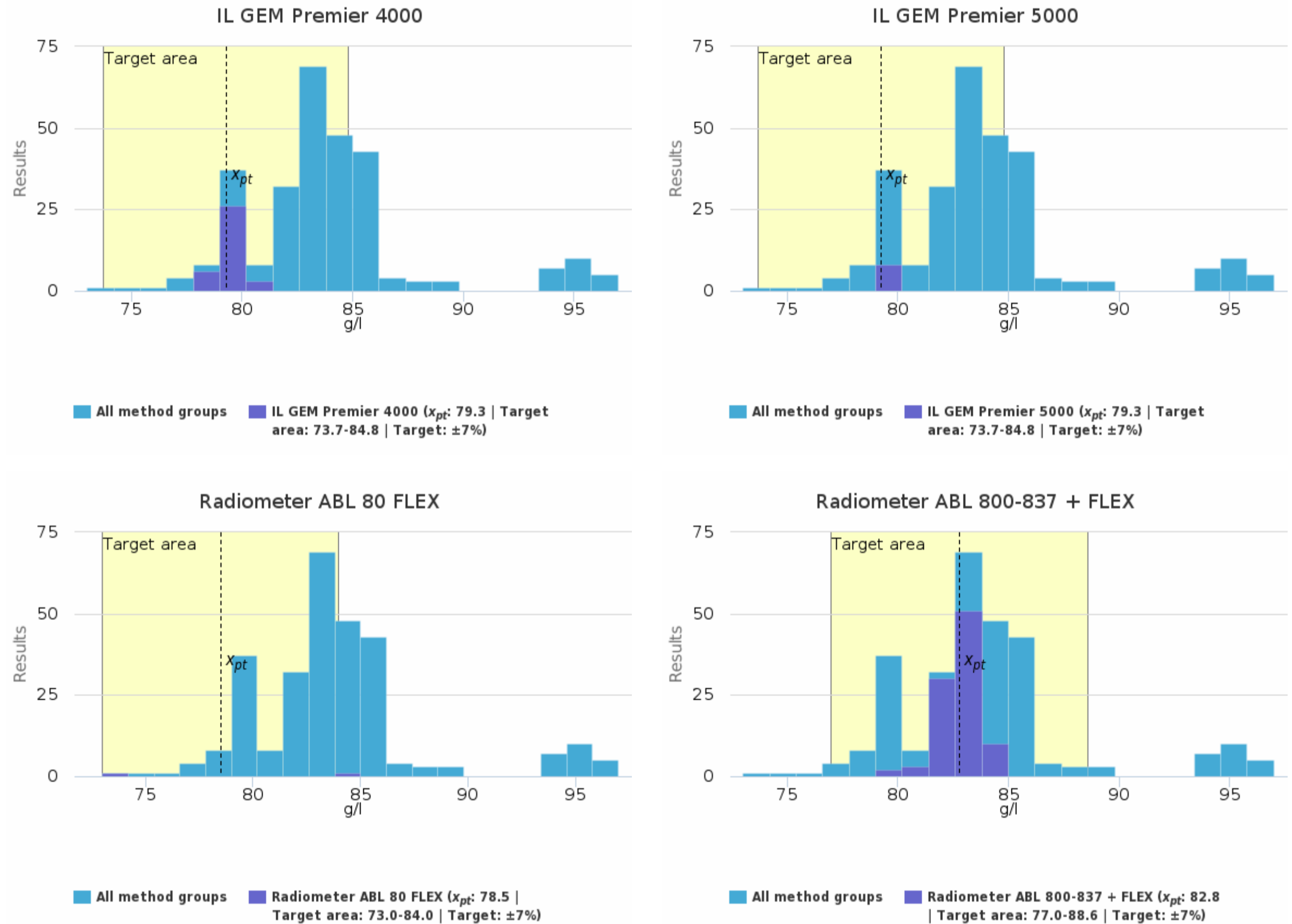


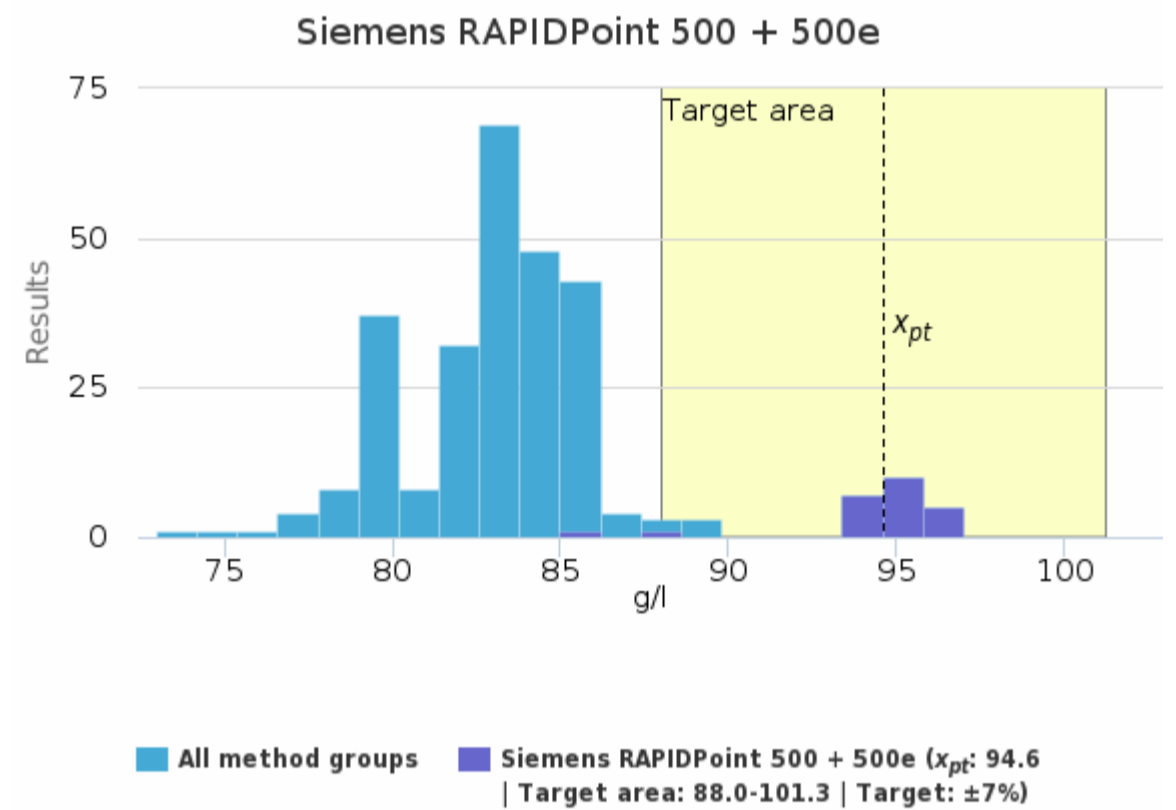
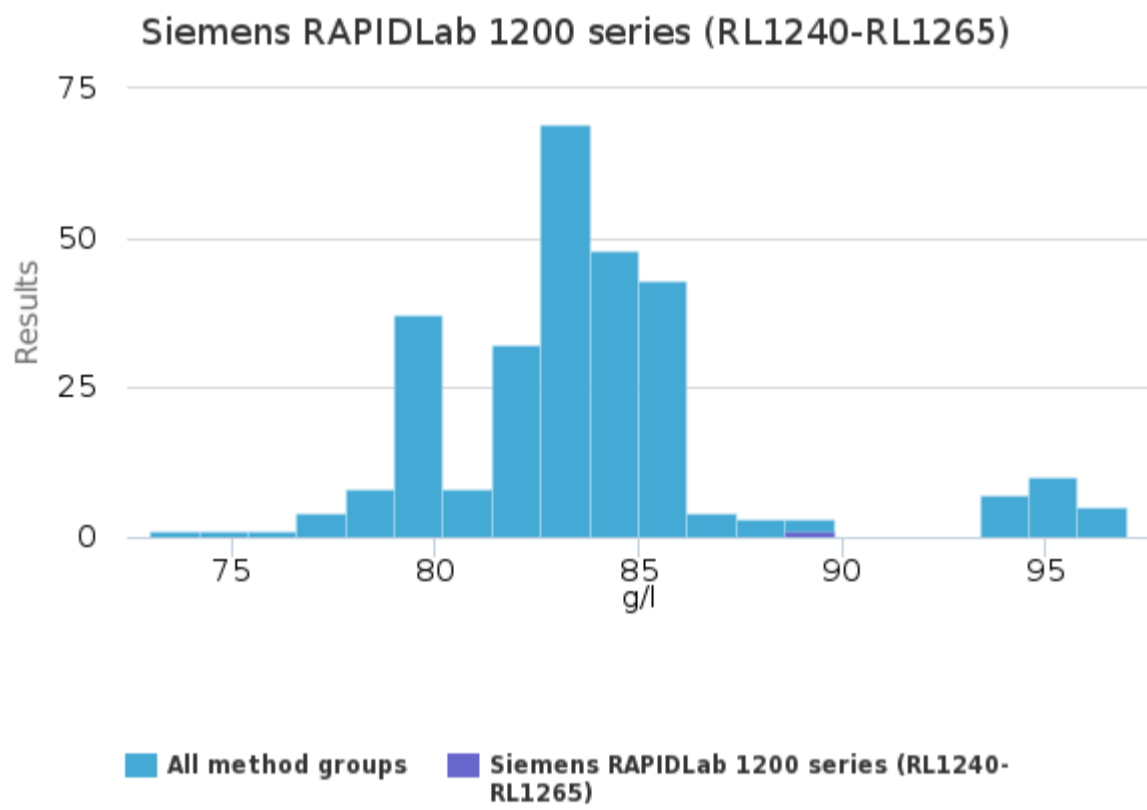
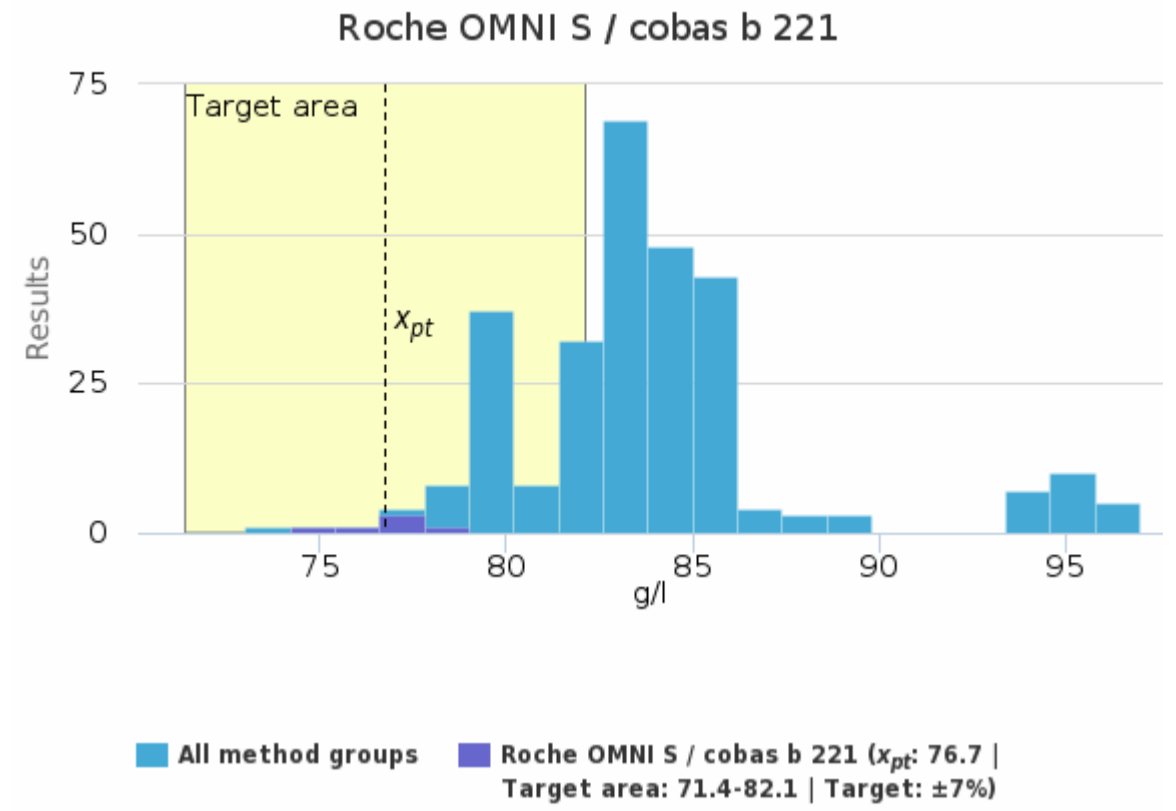
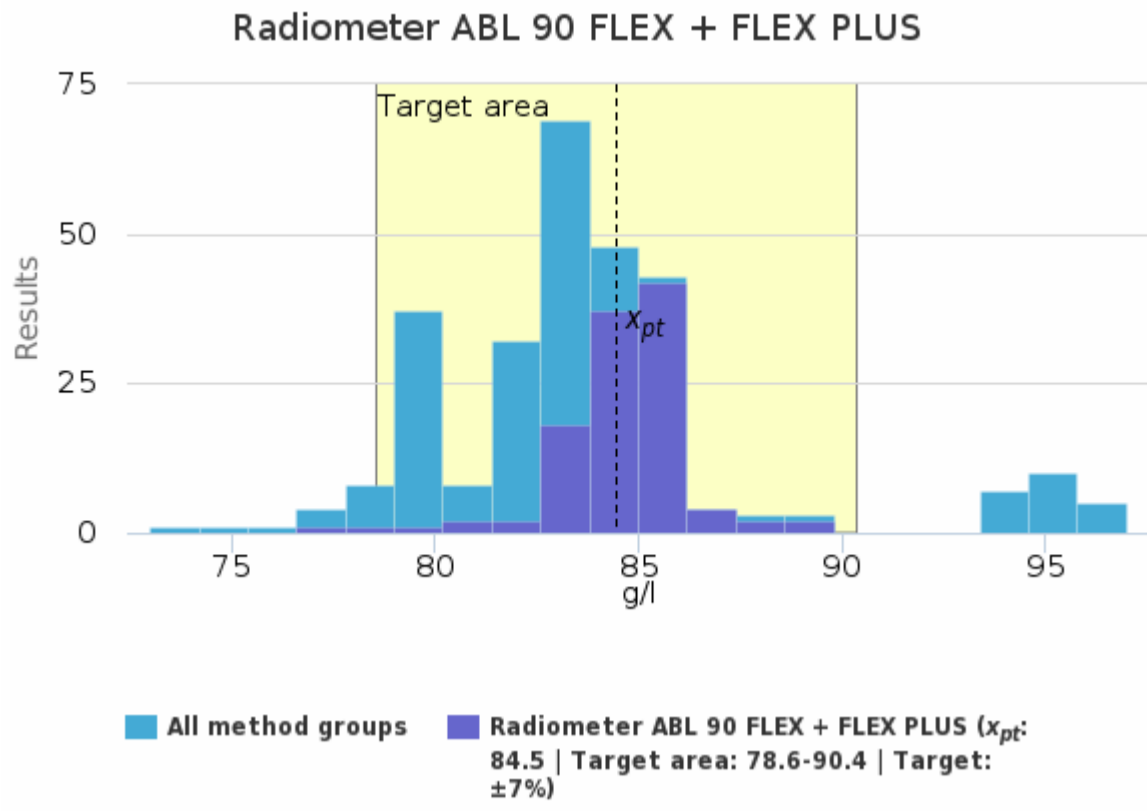


### Specimen S001 | ctHb, g/l

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	79.3	79.0	0.8	1.1	0.1	78.0	81.0	-	35
IL GEM Premier 5000	79.3	79.0	0.5	0.6	0.2	79.0	80.0	-	8
Radiometer ABL 80 FLEX	78.5	78.5	7.8	9.9	5.5	73.0	84.0	-	2
Radiometer ABL 800-837 + FLEX	82.8	83.0	0.7	0.9	<0.1	80.6	84.0	2	96
Radiometer ABL 90 FLEX + FLEX PLUS	84.5	84.0	1.4	1.7	0.1	80.0	89.0	2	112
Roche OMNI S / cobas b 221	76.7	77.1	1.4	1.8	0.6	74.2	78.3	-	6
Siemens RAPIDLab 1200 series (RL1240-RL1265)	-	-	-	-	-	89.0	89.0	-	1
Siemens RAPIDPoint 500 + 500e	94.6	95.0	1.7	1.8	0.3	88.0	97.0	1	24
<b>All</b>	<b>83.5</b>	<b>83.0</b>	<b>3.7</b>	<b>4.5</b>	<b>0.2</b>	<b>73.0</b>	<b>95.0</b>	<b>5</b>	<b>284</b>

