



So how can we compare the accuracy of devices?

Let's take our lead from the European Society of Hypertension validation protocol and start by looking at what proportion of readings fall into three categories, errors greater than +/-5mmHg, +/-10mmHg and +/-15mmHg. A device can lose one point for each reading out by more than +/-5, two points for each reading out by more than +/-10 and three points for each reading out by more than +/-15. This scoring system is applied to both Systolic values and Diastolic values. Scores for 'validated' devices range from 10 to 182 with the mean being approximately 105.

Novacor Diasys 3 Plus – Loses 10 points

Novacor Diasys 3 – Loses 28 points

Microlife WatchBP 03 – Loses 99 points

Spacelabs OnTrak – Loses 106 points

		Year Validated	sys ± 5	sys ± 10	sys ± 15	dia ± 5	dia ± 10	dia ± 15	Score
Novacor	Diasys 3 plus	2018	94.9%	100.0%	100.0%	94.9%	100.0%	100.0%	10
Novacor	Diasys 3	2018	75.8%	100.0%	100.0%	96.0%	100.0%	100.0%	28
ScottCare	ABP-320	2013	82.1%	96.8%	100.0%	88.6%	99.2%	100.0%	37
A&D	TM-2430	1998	84.0%	97.0%	100.0%	81.0%	98.0%	100.0%	45
BoSo	TM-2430 PC2	1998	84.0%	97.0%	100.0%	81.0%	98.0%	100.0%	45
Cardioline	Walk200b	2010	71.7%	94.9%	99.0%	79.8%	94.9%	100.0%	72
IEM	Mobilograph	2010	71.7%	94.9%	99.0%	79.8%	94.9%	100.0%	72
Medset	Scanlight-III	2010	71.7%	94.9%	99.0%	79.8%	94.9%	100.0%	72
Welch Allyn	ABPM 7100	2010	71.7%	94.9%	99.0%	79.8%	94.9%	100.0%	72
Sorin	Agilis	2005	78.8%	91.9%	97.0%	70.7%	92.9%	97.0%	99
Microlife	WatchBP 03	2009	68.7%	83.8%	97.0%	79.8%	97.0%	100.0%	99
Schiller	BR-102 Ausc	2006	69.7%	94.9%	100.0%	72.7%	88.9%	94.9%	105
Spacelabs	OnTrak	2014	69.7%	90.9%	98.0%	77.8%	89.9%	97.0%	106
Ela	Agilis	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
Mortara	Ambulo 2400	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
Riester	ri-cardio	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
Suntech	Oscar 2	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
Suntech	Bravo	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
Welch Allyn	6100	2004	71.7%	86.9%	94.9%	72.7%	88.9%	97.0%	128
BPLab	BPLab	2010	66.0%	90.0%	98.0%	61.0%	87.0%	97.0%	134
Schiller	BR-102 Osci	2006	68.7%	87.9%	93.9%	63.6%	87.9%	96.0%	146
Tiba Medical	Ambulo 2400	2010	60.0%	86.0%	98.0%	60.0%	85.0%	96.0%	156
Omron	Omron 24/7	2008	52.0%	82.0%	96.0%	54.0%	86.0%	96.0%	182
Meditech	ABP-04	1998	52.0%	82.0%	96.0%	54.0%	86.0%	96.0%	182
Meditech	ABP-05	2008	52.0%	82.0%	96.0%	54.0%	86.0%	96.0%	182
Average Values		2007	71.0%	90.5%	97.4%	73.8%	91.8%	97.9%	105

It is also important to note that the average age of all these validations is 12 years. Not only have protocols been updated during this time to make validations more challenging, but it is necessary for manufactures to adapt devices as old components and parts are no longer available and this will, over time, invalidate the original validation.