COMPETITIVE EVALUATION OF **NIBP** IN **MID-RANGE MONITORS**

STUDY OVERVIEW

GOALS

Five patient monitors from four leading manufacturers were tested for their **performance using three commonly used noninvasive blood pressure (NIBP) simulators**. The test focused on how the monitors performed in terms of sensitivity, determination time, and measurement range between high and low systolic and diastolic pressures at low, normal and high pulse rates.

1 SENSITIVITY

PERCENT OF SUCCESSFUL DETERMINATIONS

2 DETERMINATION TIME

TIME REQUIRED FOR THE SYSTEM TO RUN THROUGH THE FULL CYCLE OF THE BLOOD PRESSURE MEASUREMENT AT GIVEN SIMULATION SETTINGS

3 RANGE OF DIASTOLIC AND SYSTOLIC READINGS

MINIMUM AND MAXIMUM DIASTOLIC AND SYSTOLIC PRESSURE VALUES EACH DEVICE WAS able TO RECORD, AT LOW PULSE RATE (≤ 60 BPM), MID-RANGE PULSE RATE (>60-160 BPM), AND HIGH PULSE RATE (>160 BPM)

TEST 1: SENSITIVITY COMPARISON

MID-RANGE MONITOR COMPARISON	SENSITIVITY (100% AMPLITUDE)	SENSITIVITY (MINIMAL AMPLITUDE 10%)
GE Healthcare B125	**98%**	**90%**
Philips Efficia CM120	**89%**	**40%**
Philips IntelliVue MX430	**90%**	**80%**
Mindray IPM12	**87%**	**67%**
Nihon Kohden Life Scope 3000	**88%**	**57%**

100% amplitude means 1 ml filling of the simulator plunger. The actual pressure pulse in mmHg depends on the ratio of the volume pushed by the simulator plunger (1 ml), the volume of the filled cuff, and its pressure.

TEST 2: DETERMINATION TIME COMPARISON

DETERMINATION TIME (100% AMPLITUDE, 120/80 MMHG, PULSE RATES 60 AND 80)

GE Healthcare B125	*Philips Efficia CM120*	*Philips IntelliVue MX430*	*Mindray IPM12*	*Nihon Kohden Life Scope 3000*
24s	**49s**	**49s**	**40s**	**30s**

TEST 3: MEASUREMENT RANGE

Measurement Range at Low Pulse Rates (≤60 bpm)

MID-RANGE MONITOR COMPARISON	DIASTOLIC RANGE (mmHg) *Minimum → Maximum*	SYSTOLIC RANGE (mmHg) *Minimum → Maximum*
GE Healthcare B125	**15 – 218**	**33 – 290**
Philips Efficia CM120	**13 – 215**	**32 – 270**
Philips IntelliVue MX430	**14 – 198**	**32 – 251**
Mindray IPM12	**14 – 207**	**40 – 268**
Nihon Kohden Life Scope 3000	**14 – 215**	**42 – 280**

Measurement Range at Medium Pulse Rates (>60 bpm – ≤160 bpm)

MID-RANGE MONITOR COMPARISON	DIASTOLIC RANGE (mmHg) *Minimum → Maximum*	SYSTOLIC RANGE (mmHg) *Minimum → Maximum*
GE Healthcare B125	**12 – 218**	**31 – 290**
Philips Efficia CM120	**12 – 219**	**30 – 270**
Philips IntelliVue MX430	**13 – 225**	**30 – 266**
Mindray IPM12	**12 – 210**	**40 – 270**
Nihon Kohden Life Scope 3000	**12 – 230**	**40 – 278**

Measurement Range at High Pulse Rates (>160 bpm)

MID-RANGE MONITOR COMPARISON	DIASTOLIC RANGE (mmHg) *Minimum → Maximum*	SYSTOLIC RANGE (mmHg) *Minimum → Maximum*
GE Healthcare B125	**14 – 218**	**35 – 290**
Philips Efficia CM120	**13 – 132**	**30 – 178**
Philips IntelliVue MX430	**13 – 197**	**30 – 249**
Mindray IPM12	**12 – 206**	**40 – 270**
Nihon Kohden Life Scope 3000	**14 – 214**	**40 – 276**

CONCLUSION: GE HEALTHCARE'S B125 MONITOR

HIGH SENSITIVITY

WIDE MEASUREMENT RANGE

FAST SPEED

In these test conditions, GE Healthcare's B125 monitor had a fast determination time without compromising on sensitivity and measurement ranges.

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NOTE: The data collection and data analysis for this study was conducted in 2019 by an independent third party. The data from this study is stored in GE Healthcare's internal quality record system under reference DOC2452066. Data collection for all devices was done in accordance to a strict protocol to ensure fair comparison. The results from this study can only be interpreted under those specific test conditions and do not reflect usage in a standard clinical environment.

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