### Specimen S001 | ctHb, g/l | histogram summaries in LabScala

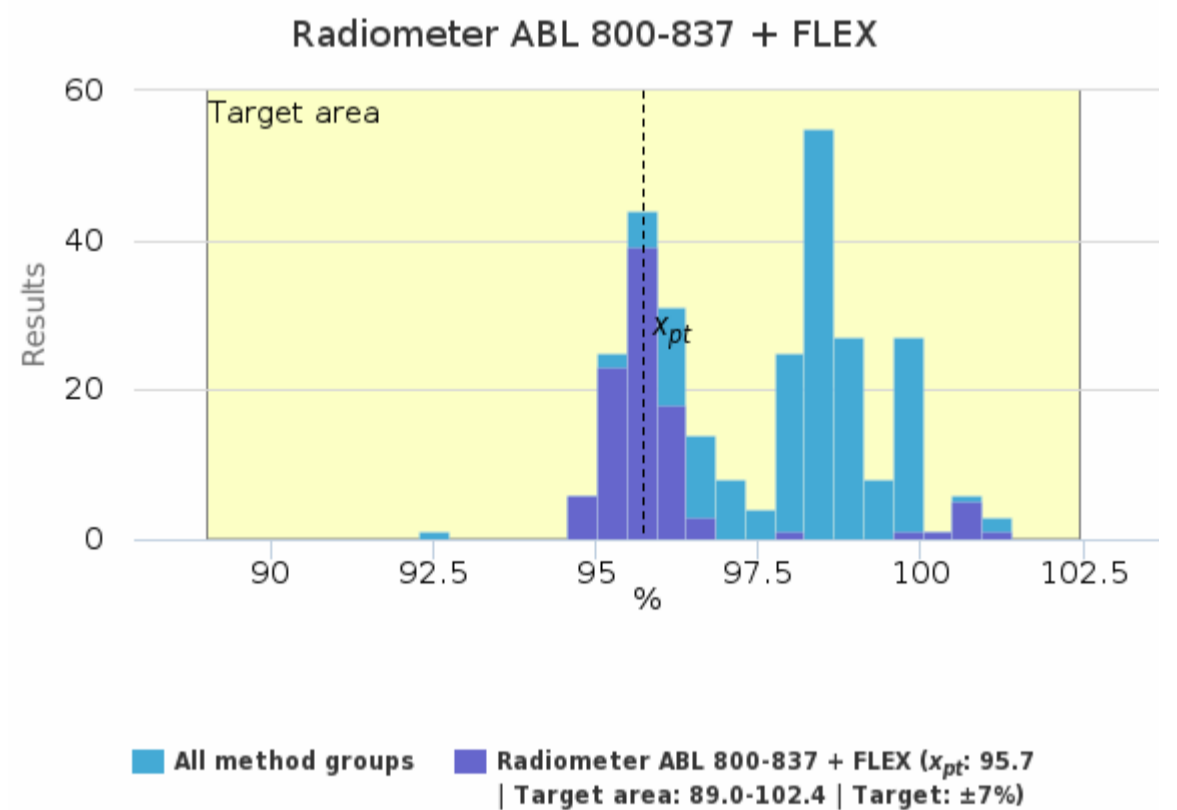
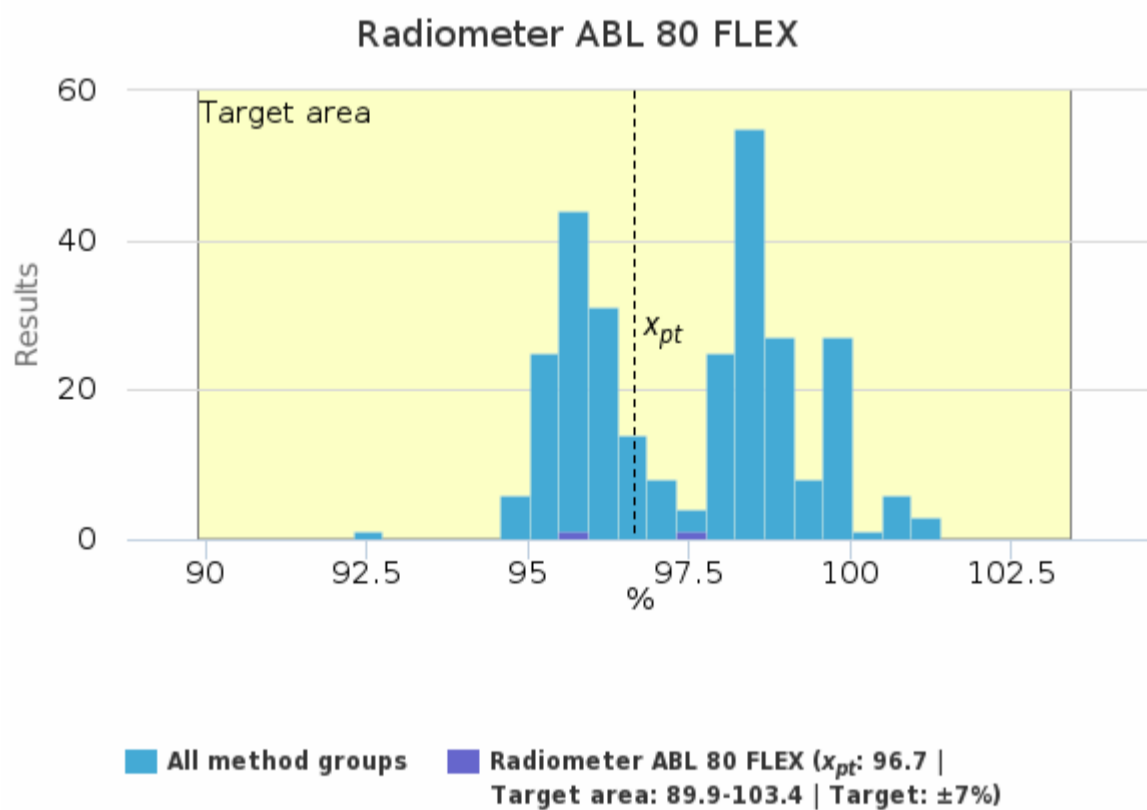
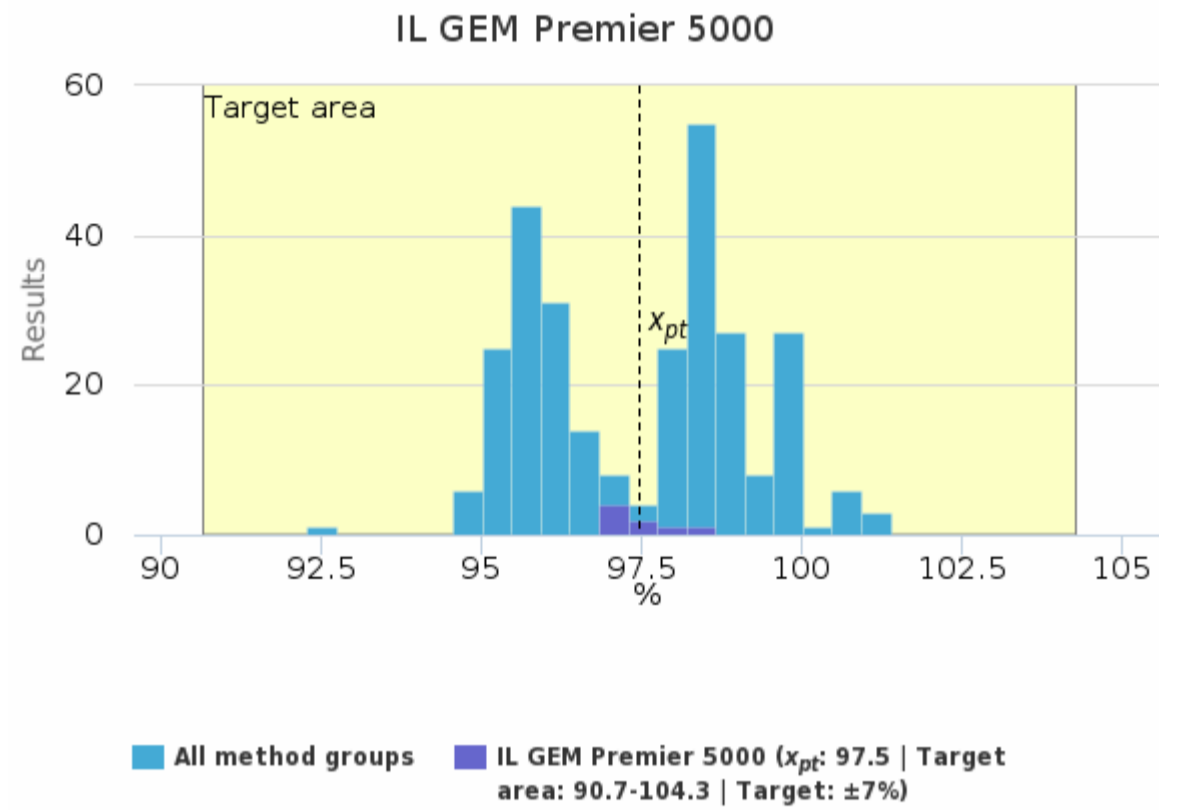
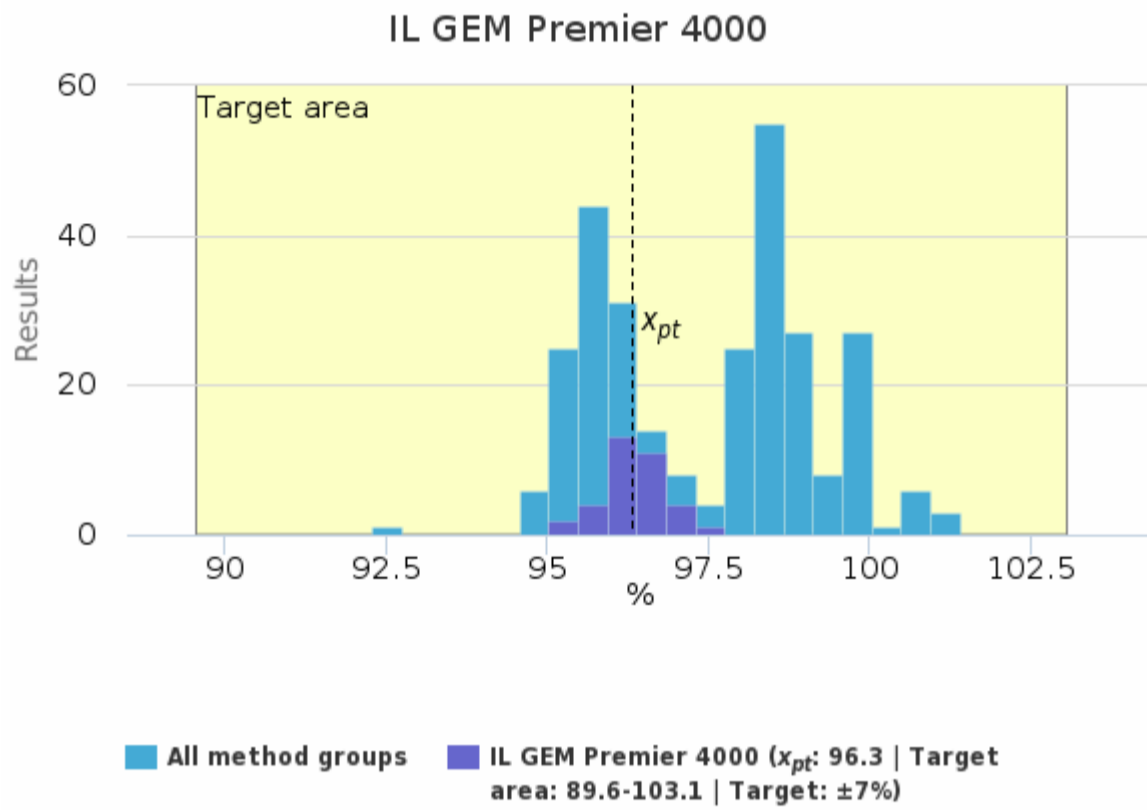




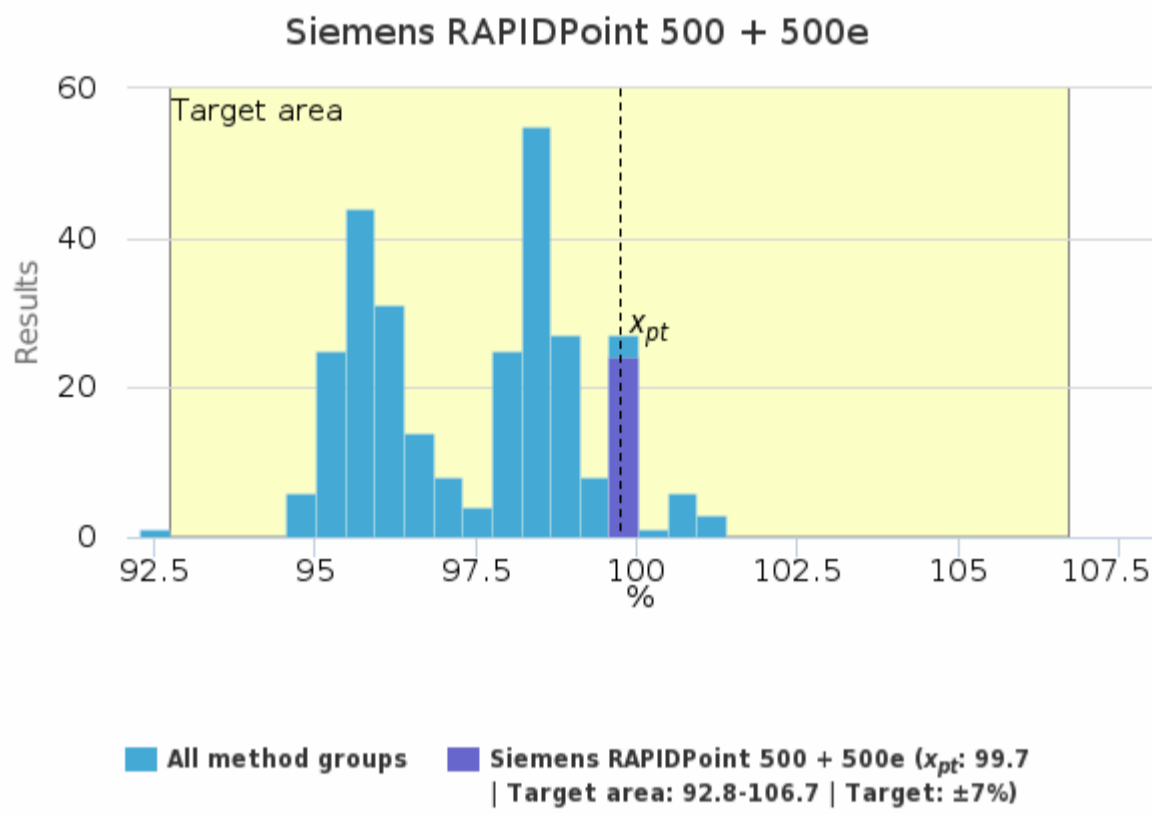
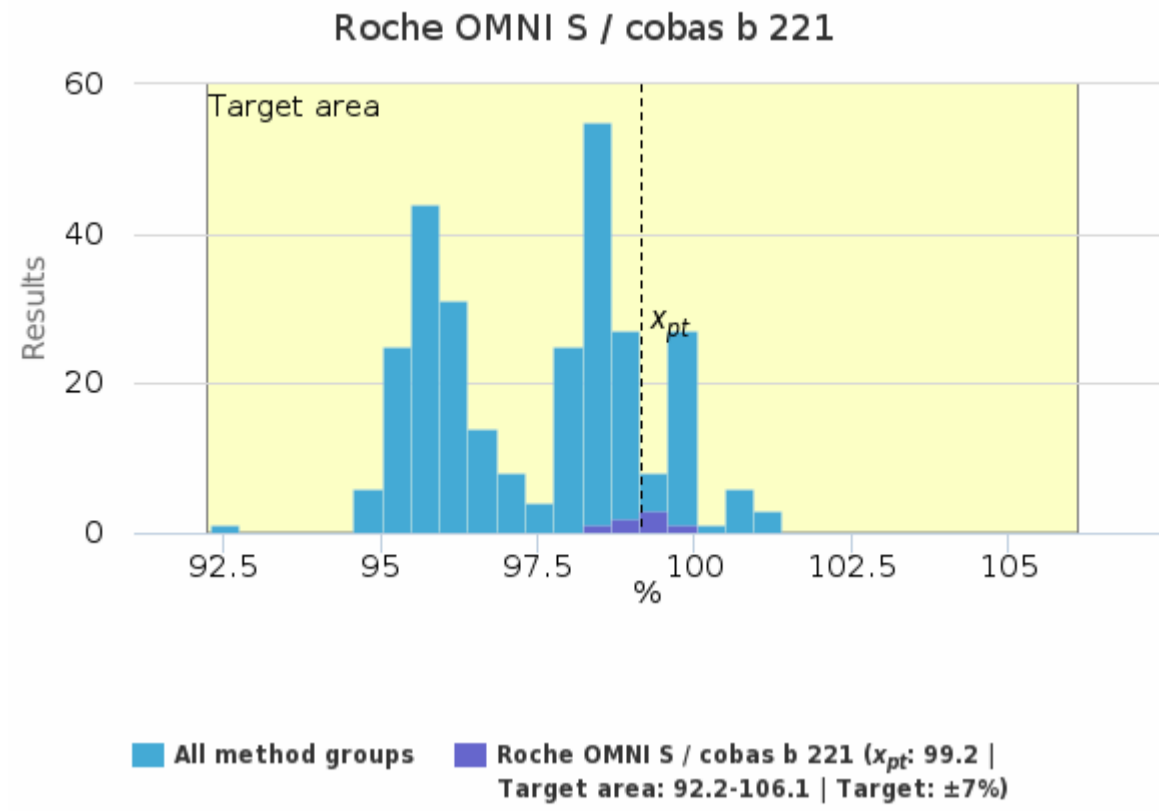
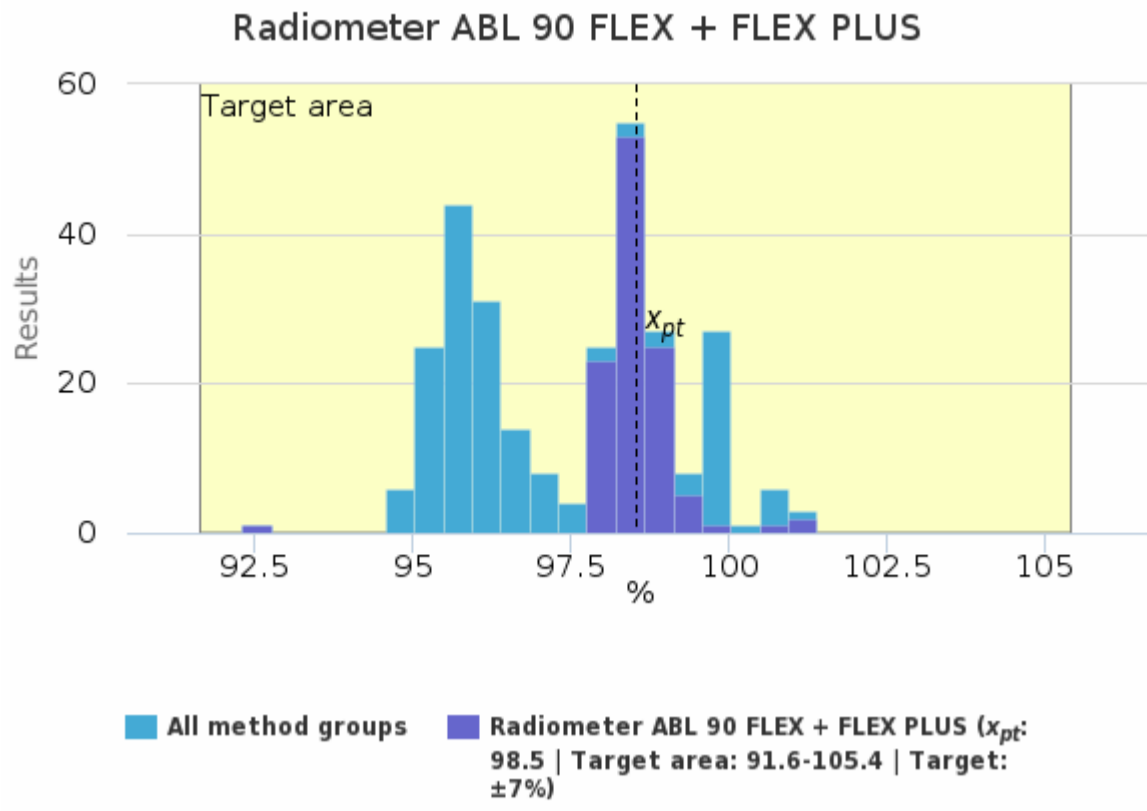
### Specimen S001 | sO<sub>2</sub>, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	96.3	96.3	0.5	0.5	<0.1	95.2	97.5	-	35
IL GEM Premier 5000	97.5	97.4	0.6	0.6	0.2	96.9	98.6	-	8
Radiometer ABL 80 FLEX	96.7	96.7	1.5	1.5	1.1	95.6	97.7	-	2
Radiometer ABL 800-837 + FLEX	95.7	95.7	0.6	0.7	<0.1	94.8	100.0	7	98
Radiometer ABL 90 FLEX + FLEX PLUS	98.5	98.5	0.4	0.4	<0.1	97.8	100.8	3	111
Roche OMNI S / cobas b 221	99.2	99.4	0.5	0.5	0.2	98.4	99.6	-	7
Siemens RAPIDPoint 500 + 500e	99.7	99.7	<0.1	<0.1	<0.1	99.7	99.9	1	24
<b>All</b>	<b>97.5</b>	<b>98.1</b>	<b>1.6</b>	<b>1.7</b>	<b>&lt;0.1</b>	<b>94.8</b>	<b>101.4</b>	<b>1</b>	<b>285</b>

