

It is readily seen that several significant measurements can be made without resorting to standards to calibrate the directional coupler. It has been shown that more complete calibrations can be accomplished with a minimum number of standards that is significantly smaller than is commonly used. It should be reemphasized that these techniques are applicable to the calibration of many other networks in addition to four-port directional couplers—be they highly directive or not.

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Comments on "A New Waveguide Flow Calorimeter for Levels of 1–20 W"

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In the December 1974 issue, a paper¹ described a recently developed dual-flow microwave calorimeter with very high precision and accuracy. A control and coolant circulation console was described as operating with a series of dual waveguide loads where precision was achieved by the inherent balance between one load heated by the unknown microwave power and the other by an accurately measured dc power while the errors were estimated by the use of an auxiliary thermocouple measuring the temperature difference between the waveguide bodies.

I should like to point out that a dual-flow microwave calorimeter having all of these characteristics and also many similarities in detail design was published by me in *the Microwave Journal*, pp. 41–46, January 1961; that my publication was referenced by Crawford and Hudson who improved the accuracy of this type of instrument and whose paper was referenced by the authors of the 1974 paper; and finally that after serious study of the literature I have come to believe that the concept was actually an original contribution on my part.

Incidentally, my calorimeter design was manufactured and commercially available from the Sierra Electronics subsidiary of Philco for years. A production version was tested by NBS and found by them to agree with their standard within 0.75 percent or less up to 1000 W while the then rated accuracy of their instrumentation as well as that estimated for mine was 1% limit of error.

Correction to "Isolation Amplifier with Combined Magnetic and Optical Coupling"

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In the above paper,¹ there were two misprints. The first appears in (1), in which the minus sign should be a multiplication sign. The second is in the formula page 116, where + must be read instead of ÷.

Also, the authors would like to take this opportunity to specify that the work described in the paper has been financially supported by ENEL, the Italian Electricity Generating Board.

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¹G. Gaggini, P. F. Manfredi, P. Maranesi, and G. Triulzi, *IEEE Trans. Instrum. Meas.*, vol. IM-24, pp. 115–117, June 1975.

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¹N. P. Abbott, C. J. Reeves, and G. R. Orford, *IEEE Trans. Instrum. Meas.*, vol. IM-23, pp. 414–420, Dec. 1974.