

Pressure Level Measuring Test Results for Opera[®] Flo

Test Date: July 20, 2011



Comparison test between the Opera[®] Flo and
an anonymised Hospital Foam Mattress

Data contains localised pressure data from 1024 sensors
with Isobar display images

opera[®]

Preliminary Remarks of this Test

Test sample: Opera® Flo
Test sample checked by: Paul Lo
Date: July 20, 2011

Product's Intended Use:

The Opera® Flo mattress system is used in therapy to prevent pressure sore for patients confirmed to bed for long periods of time. The mattress is placed on the existing bed mattress.

Composition:

The mattress system that consists of a replacement mattress with 16 pieces 5 inches height horizontal air cells (See photograph 2) and has a control unit (see photograph 1). Every second cell is inflated or deflated (see diagram 1)

The Opera® Flo cells are secured to the outer base cover with press-studs. The switching of one set of cells to another occurs on a pre-set time of 10 minutes. For manual adjustment of the alternating pressure the control unit is equipped with a potentiometer device which allows a continuous adjustment of pressure.

The air cells are covered with a removable, washable cover manufactured in a vapour permeable material.

Opera® Flo Measurements

	Metric	Imperial
Depth	180mm	7"
Length	2000mm	78¾"
Width	900mm	35½"

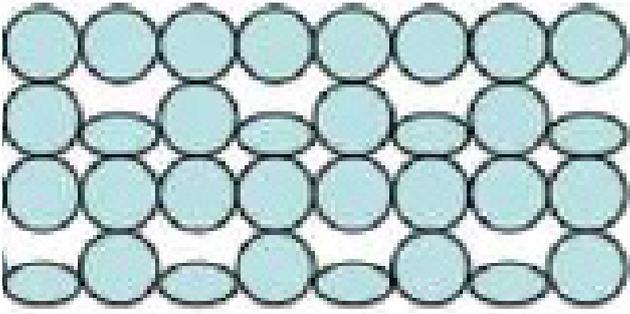


Diagram 1: Schematic representation of the Opera® Flo operation



Photograph 1: Control Unit



Photograph 2: Section of mattress

Observations:

Due to the elastic characteristics of the air cells and the effect of the static pressure, the following points were observed:

- # Static local pressure on the body
- # Topographic adaptation of the air mattress to the patient lying on it.
- # Uniformed distribution of the weight of the patient, which ensures decreasing of leveling of the degree of pressure or reduction of the shearing force.

Test Program

We used the calibrated measuring system "FSA Hospital Bed System S/N# UT3010-4080 manufactured by Vista Medical Canada. This system consists of a sensor field of 90 x 200 cm, having 1024 sensors.

We measured on the body of a volunteer, after a settlement time of 30 minutes; we took measurements over 12 minutes for the whole body to analyze the critical areas of head, shoulders, buttocks and heels. Measuring was effected with the same test person on the regular hospital foam mattress and Opera® Synergy. The thickness of standard hospital foam mattress is 10 cm. The mattress was placed on a regular bed frame.

Test Results

Regular® Hospital Foam Mattress	Left mmHg	Right mmHg	Color Chart Ref.
Head	52	52	A9
Shoulders	43	57	A10
Buttocks	46	49	A11
Heels	36	24	A12

Opera® Synergy Hybrid Mattress	PHASE 1 (Inflated cells)		PHASE 2 (Deflated Cells)		Color Chart Ref.
	Left mmHg	Right mmHg	Left mmHg	Right mmHg	
Head					A13
Shoulders					A14
Buttocks					A15
Heels					A16

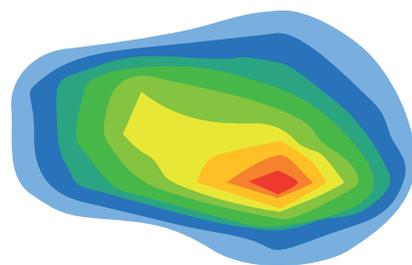
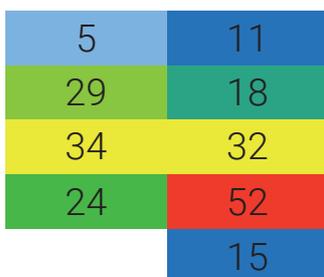
Summarized Test Result:

The presented shows the pressures decrease considerably so that shows a high degree of pressure relief.