### Specimen S001 | sO<sub>2</sub>, % | histogram summaries in LabScala



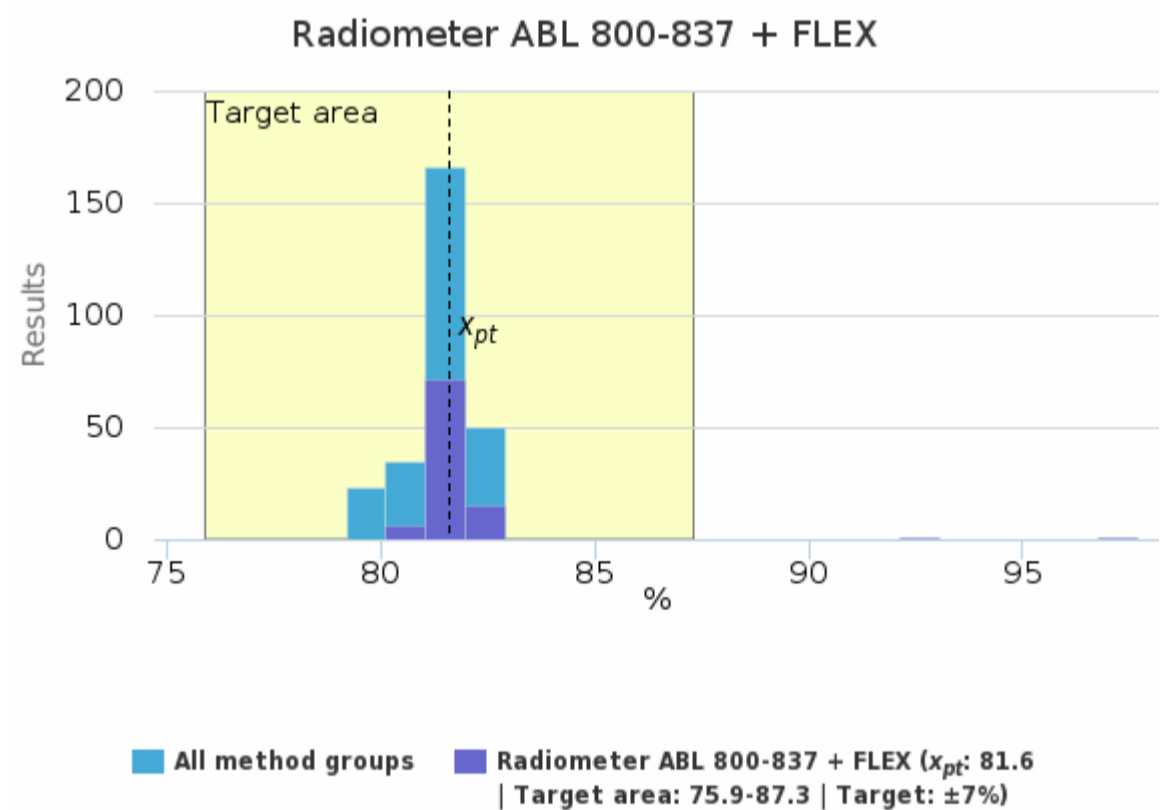
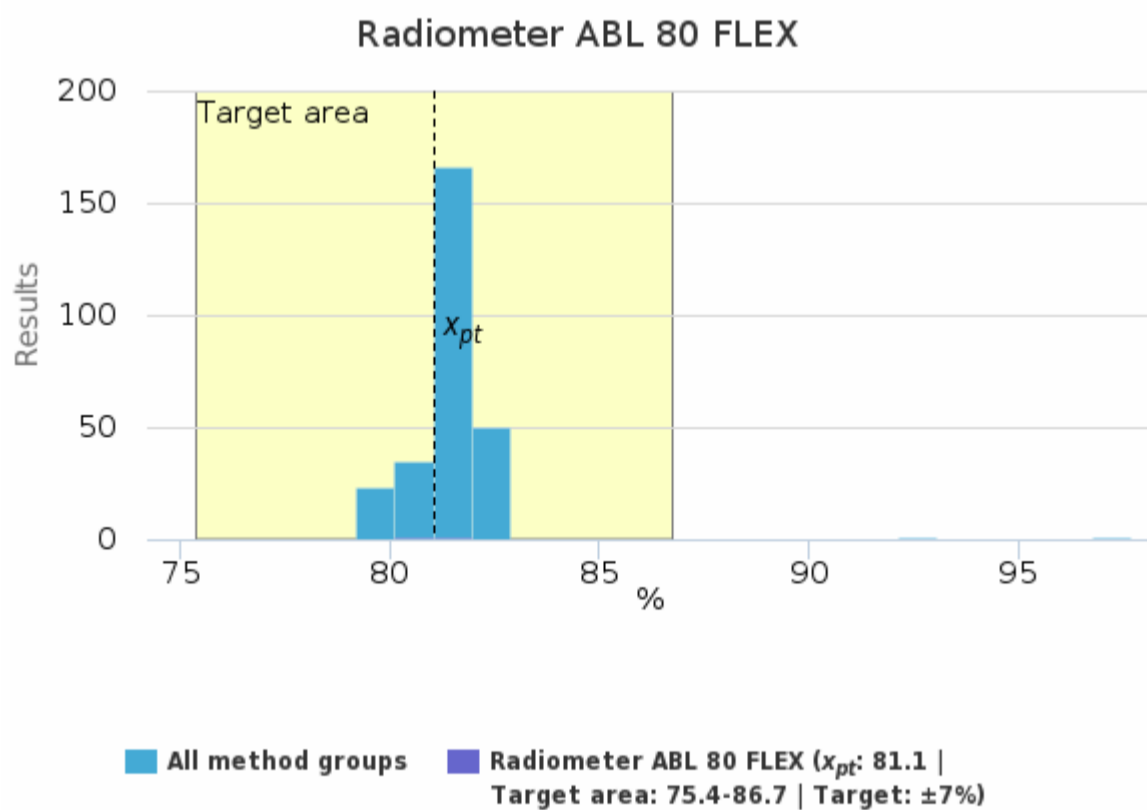
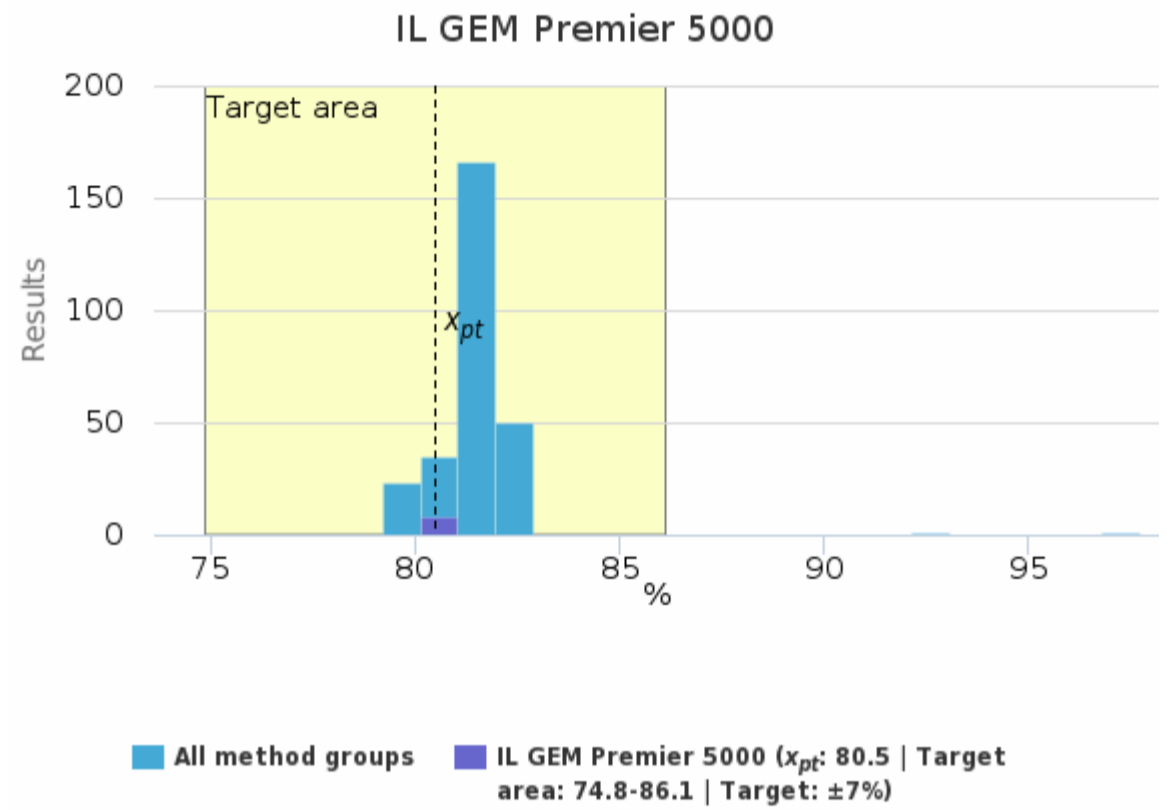
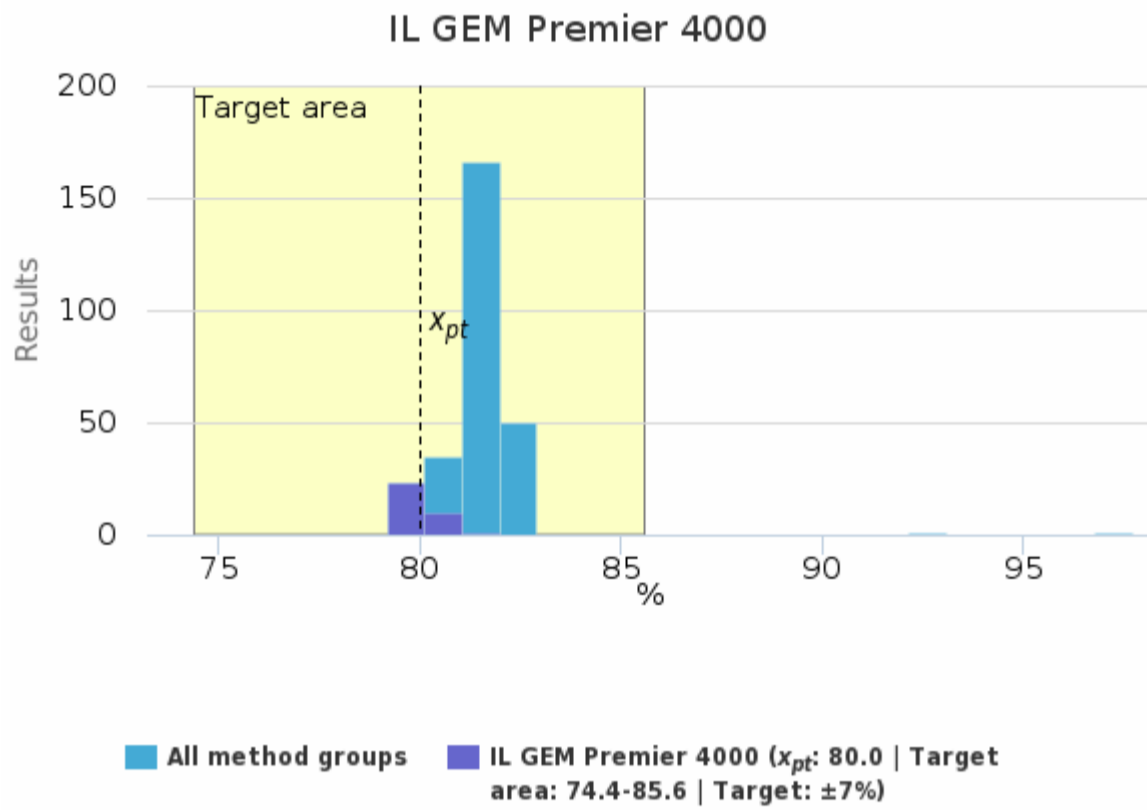


