We describe the Erlangen microconducting spectrometer (EMPHO I), a device that measures the oxygen saturation and relative haemoglobin content in the capillaries. These factors determine the oxygen supply and survival of cutaneous flaps. The EMPHO I was used for intraoperative measurements in pectoralis major myocutaneous flaps and showed reproducible results, so that it is valid for intraoperative monitoring in plastic surgery.

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