The result is valid for all the spots of the test sample that were taken into account. The isobar figures show, apart from the marked pressure relief, a decrease of the pressure gradient, in this instance, the shearing forces, which add to the problem of the pressure sores, are also reduced.

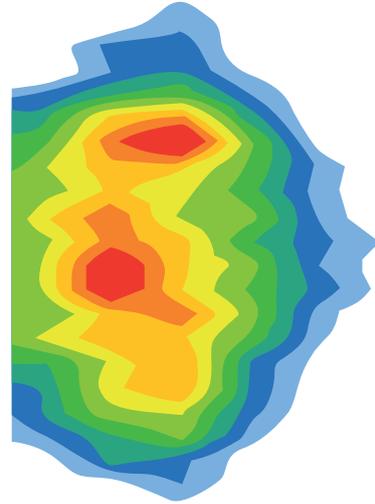
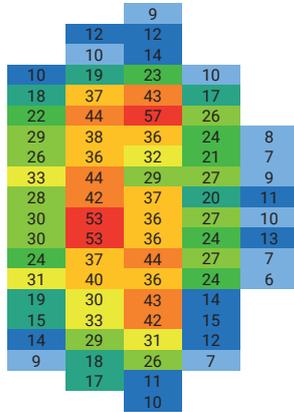
A9: Pressure relief at head using the standard hospital foam mattress as a reference.

Left: Pressure readings of the single pressure sensors. Right: Isobar display



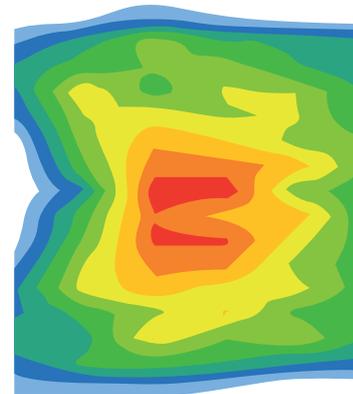
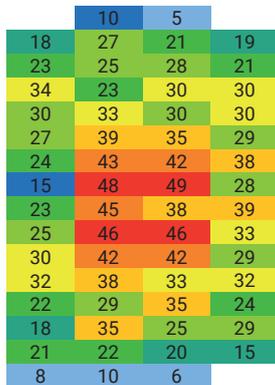
A10: Pressure relief at shoulders using the standard hospital foam mattress as a reference.

Left: Pressure readings of the single pressure sensors. Right: Isobar display



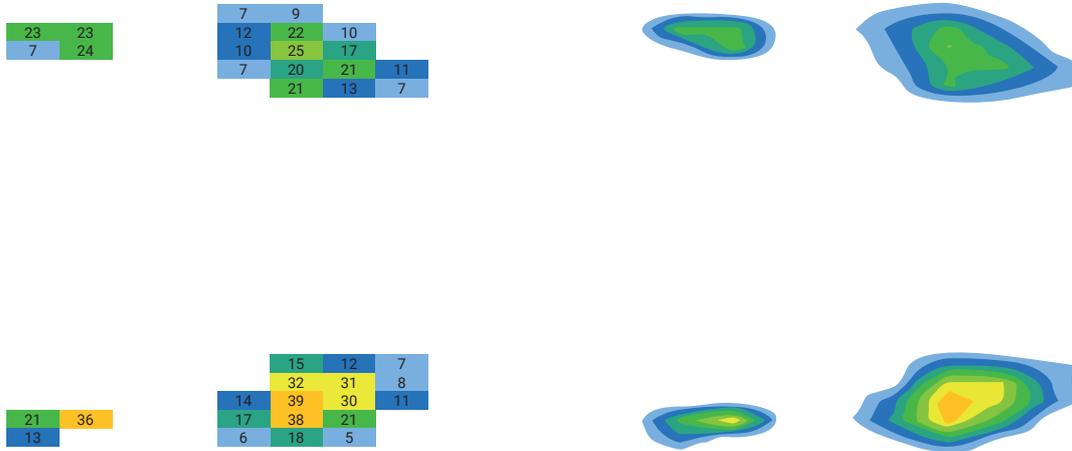
A11: Pressure relief at buttocks using the standard hospital foam mattress as a reference.