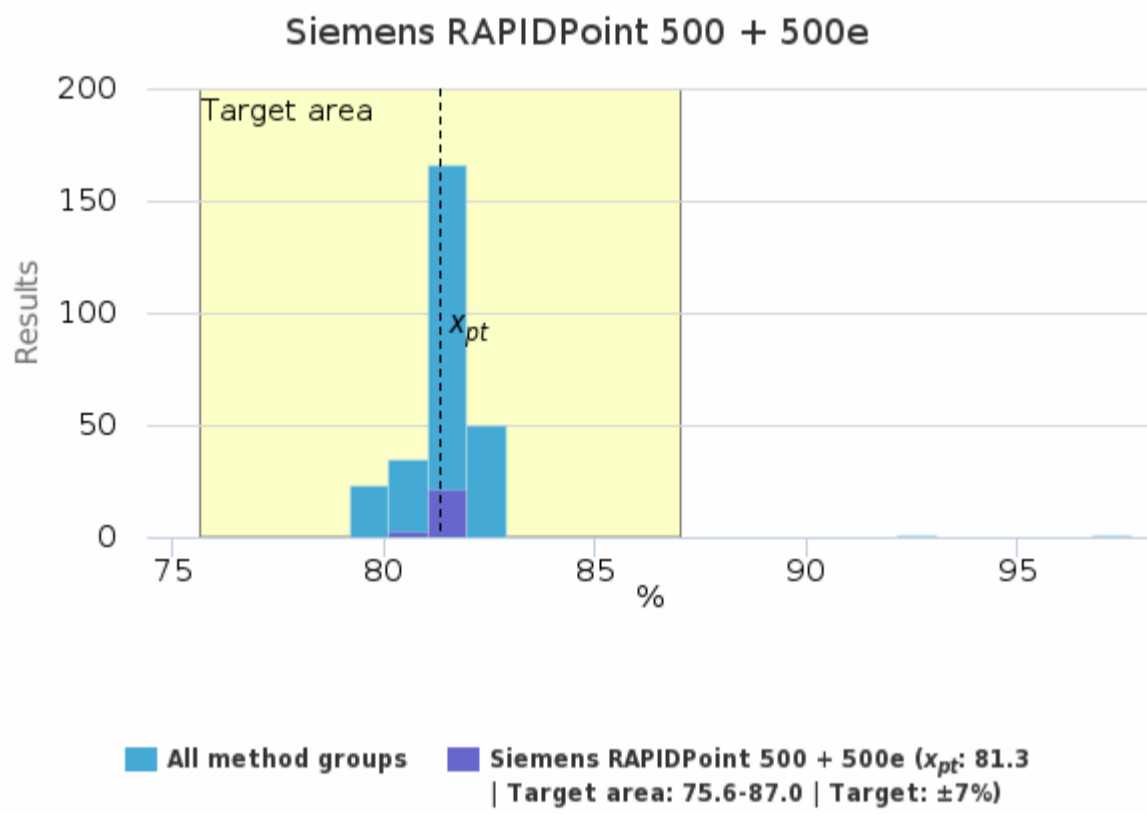
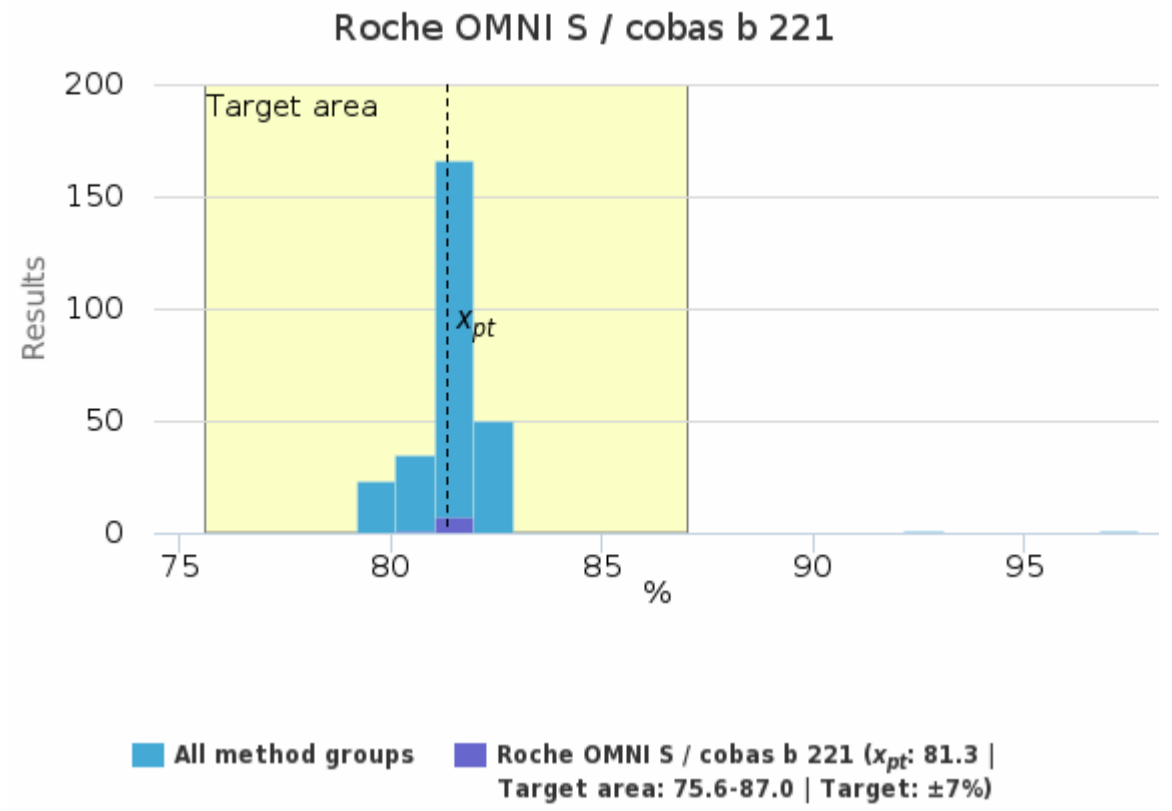
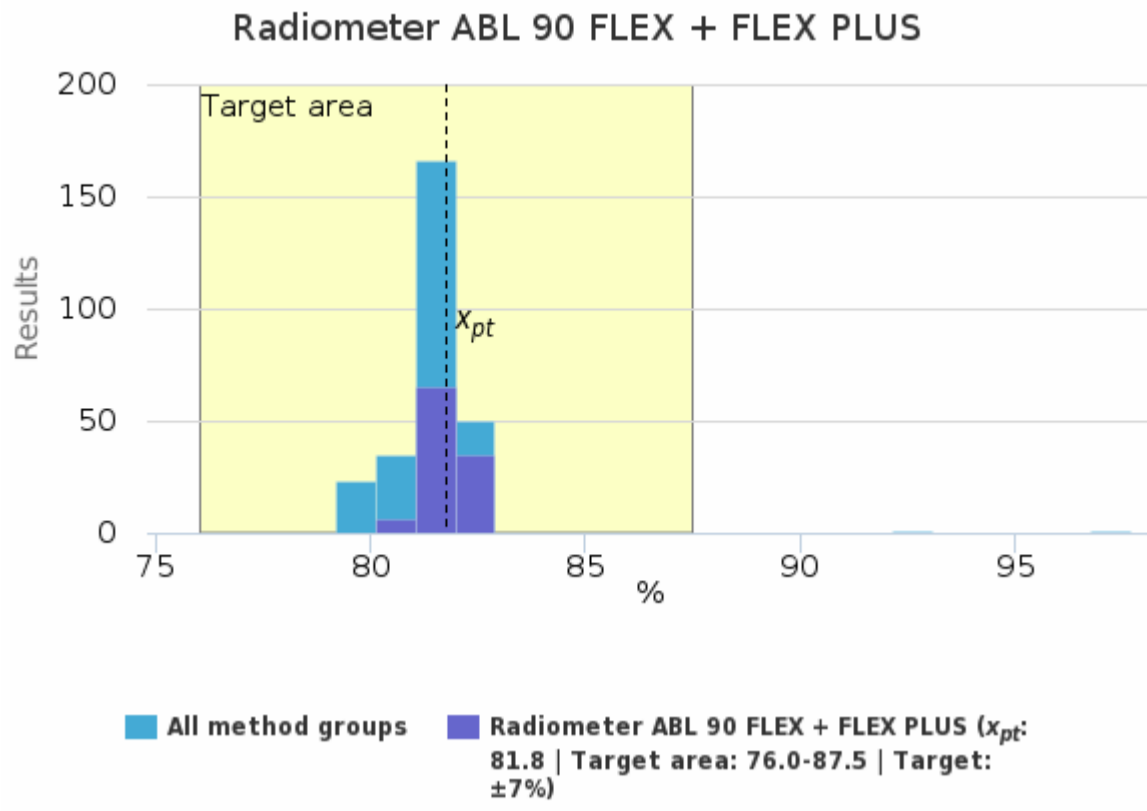


### Specimen S002 | FO2Hb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	80.0	80.0	0.4	0.5	<0.1	79.2	81.1	-	34
IL GEM Premier 5000	80.5	80.4	0.2	0.2	<0.1	80.3	80.8	-	8
Radiometer ABL 80 FLEX	81.1	81.1	1.1	1.3	0.8	80.3	81.8	-	2
Radiometer ABL 800-837 + FLEX	81.6	81.6	0.4	0.4	<0.1	80.5	82.5	2	94
Radiometer ABL 90 FLEX + FLEX PLUS	81.8	81.8	0.4	0.5	<0.1	80.6	82.7	1	106
Roche OMNI S / cobas b 221	81.3	81.4	0.2	0.3	<0.1	80.8	81.6	-	8
Siemens RAPIDPoint 500 + 500e	81.3	81.4	0.2	0.2	<0.1	80.9	81.6	-	24
<b>All</b>	<b>81.4</b>	<b>81.5</b>	<b>0.7</b>	<b>0.9</b>	<b>&lt;0.1</b>	<b>79.2</b>	<b>82.7</b>	<b>2</b>	<b>276</b>

### Specimen S002 | FO2Hb, % | histogram summaries in LabScala

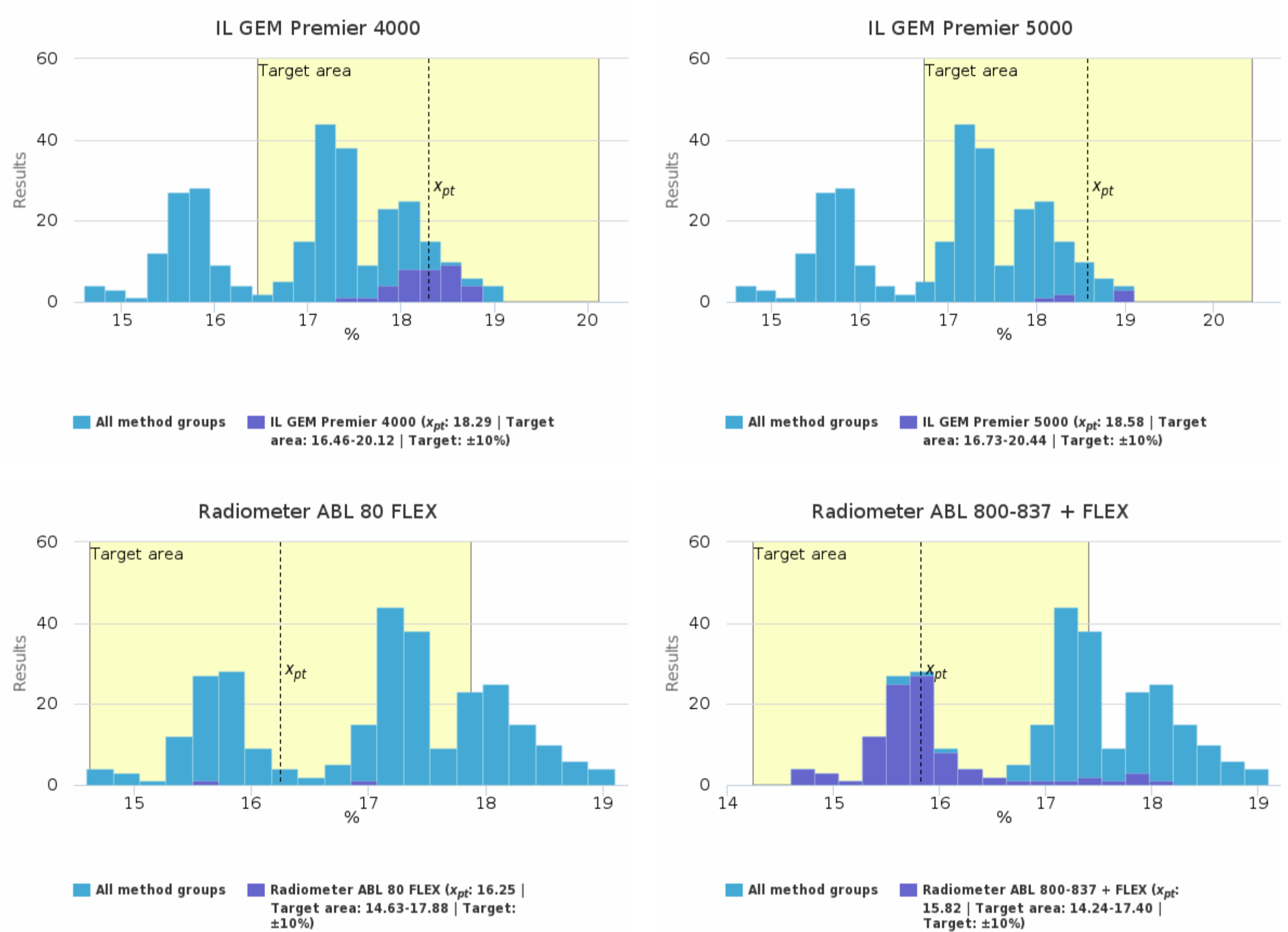


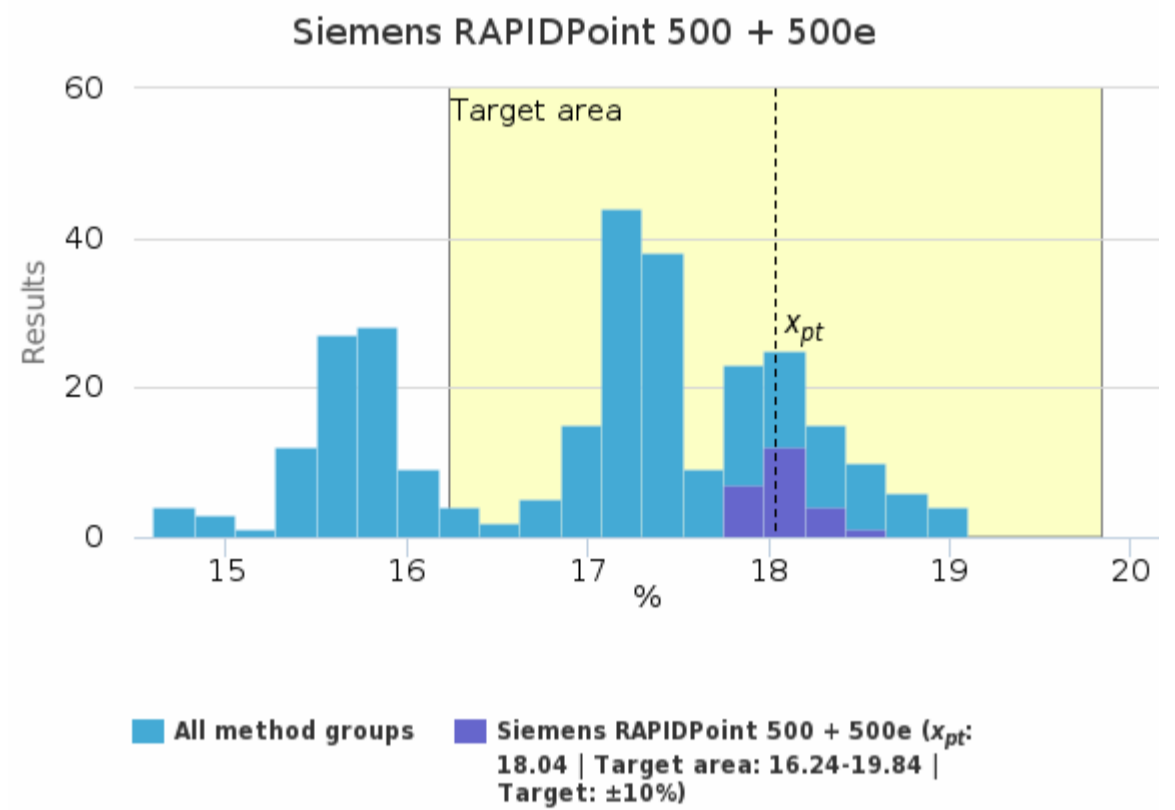
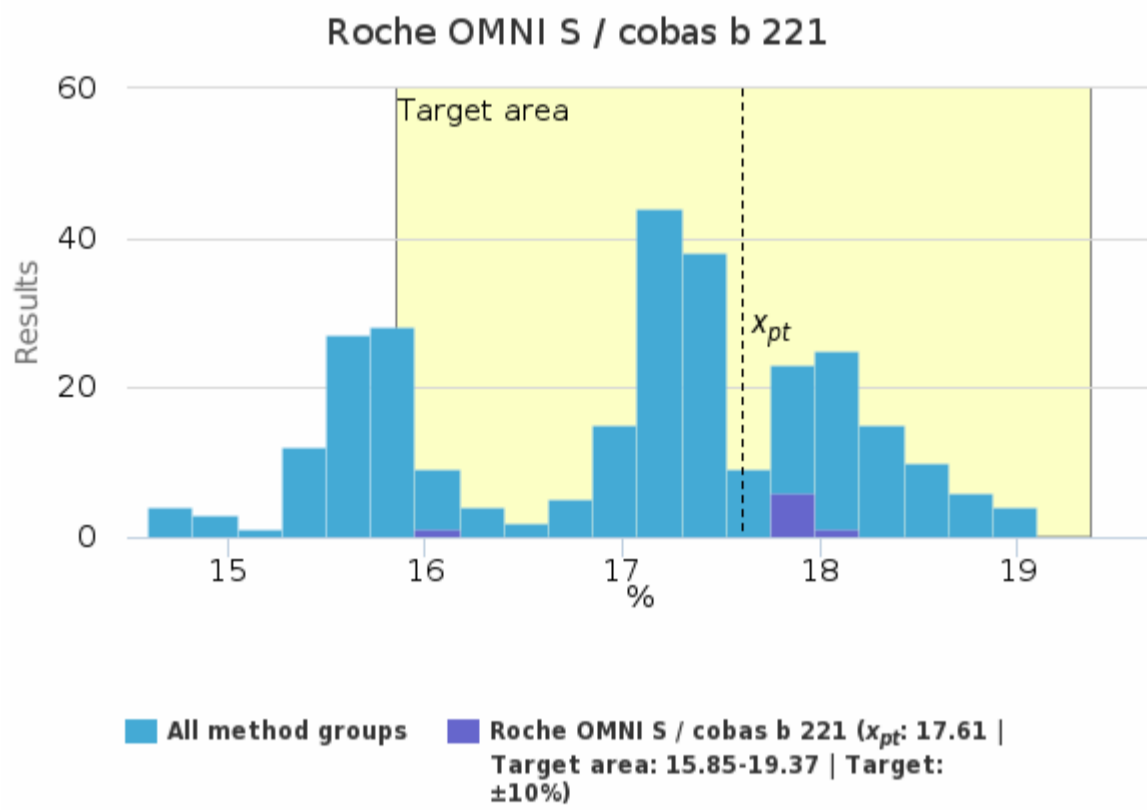
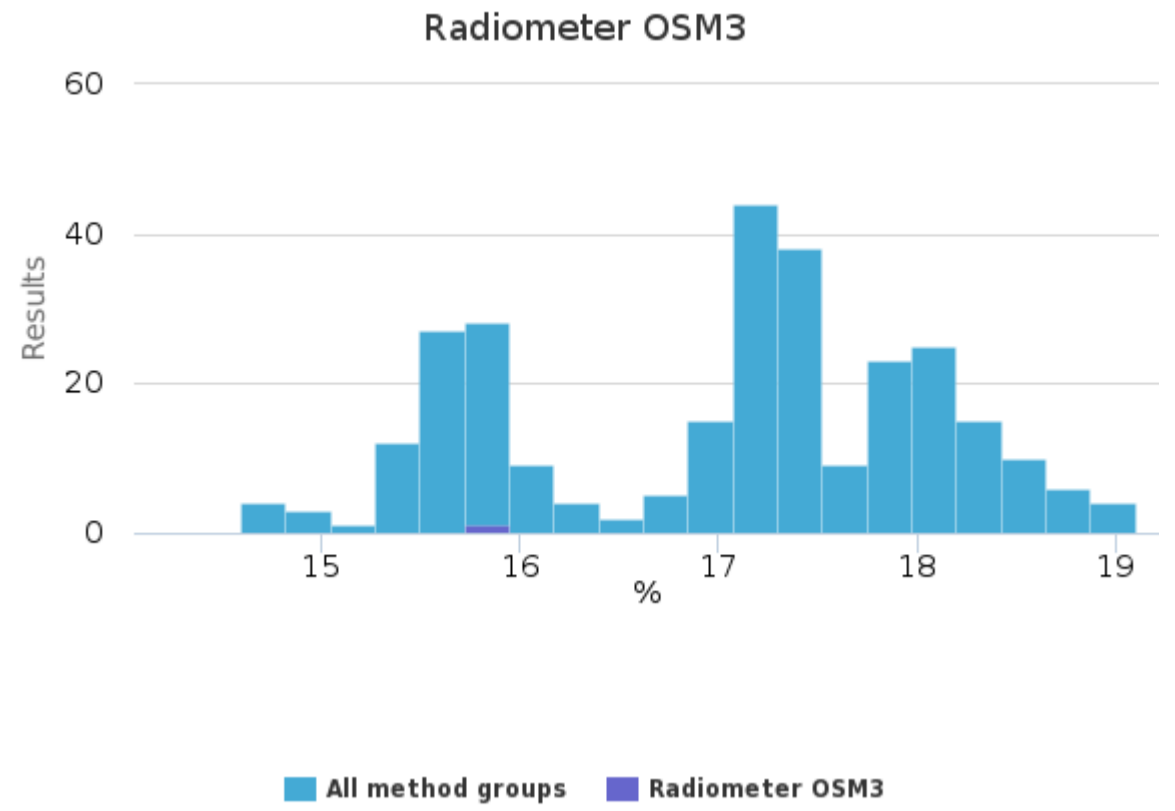
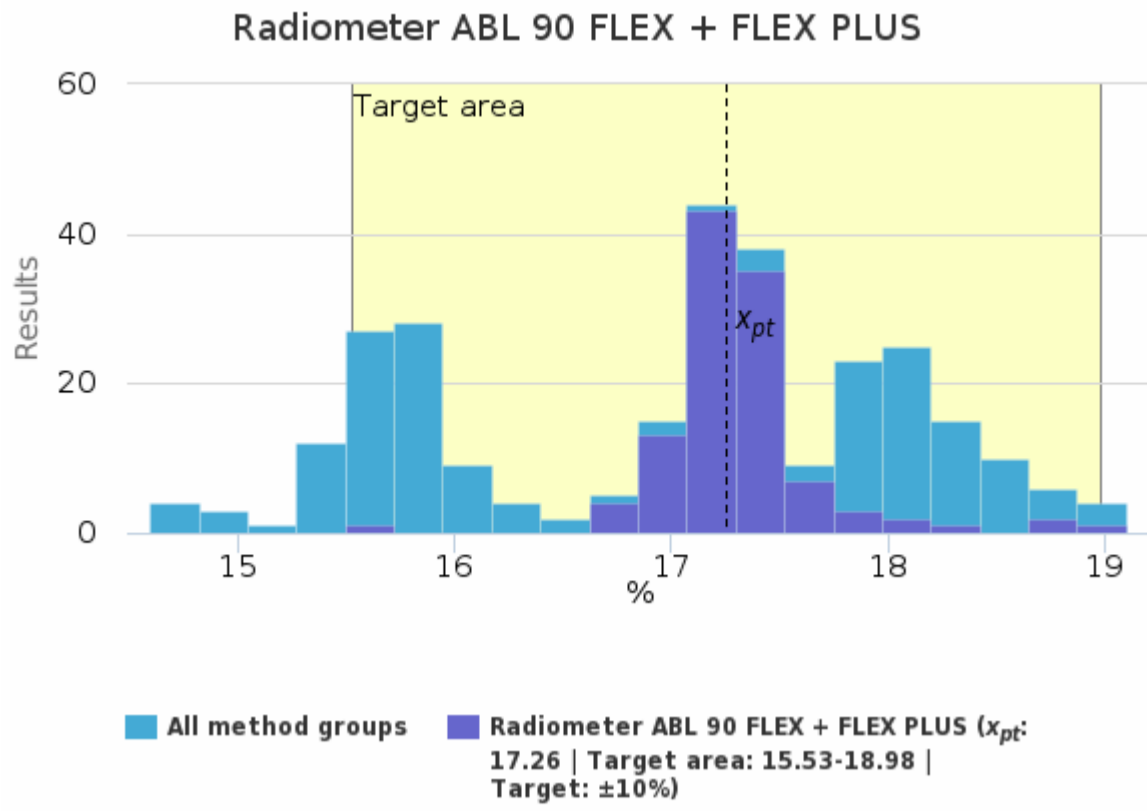


