

## Hemodynamic Simulator II (P09026)

### Specifications *(Preliminary)*

Engr. Spec. #	Source	Specification (description)	Unit of Measure	Ideal Value	Comments/Status
<b>Fluid (BLOOD)</b>					
ES1	Cutnell, John & Johnson, Kenneth. <i>Physics, Fourth Edition</i> . Wiley, 1998: 308.	Viscosity	N-s/m <sup>2</sup>	0.0027	At 37°C
ES2	Cutnell, John & Johnson, Kenneth. <i>Physics, Fourth Edition</i> . Wiley, 1998: 308.	Density	kg/m <sup>3</sup>	1060	At 37°C
ES3	Taggart, Starr and Cecie Starr. <i>Biology: The Unity and Diversity of Life</i> . California: Wadsworth, 1989: 398.	Volume	liter	5	With variation of +/-20%
<b>Heart Chamber</b>					
ES4	<a href="http://www.fi.edu/learn/heart/development/development.html">http://www.fi.edu/learn/heart/development/development.html</a>	Normal Heart Rate	Beats per minute	120 - Infant 70 - Adult	
ES5	<a href="http://www.bbc.co.uk/science/humanbody/body/factfiles/heart/heartbeat.shtml">http://www.bbc.co.uk/science/humanbody/body/factfiles/heart/heartbeat.shtml</a>	Max. Heart Rate	Beats per minute	220	With variation of +/-5%
ES6	<a href="http://gaps.anest.ufl.edu/palm/files/formulas/13.html">http://gaps.anest.ufl.edu/palm/files/formulas/13.html</a>	Systemic Vascular Resistance	MPa·s/m <sup>3</sup>	90–120	Normal
ES7	<a href="http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf">http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf</a>	Circulatory System total length	meters	10 <sup>8</sup>	
<b>Propagation Velocities</b>					
ES8	<a href="http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf">http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf</a>	Atria	m/s	1	
ES9	<a href="http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf">http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf</a>	AV Node	m/s	0.05	
ES10	<a href="http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf">http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf</a>	Purkinje Fibres	m/s	3	
ES11	<a href="http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf">http://www.eie.polyu.edu.hk/~ensmall/eie448/EIE448/Notes_files/topic2.pdf</a>	Ventricles	m/s	0.5	

Revision	Author	Comments
#1	Liliane Pereira	