Left: Pressure readings of the single pressure sensors. Right: Isobar display



A12: Pressure relief at heels using the standard hospital foam mattress as a reference.

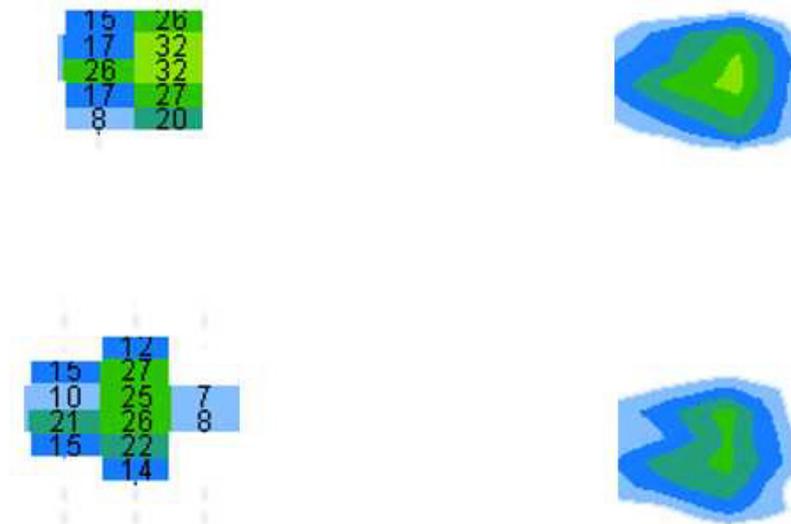
Left: Pressure readings of the single pressure sensors. Right: Isobar display



A13: Pressure relief at head using the Opera® Flo Alternating Pressure mattress.