### Specimen S002 | FCOHb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	18.29	18.40	0.32	1.8	0.05	17.50	18.80	-	35
IL GEM Premier 5000	18.58	18.60	0.47	2.5	0.19	18.00	19.10	-	6
Radiometer ABL 80 FLEX	16.25	16.25	1.06	6.5	0.75	15.50	17.00	-	2
Radiometer ABL 800-837 + FLEX	15.82	15.80	0.60	3.8	0.06	14.60	17.80	2	96
Radiometer ABL 90 FLEX + FLEX PLUS	17.26	17.20	0.26	1.5	0.02	16.80	18.20	4	112
Radiometer OSM3	-	-	-	-	-	15.90	15.90	-	1
Roche OMNI S / cobas b 221	17.61	17.80	0.66	3.7	0.23	16.00	18.00	-	8
Siemens RAPIDPoint 500 + 500e	18.04	18.00	0.16	0.9	0.03	17.80	18.40	1	24
<b>All</b>	<b>17.02</b>	<b>17.20</b>	<b>1.04</b>	<b>6.1</b>	<b>0.06</b>	<b>14.60</b>	<b>19.10</b>	-	<b>284</b>

### Specimen S002 | FCOHb, % | histogram summaries in LabScala

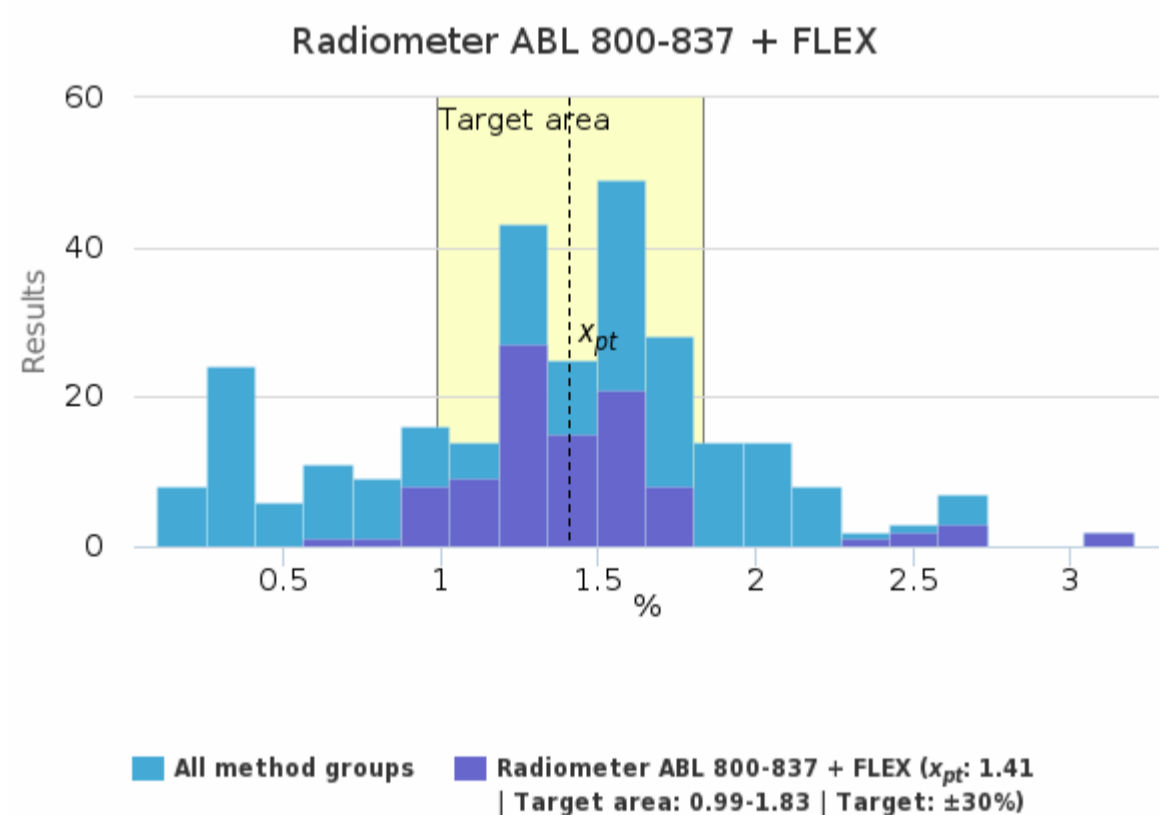
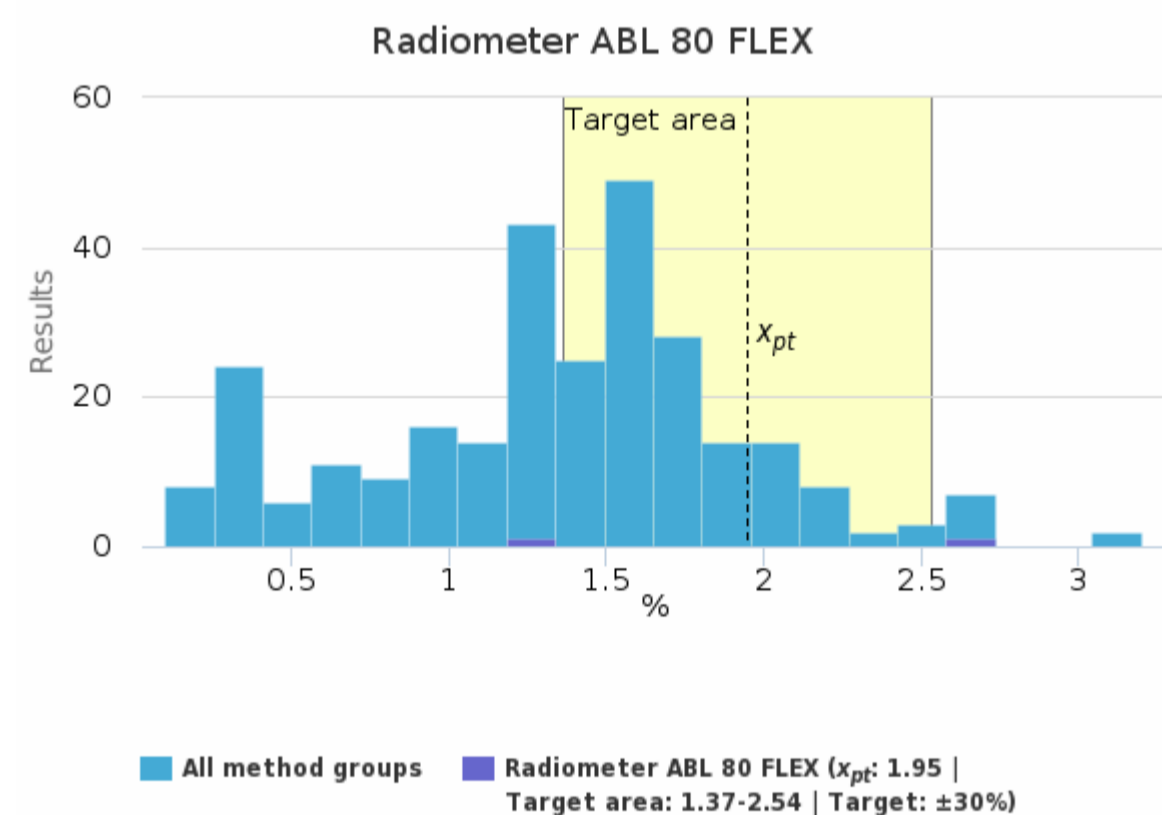
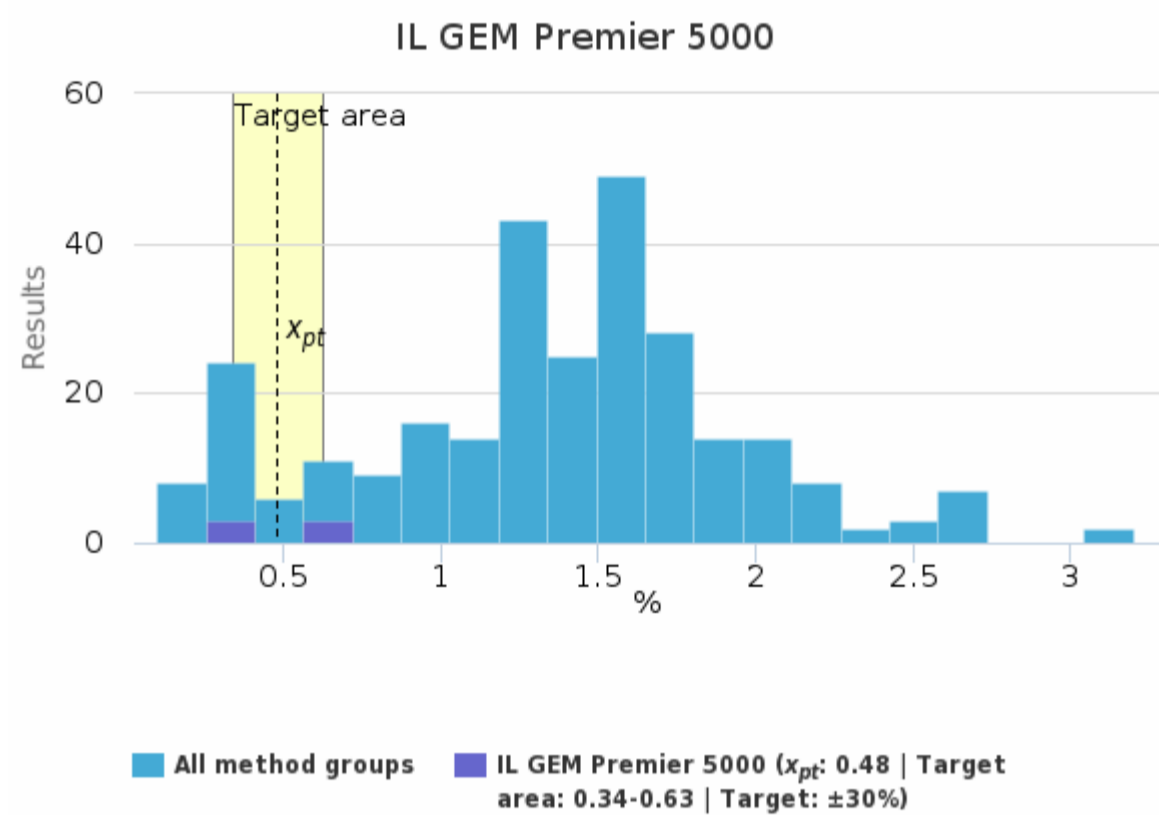
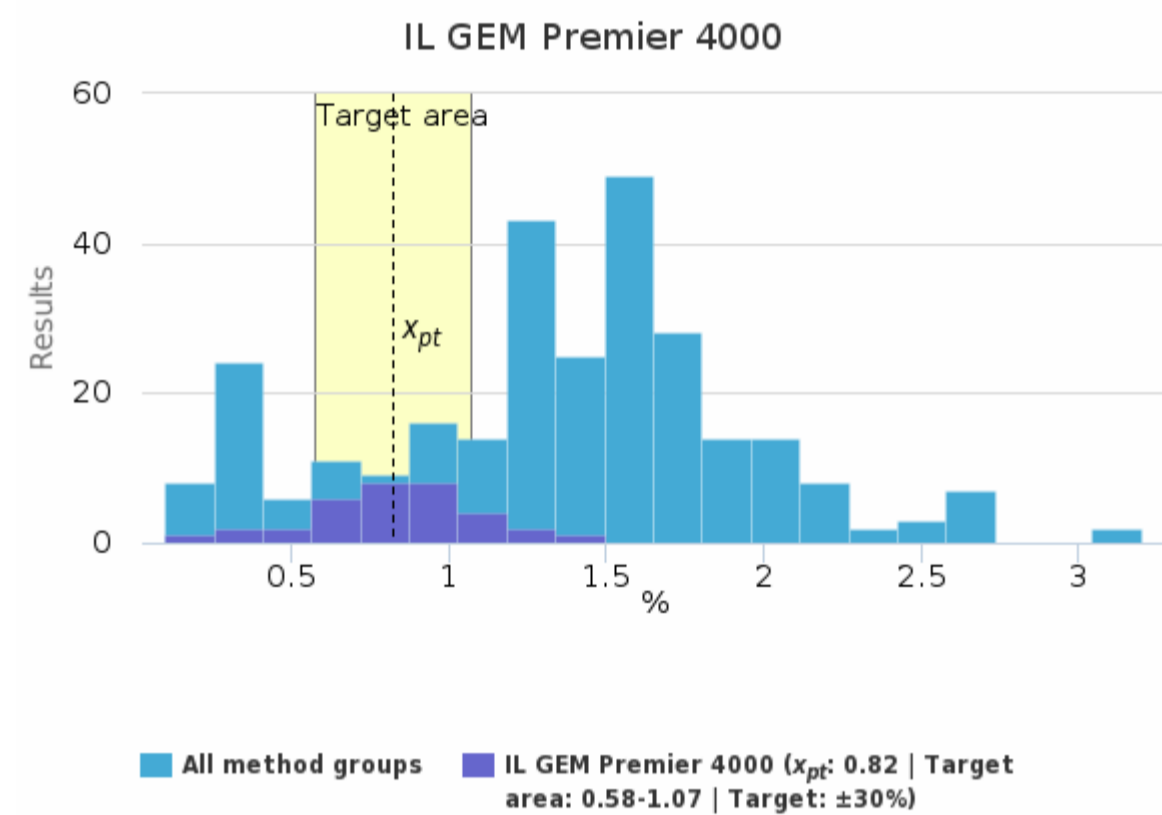


