



# Pflanzenphysiologie

## Dendrometer



<b>Name of the Sensor</b>	Circumference Dendrometer 3 Type DC3												
<b>Use area</b>	For measuring circumference growth of fast-growing trees												
<b>Advantages</b>	Mechanical pressure on the tree is independent from the tree size, thus good comparability of data between different tree sizes.												
<b>Range of the sensor</b>	25 mm, corresponding range for tree size: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Tree diameter (cm)</th> <th>Range of mm Circumference</th> <th>Diameter</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>74</td> <td>23</td> </tr> <tr> <td>40</td> <td>55</td> <td>17</td> </tr> <tr> <td>100</td> <td>40</td> <td>12</td> </tr> </tbody> </table>	Tree diameter (cm)	Range of mm Circumference	Diameter	10	74	23	40	55	17	100	40	12
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<b>Resolution</b>	The resolution of the sensor itself is infinite. The resolution of readings is determined by connected data logger, e.g. CR1000: 3.3 $\mu\text{m}$ DL2e: 6.3 $\mu\text{m}$ DT85: 0.21 $\mu\text{m}$ Dendrometer logger (DL15): 6 $\mu\text{m}$												
<b>Accuracy</b>	Dependent on the connected data logger, e.g.: CR1000: $\pm 0.12\%$ DL2e: $\pm 0.2\%$ (Two single-ended channels) DT85: $\pm 0.35\%$ Dendrometer logger (DL15): $\pm 1\%$												
<b>Temperature coefficient of the sensor</b>	$< 0.2 \mu\text{m}$ in the whole range												
<b>Temperature coefficient of the wire</b>	$< 1.4 \times 10^{-6}/\text{k}$												
<b>Linearity</b>	$< 0,7\%$												
<b>Environment</b>	Outdoor condition: $-30$ to $40^\circ\text{C}$ air temperature, 0 to 100% relative air humidity												
<b>Weight of the sensor</b>	37 g without cable												
<b>Output</b>	Analogue output, 0-20 kohm												
<b>Power supply</b>	No additional power supply needed												
<b>Material</b>	Stainless steel and Aluminum												
<b>Cable length</b>	2 m, extendable up to 100 m												