Left: Pressure readings of the single pressure sensors. Right: Isobar display

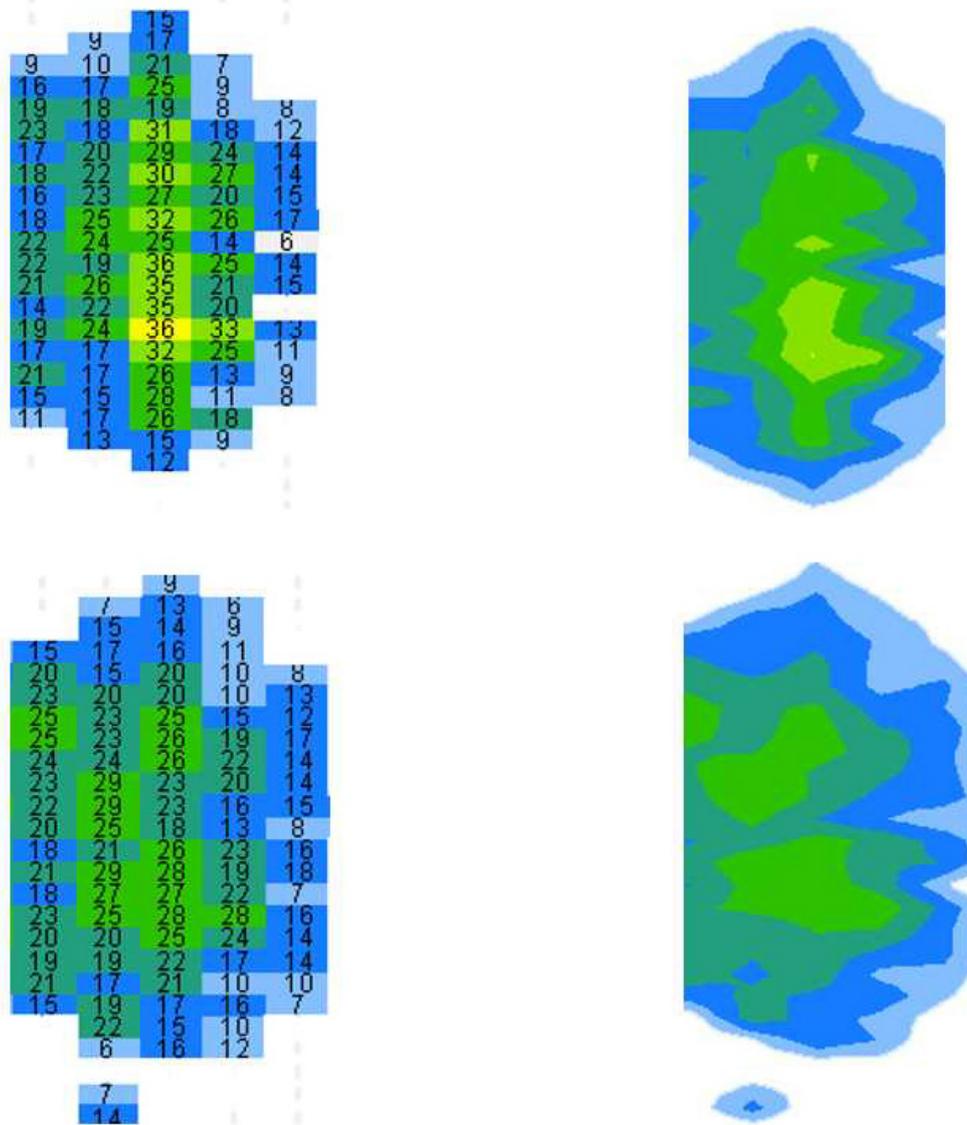
UP : Mattress cels inflated. Down: Mattress cells deflated



A14: Pressure relief at shoulders using the Opera® Flo Alternating Pressure Mattress.

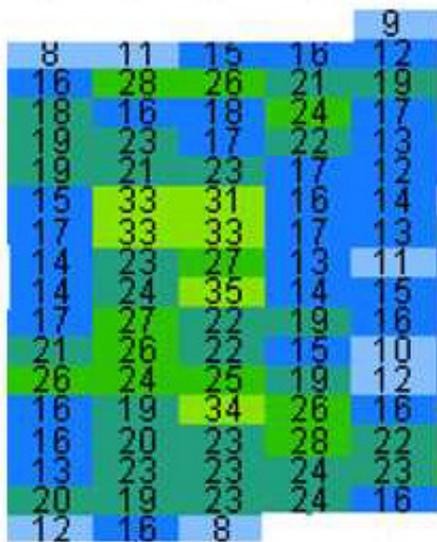
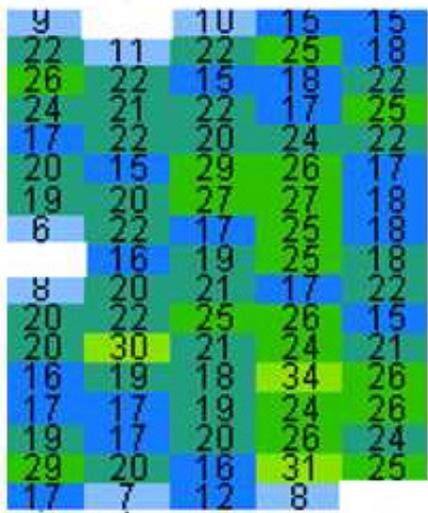
Left: Pressure readings of the single pressure sensors. Right: Isobar display

UP: Mattress cells inflated. Down: Mattress cells deflated.