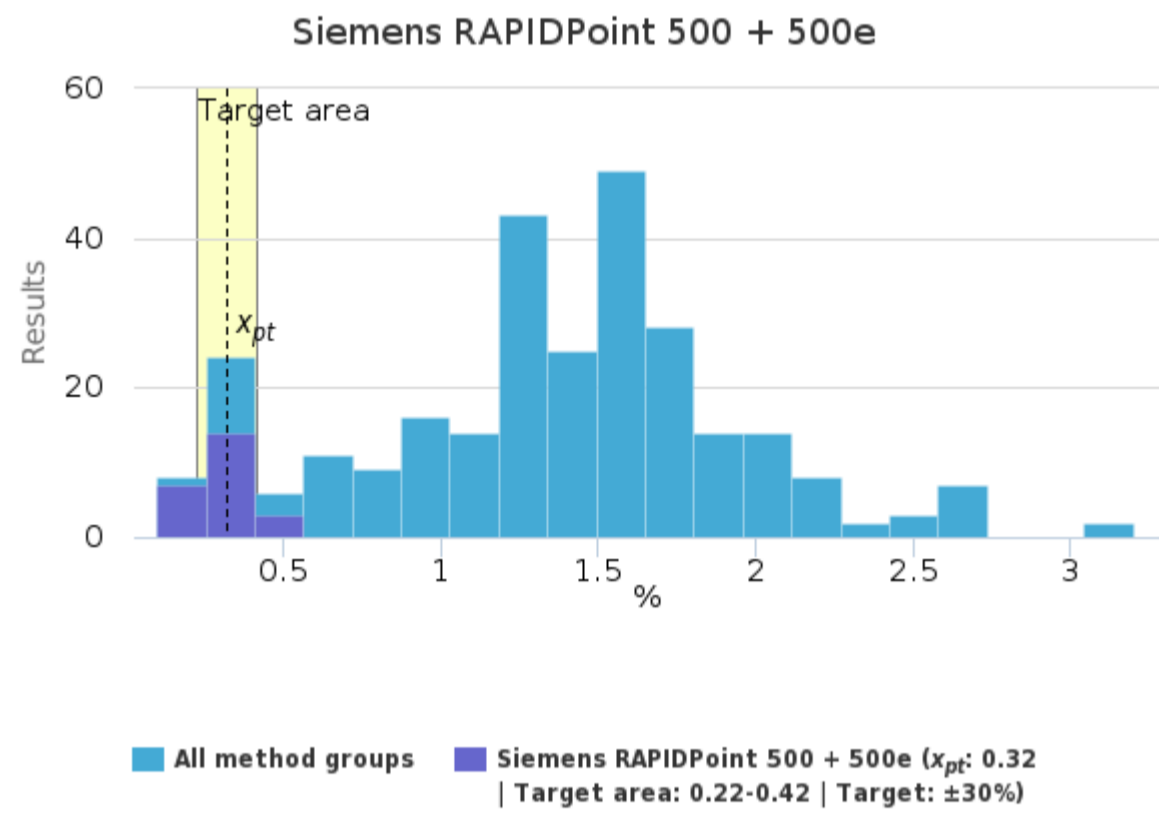
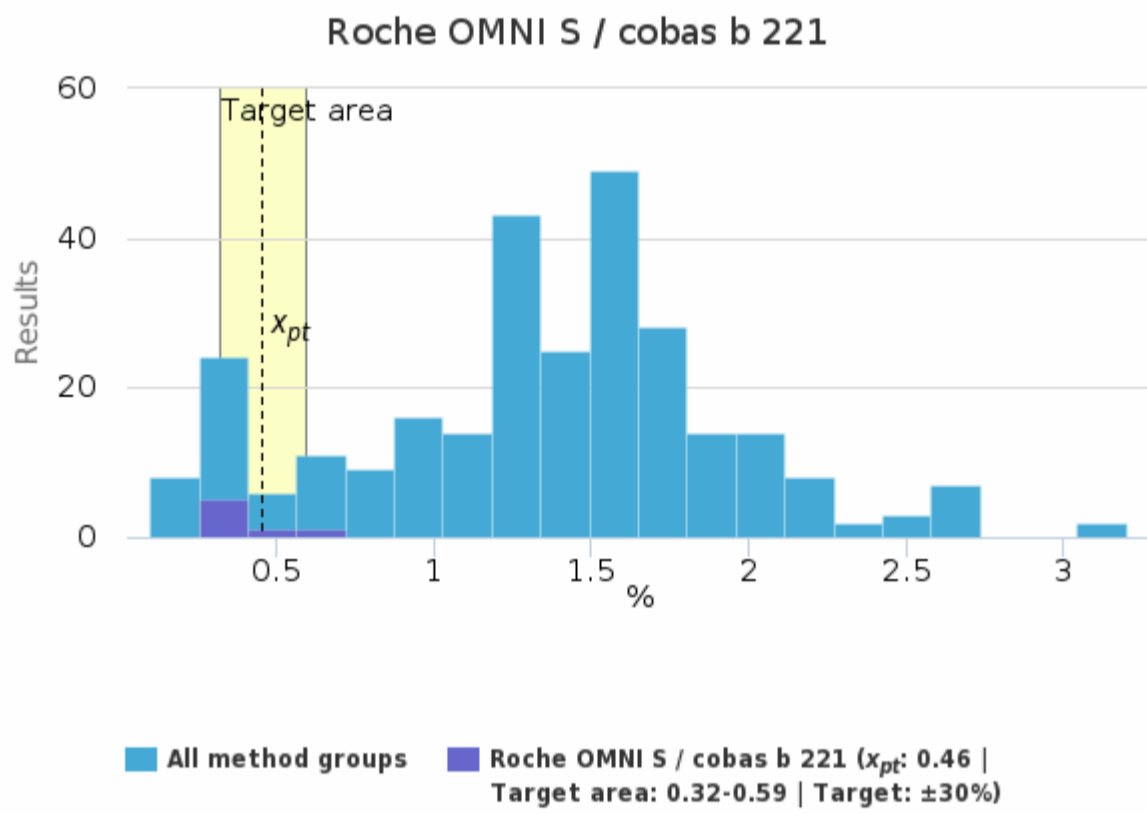
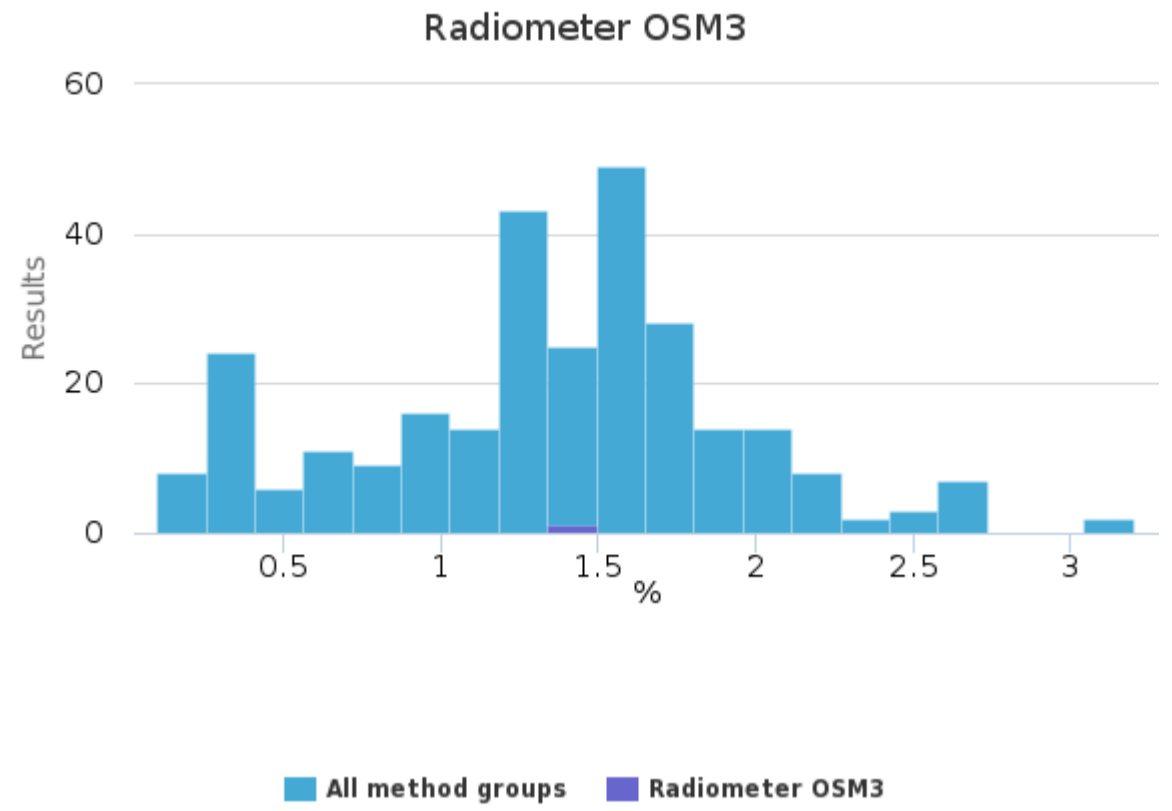
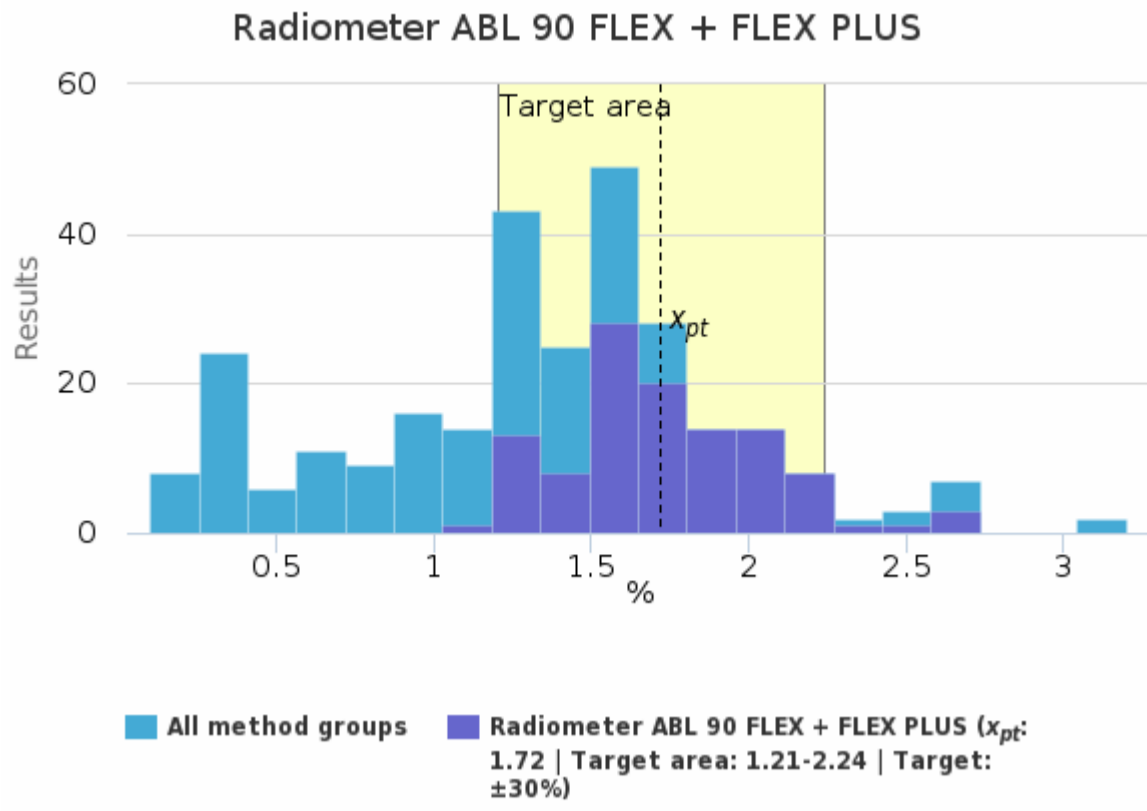


### Specimen S002 | FMETHb, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	0.82	0.80	0.26	31.8	0.04	0.20	1.40	-	34
IL GEM Premier 5000	0.48	0.45	0.20	42.2	0.08	0.30	0.70	-	6
Radiometer ABL 80 FLEX	1.95	1.95	1.06	54.4	0.75	1.20	2.70	-	2
Radiometer ABL 800-837 + FLEX	1.41	1.40	0.38	26.9	0.04	0.70	2.70	2	98
Radiometer ABL 90 FLEX + FLEX PLUS	1.72	1.70	0.32	18.6	0.03	1.10	2.60	1	111
Radiometer OSM3	-	-	-	-	-	1.40	1.40	-	1
Roche OMNI S / cobas b 221	0.46	0.40	0.11	24.8	0.04	0.40	0.70	-	7
Siemens RAPIDPoint 500 + 500e	0.32	0.30	0.11	34.3	0.02	0.10	0.50	-	24
<b>All</b>	<b>1.34</b>	<b>1.40</b>	<b>0.58</b>	<b>43.4</b>	<b>0.03</b>	<b>0.10</b>	<b>3.10</b>	<b>1</b>	<b>283</b>

