












	Analogue Systems		Digital Systems							
	UltraLab ULS 40D	UltraLab ULS 80D	UltraLab ULS HF54	UltraLab ULS HF58	UltraLab ULS HF516	UltraLab ULS HF108	UltraLab ULS HF54x2	UltraLab ULS HF58x2	UltraLab ULS Advanced	
										
<b>Number of channels and maximal number of sensors per channel</b>	4/1	8/1	4/1	8/1	16/1	8/1	4/2	8/2	4/3 or 8/3	
<b>Sensor type</b>	analogue		digital each controller is factory configured to take 2 different sensor models							
<b>Measurement ranges in cm (Blind zone - Full scale)</b>	3 - 25 / 6 - 35 / 20 - 130 / 70 - 200 / 35 - 340 / 50 - 600		3 - 25 / 6 - 35 / 20 - 120 / 50 - 340 / 50 - 600							
<b>Resolution at Full Scale</b>	180 µm<=350mm FS / 360µm>350mm FS		180 µm<=350mm FS / 360µm>350mm FS							
<b>Repeatability in mm</b>	0.36 / 0.5 / 1 / 3 / 6		0.36 / 0.5 / 1							
<b>Sample rate</b>	75 / 50 / 20 / 10		switchable 50/25 Hz			switchable 100/50 Hz	switchable 50/25 Hz		switchable 100/50 Hz on request up to 250 Hz	
<b>Standard/ Maximum Sensor Cable Length</b>	10m / 200m		10m / 15m							
<b>Sensor Size (Diameter/Length)</b>	30/100mm up to 80/120mm		18/90mm; 30/100mm							
<b>Sound velocity calibration</b>	internal temperature compensation at the sensors (2-point calibration for precise measurement needed)		fixed sound velocity set-up or calibration-free with continuous sound velocity measurement and automatic calibration with the additional REF-300i sensor							
<b>Channel Sync. / Ext. Trigger input</b>	no / no		yes / yes							
<b>Fault- and Multiple Echo Cancellation</b>	basic		highly sophisticated							
<b>Lost Echo Suppression</b>	no (10V output @ lost echo)		yes (based on wave theory)							
<b>Relative maximum speed(sensor &lt;-&gt; wave)</b>	up to 2 - 4 m/s (depending on wave parameter)		up to 6 m/s (depending on wave parameter)			up to 6 - 8 m/s (depending on wave parameter)		up to 15 m/s		
<b>Data Output</b>	analogue 0-10 V (BNC-sockets) optional digital RS232/LAN/SD-card		digital RS232, optional LAN/Ethernet optional analogue 0-10 V (BNC-sockets)						RS232 and LAN/ Ethernet optional analogue 0-10 V (BNC-sockets)	
<b>Data Acquisition / Software</b>	optional data acquisition interface / optional Windows UltraLab software		Windows UltraLab software / Remote control of controller via UltraLab software							
<b>Applications</b>	performs well at water surfaces with lower dynamics		performs well at turbulent processes and steep waves at low to moderate speeds			performs well at turbulent processes, steep and breaking waves, at moderate speeds		highest performance, performs well at very turbulent waters, very steep & breaking waves & white water, at very high speeds		