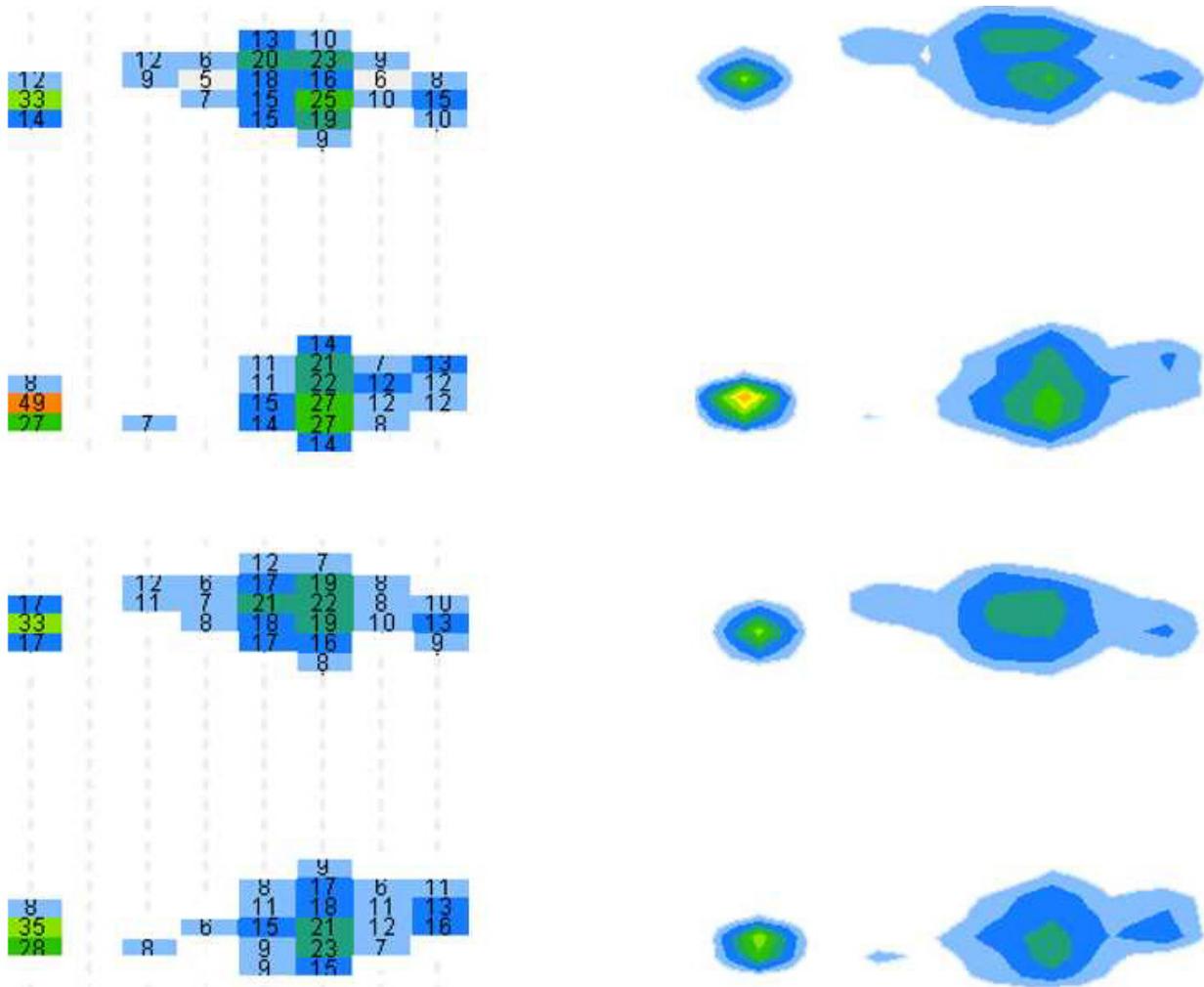


A15: Pressure relief at buttocks using the Opera® Flo Alternating Pressure Mattress.

Left: Pressure readings of the single pressure sensors. Right: Isobar display.
 UP: Mattress cells inflated. Down: Mattress cells deflated.



A16: Pressure relief at heels using the Opera® Flo Alternating Pressure Mattress.
 Left: Pressure readings of the single pressure sensors. Right: Isobar display
 UP: Mattress cells inflated. Down: Mattress cells deflated.





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