### Specimen S002 | FMETHb, % | histogram summaries in LabScala

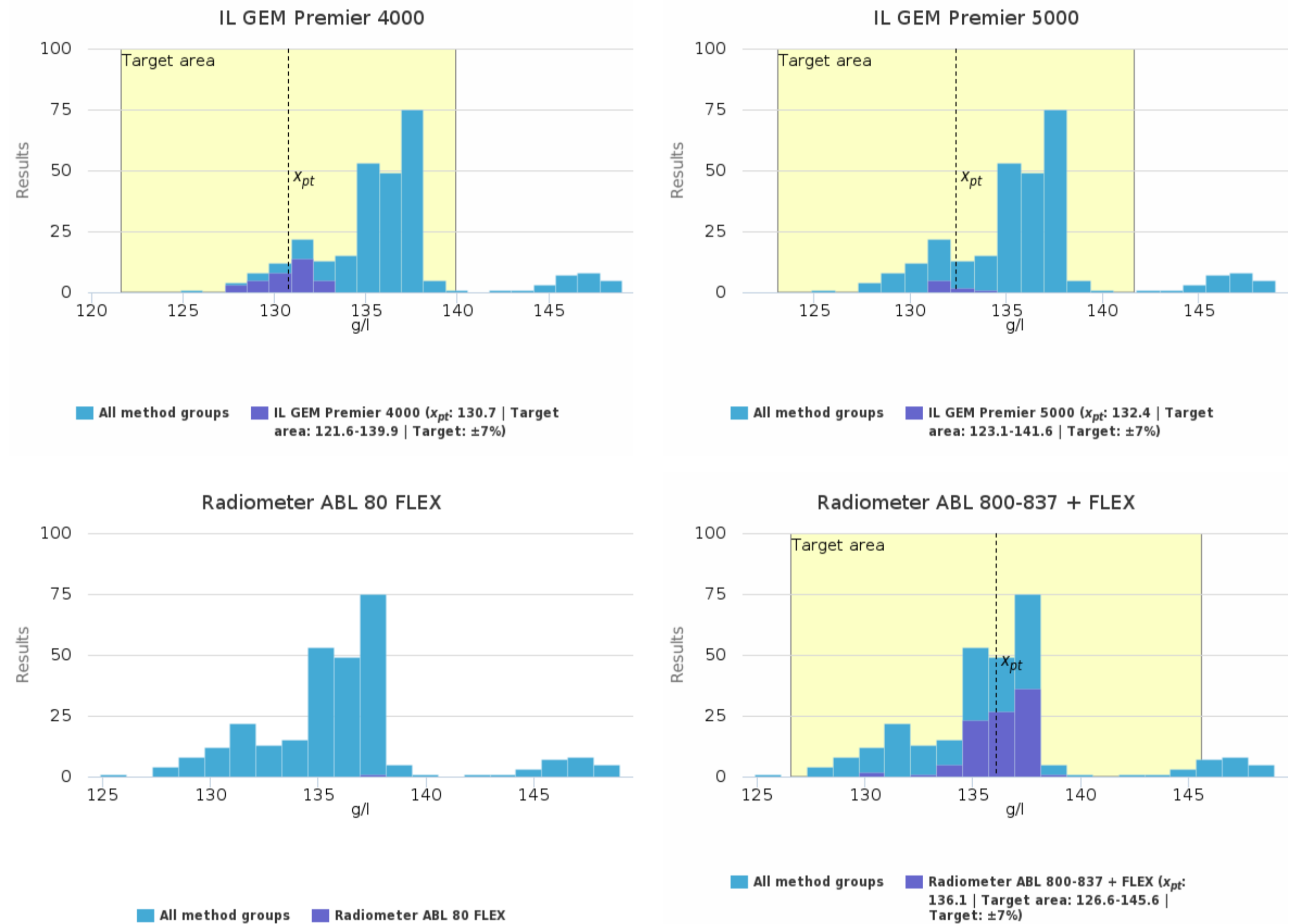




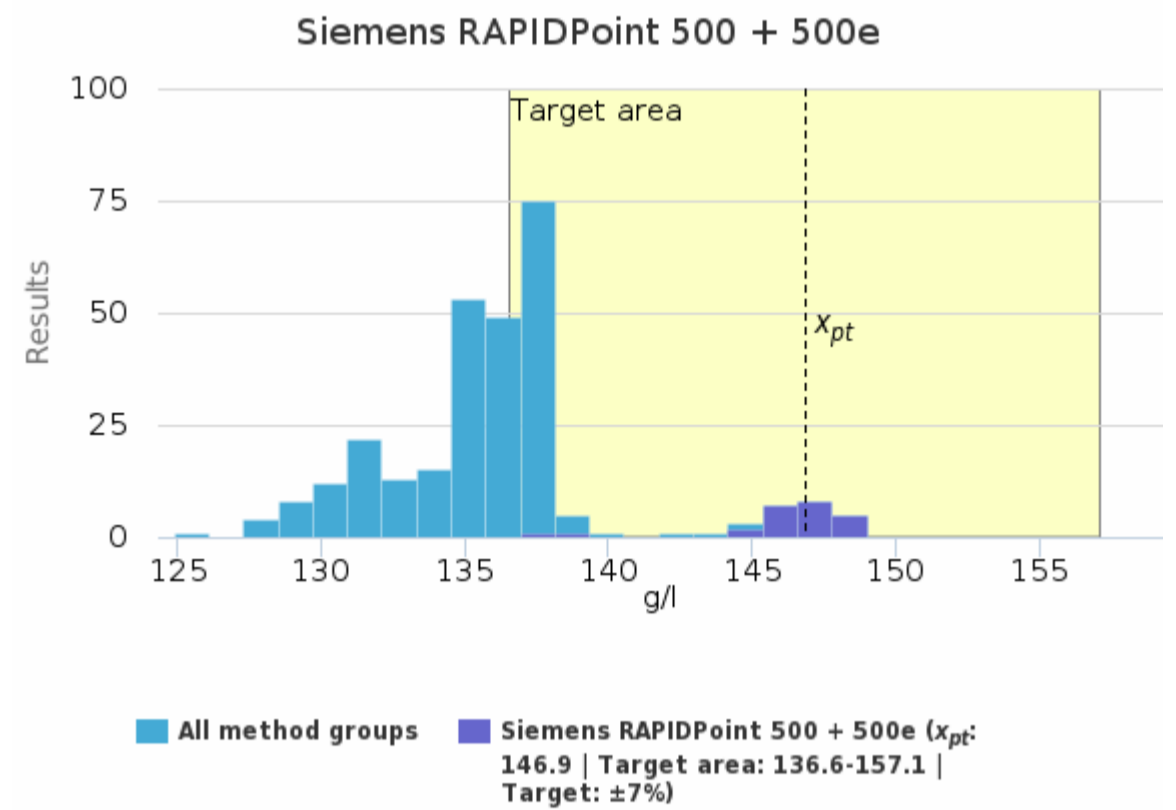
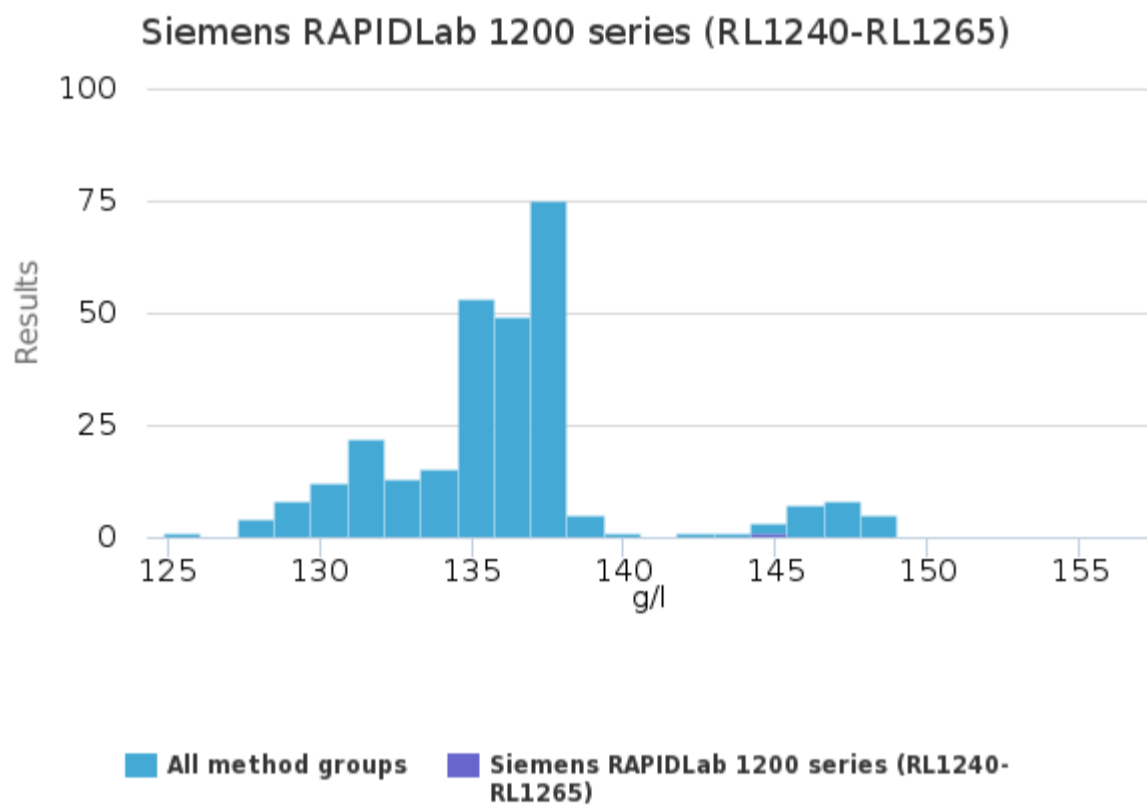
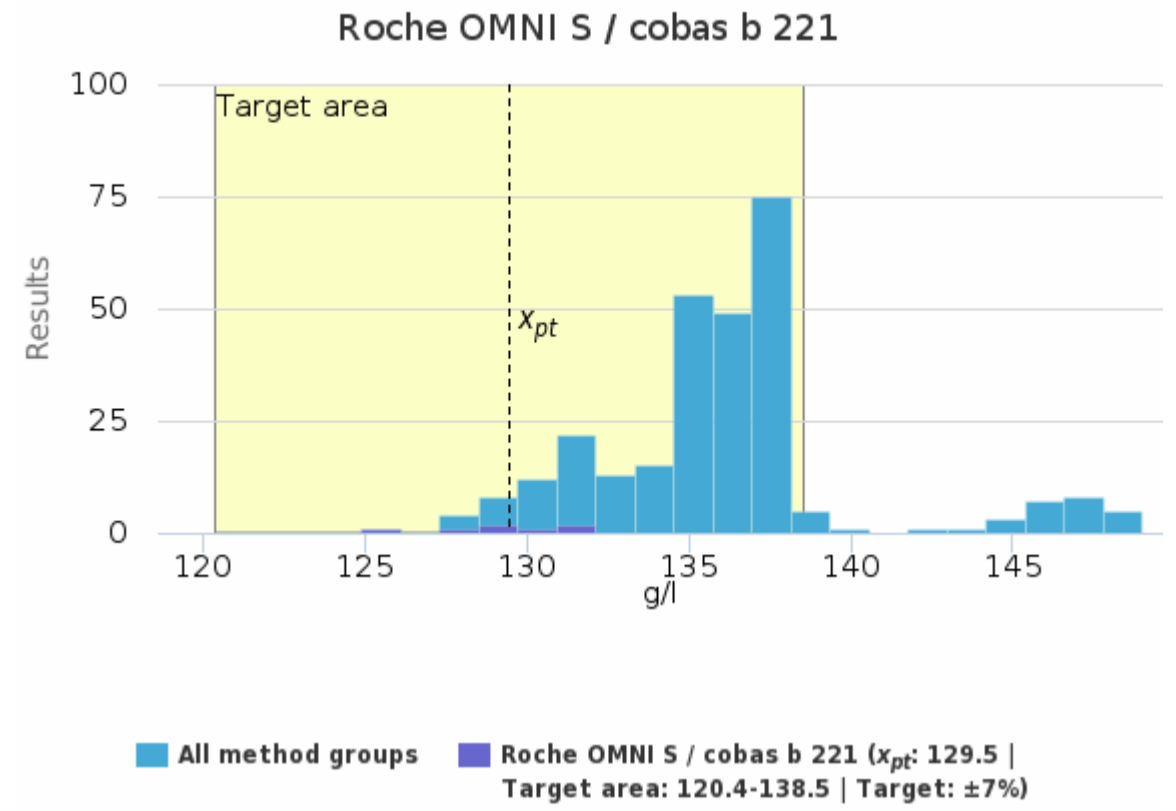
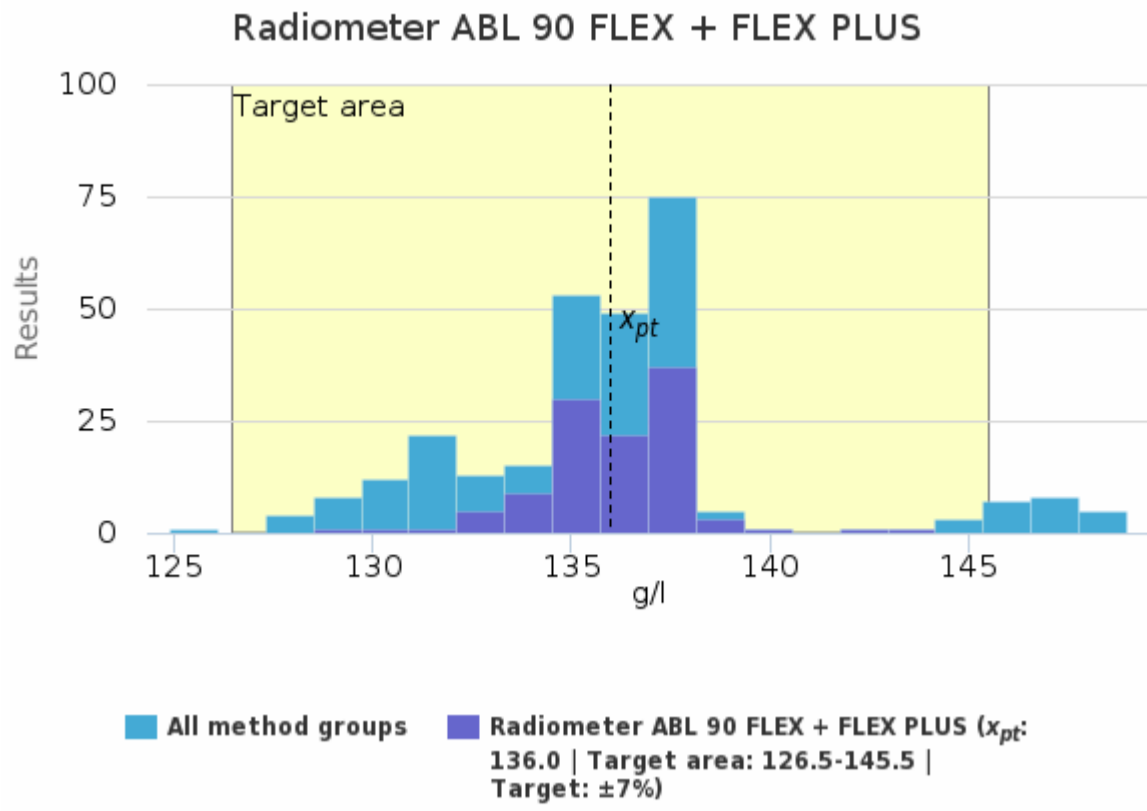
### Specimen S002 | ctHb, g/l

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	130.7	131.0	1.5	1.2	0.3	128.0	133.0	-	35
IL GEM Premier 5000	132.4	132.0	0.9	0.7	0.3	131.0	134.0	-	8
Radiometer ABL 80 FLEX	-	-	-	-	-	137.0	137.0	-	1
Radiometer ABL 800-837 + FLEX	136.1	136.0	1.1	0.8	0.1	133.0	139.0	2	95
Radiometer ABL 90 FLEX + FLEX PLUS	136.0	136.0	1.6	1.2	0.2	131.0	140.0	4	112
Roche OMNI S / cobas b 221	129.5	129.7	2.4	1.9	0.9	124.9	132.0	-	7
Siemens RAPIDLab 1200 series (RL1240-RL1265)	-	-	-	-	-	145.0	145.0	-	1
Siemens RAPIDPoint 500 + 500e	146.9	147.0	1.2	0.8	0.2	145.0	149.0	2	24
<b>All</b>	<b>135.8</b>	<b>136.0</b>	<b>3.9</b>	<b>2.9</b>	<b>0.2</b>	<b>124.9</b>	<b>148.0</b>	<b>3</b>	<b>283</b>

### Specimen S002 | ctHb, g/l| histogram summaries in LabScala



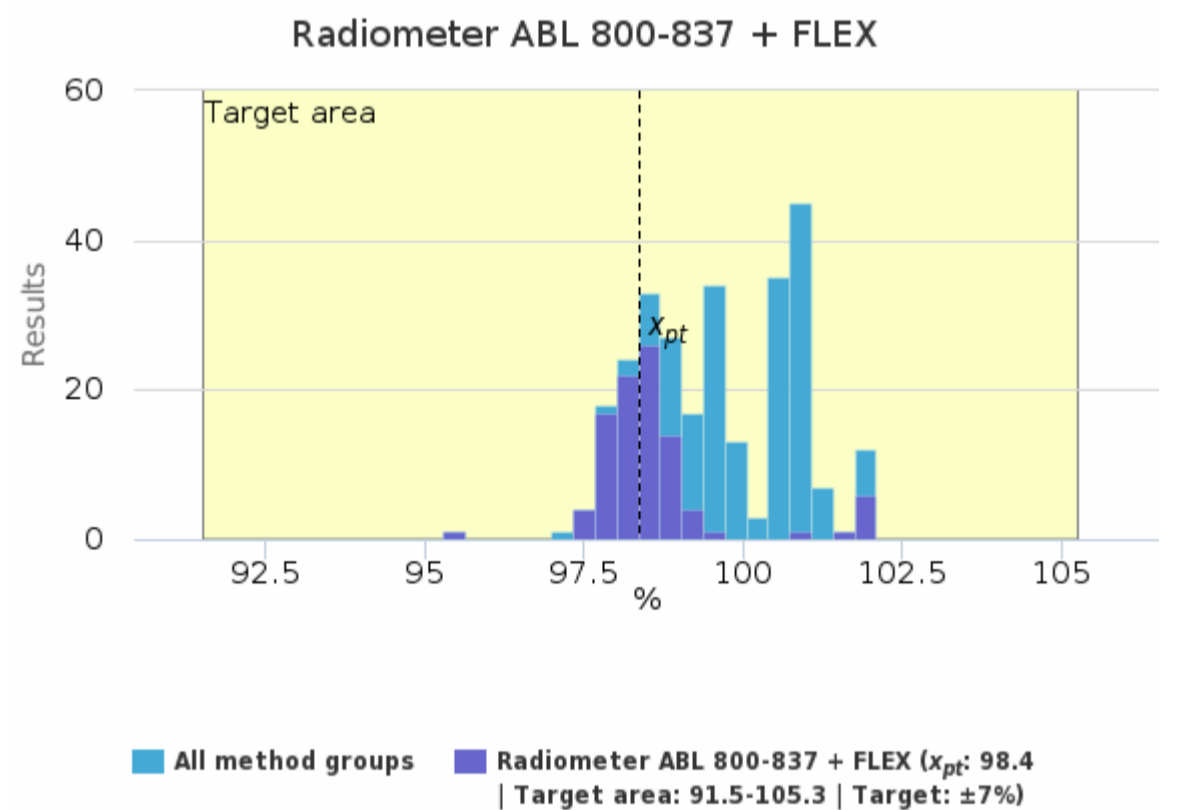
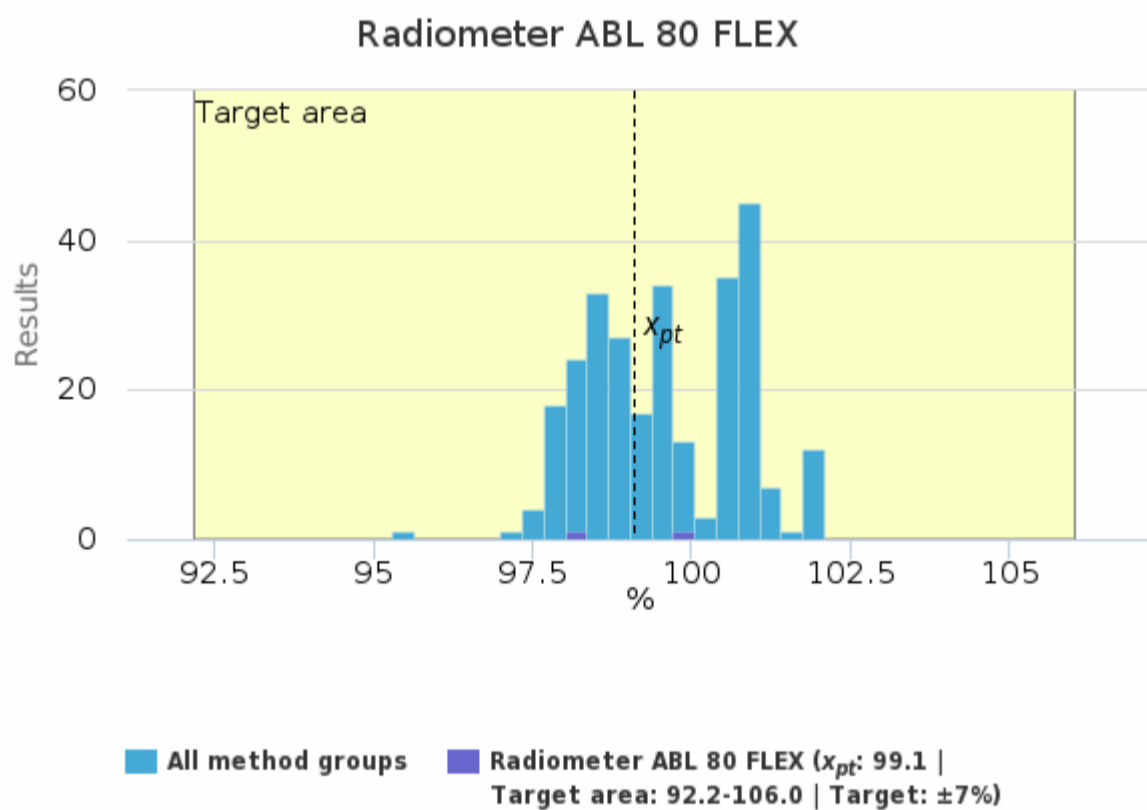
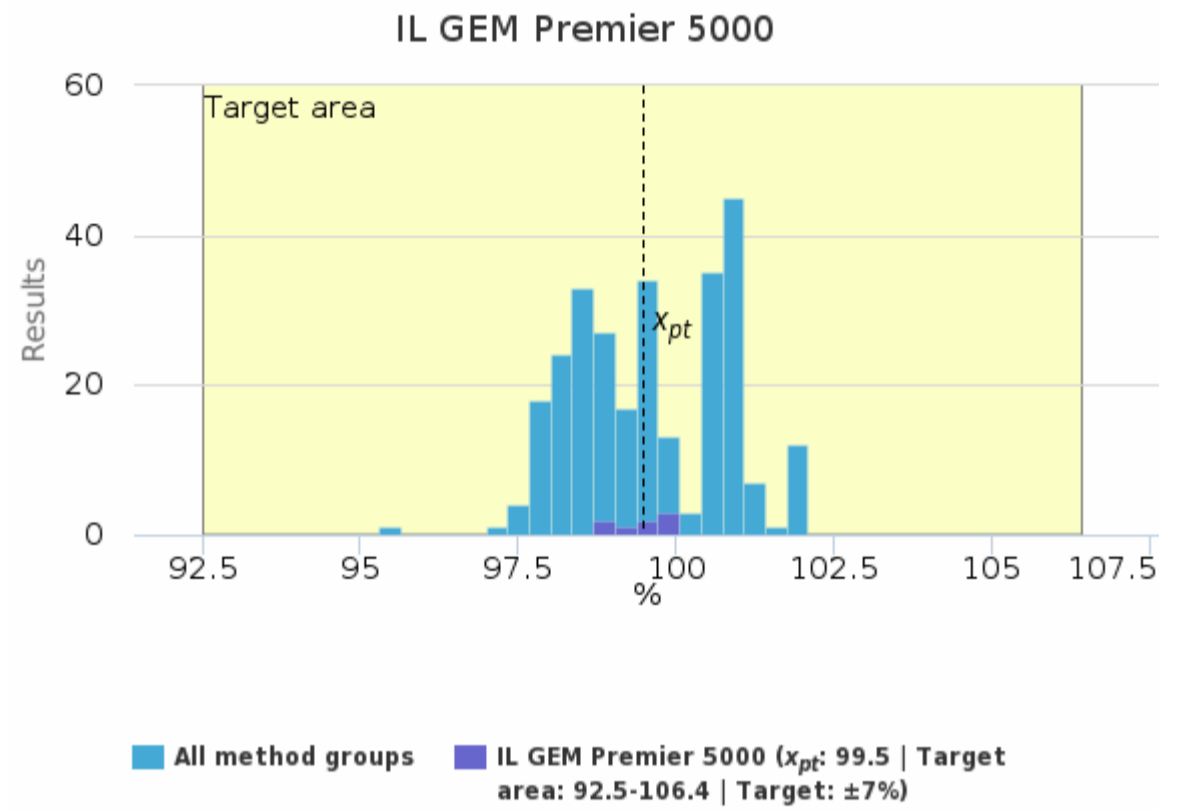
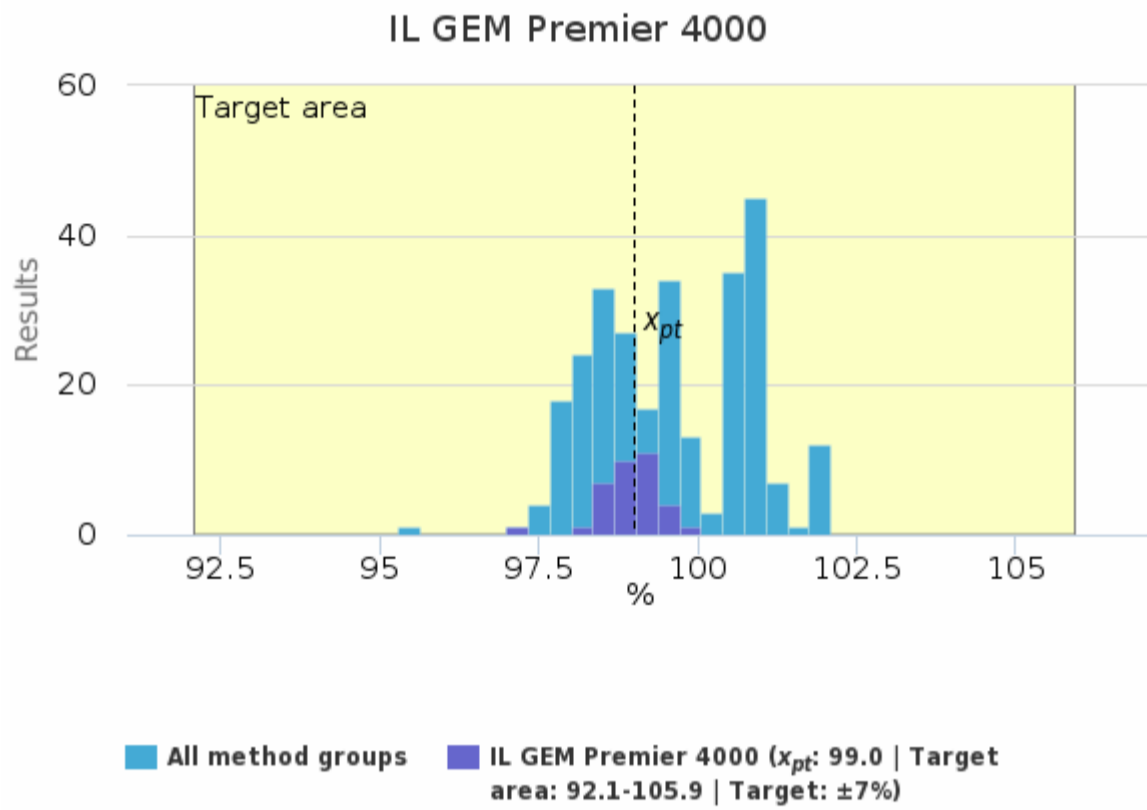


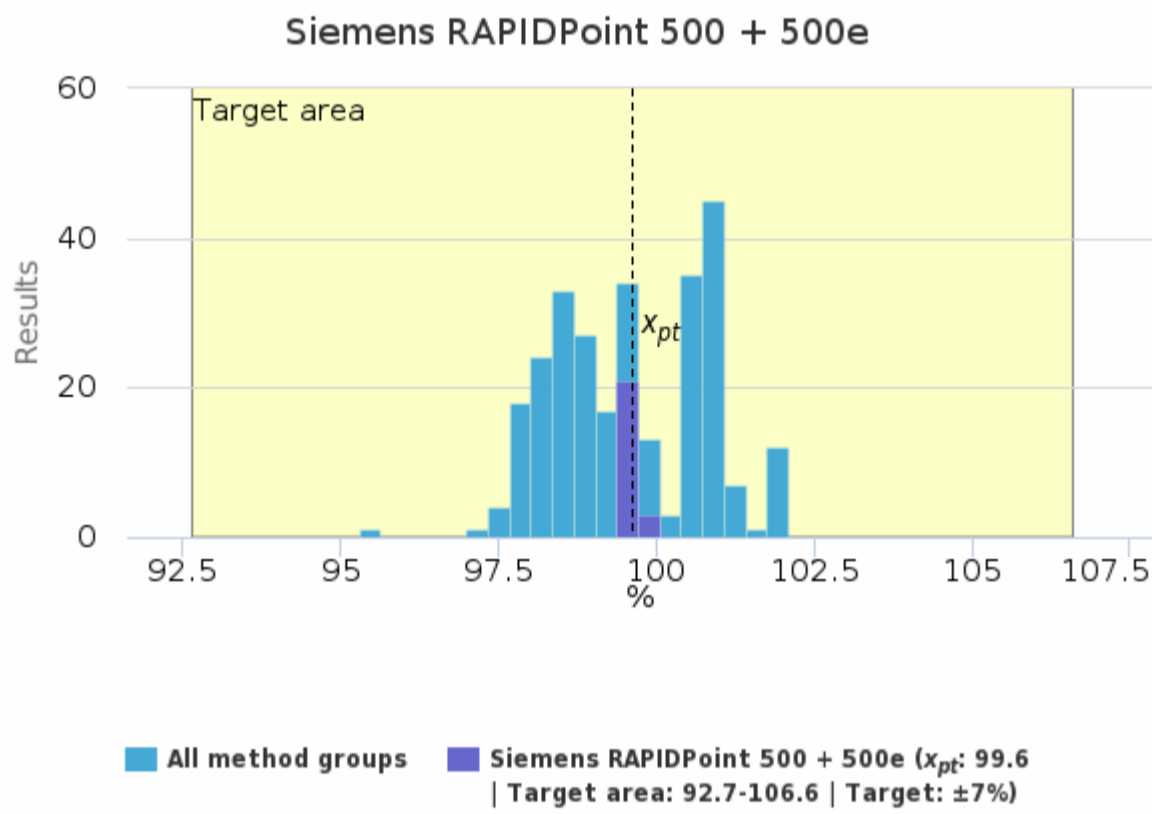
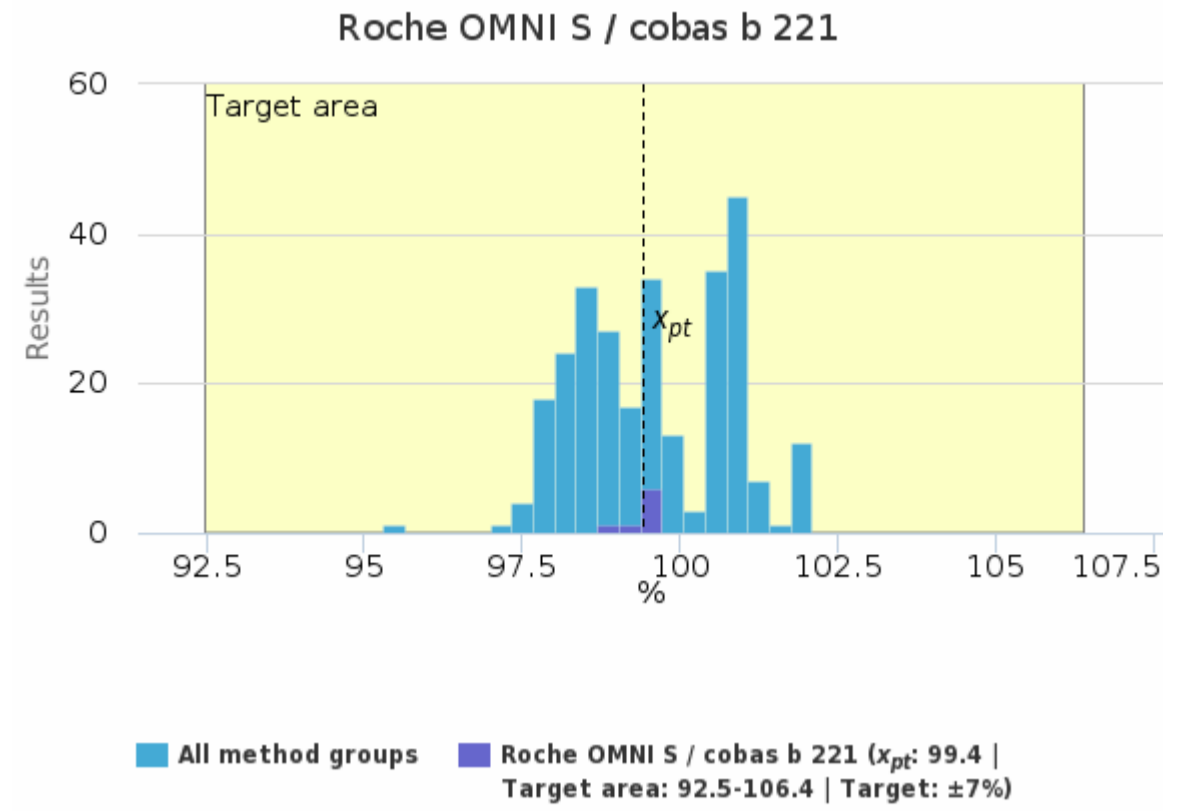
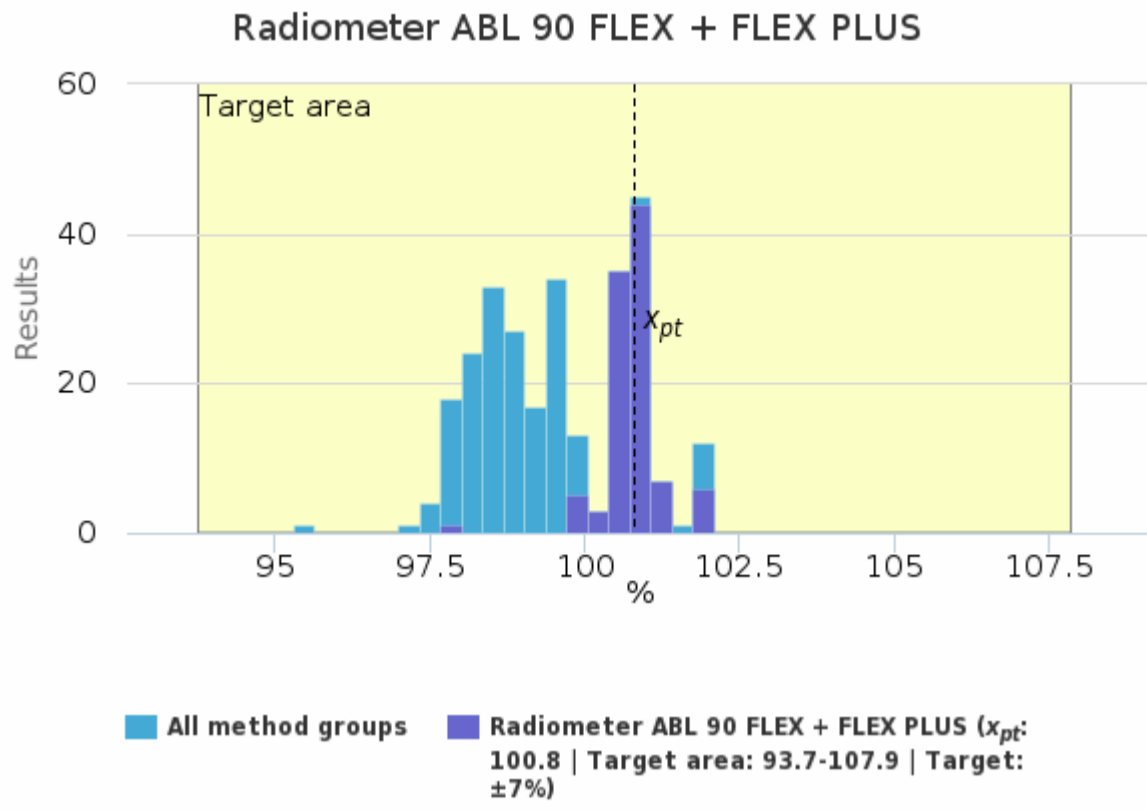


### Specimen S002 | sO<sub>2</sub>, %

Methodics	$x_{pt}$	Median	sd	CV%	SEM	min	max	Outliers	n
IL GEM Premier 4000	99.0	99.0	0.4	0.4	<0.1	98.2	100.0	1	35
IL GEM Premier 5000	99.5	99.4	0.5	0.5	0.2	98.9	100.0	-	8
Radiometer ABL 80 FLEX	99.1	99.1	1.3	1.3	0.9	98.2	100.0	-	2
Radiometer ABL 800-837 + FLEX	98.4	98.4	0.7	0.7	<0.1	95.3	101.6	6	97
Radiometer ABL 90 FLEX + FLEX PLUS	100.8	100.8	0.4	0.4	<0.1	99.9	102.0	1	101
Roche OMNI S / cobas b 221	99.4	99.6	0.3	0.3	0.1	98.7	99.7	-	8
Siemens RAPIDPoint 500 + 500e	99.6	99.6	<0.1	<0.1	<0.1	99.6	99.8	-	24
<b>All</b>	<b>99.6</b>	<b>99.6</b>	<b>1.2</b>	<b>1.2</b>	<b>&lt;0.1</b>	<b>97.1</b>	<b>102.1</b>	<b>1</b>	<b>275</b>

### Specimen S002 | sO<sub>2</sub>, % | histogram summaries in LabScala





**Report info****Participants**

126 participants from 10 countries.

**Report info**

Your own result should be compared to others using the same method.

Assigned values ( $\bar{x}_p$ , target values) are means of the results where results deviating more than  $\pm 3$  standard deviation from the median are removed. The standard uncertainty ( $u$ ) of

the assigned value is reported as standard error of the mean (SEM). Additionally, if the measurement uncertainty of the target value is large an automatic text is printed on the report: "The uncertainty of the assigned value is not negligible, and evaluations could be affected."

In case the client's result is the only one in the method group, no assigned value will be calculated, no target area shown, and no statistics calculated. In case there are only a few results in the client's own method group, the result can be compared to all method mean or to a group that is similar to the own method.

Results reported with  $<$  or  $>$  -signs cannot be included in the statistics.

For information on report interpretation and performance evaluation, please see the "EOAS Interpretation guidelines" LabScala User instructions (top right corner ?Help link).

External Quality Assessment Scheme

## Haemoxymeters Round 1, 2023

### Specimens

Sample S001 (LQ750923011) and sample S002 (LQ750923012) were hemoglobin solution of animal origin.

Based on the previous tests and the results of this round, the samples were homogeneous, stable and suitable for the external quality assessment scheme. The materials were sent without temperature control packaging.

### Report info

Please see the description of the data analysis on the last page of the laboratory-specific histograms and Numerical Summary reports. It is important to read the Final report first, because it contains important information of the samples and results in each round.

### Comments – Expert

In both S001 and S002, FO<sub>2</sub>Hb was relatively high (93.2% and 81.4%). Both samples showed a uniform distribution. Overall CV% were both low (0.9% and 0.9%), and all method groups' results are well within the target areas.

The overall FCOHb results for both samples were divided into 3-4 groups in the histograms. For sample S001 the overall CV% was high (41.3%). In the ABL 800-837+FLEX group (n=99) CV% was 51.3% and several clients reported higher results than the rest of their group. The same clients also reported higher results for S002 as well. For S001, the ABL 90 FLEX+FLEX PLUS group and RAPIDPoint 500 + 500e group both showed a low CV% and most of these results were within the target areas. For sample S002, with a higher overall fraction of mean 17.02%, all CV% were lower and most of the clients were within the target area for their groups.

The FMETHb level was relatively low in both samples (1.55% and 1.34%), with broad histograms. For sample S001 some clients reported a result of zero. The Radiometer groups were clearly higher than the mean values of other groups in both samples, this is consistent with results from previous rounds.

The total concentration of haemoglobin, ctHb, has a mainly unimodal distribution for both samples (S001 low and S002 high), with an overall CV% of 4.5% and 2.9% respectively. Method group RAPIDPoint 500 + 500e lies in a separate, higher group for both samples.

The overall sO<sub>2</sub> level was high in both samples, S001 97.5% and S002 99.6%. The distribution for S001 is bimodal with ABL 800-837+FLEX in the lower group and ABL 90 FLEX+FLEX PLUS in the higher group. Some clients reported saturation higher than 100%, mostly for sample S002. In ABL 90 FLEX+FLEX PLUS group there was one sO<sub>2</sub> result from sample S002 reported as >102%.

### End of report

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2023-04-26

### FINAL REPORT

Product no. 2150

Samples sent	2023-03-20
Round closed	2023-04-07
Final report	2023-04-26

### Request for correction

Typing errors in laboratory's result forms are on laboratory's responsibility. Labquality accepts responsibility only for result processing. Requests must be notified by writing within three weeks from the date of this letter.

### Authorized by

EQA Coordinator  
Anna-Riitta Vanhanen  
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