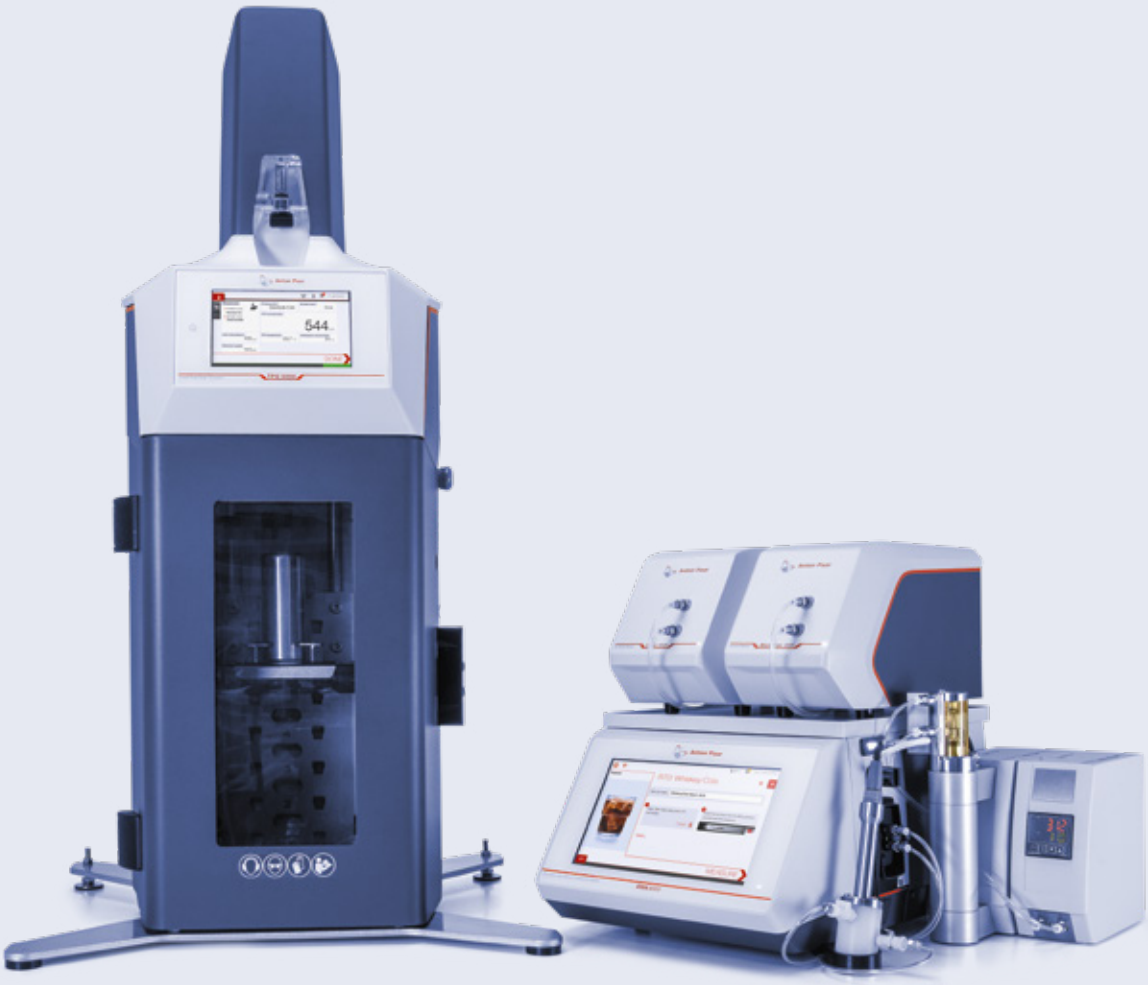
Anton Paar

Multiparameter Measurement System

Find out more

Packaged RTD Measurement System

Fast, precise analysis for ready-to-drink (RTD) beverages. Get results in eight minutes for alcohol, sugar, and more – in glass bottles, PET bottles, or cans.



All-in-one analysis for packaged RTDs

Measure ready-to-drink (RTD) products such as whiskey-cola, gin and tonic, and other mixed beverages with outstanding precision and speed. This all-in-one system analyzes alcohol (0 % v/v to 12 % v/v) and sugar (0 % w/w to 14 % w/w) in just eight minutes – no sample preparation or distillation required. Inversion-corrected density measurement enables reliable process monitoring with a fresh density accuracy of 0.0003 g/cm³. Eight additional sample-specific parameters are calculated automatically, and four integrated chemometric models cover diet RTDs sweetened with artificial sweeteners, sucrose, HFCS 42, and HFCS 55. By combining density, sound velocity, and NIR spectroscopy, the Packaged RTD Measurement System delivers highly accurate results even for complex, carbonated samples.

Highlights:

- → RTD beverage analysis for products with 0 % v/v to 12 % v/v alcohol and 0 % w/w to 14 % w/w extract
- → Results in just eight minutes directly from the packaged bottle or can
- → Reliable process calibration with inversion-corrected density accuracy of 0.0003 g/cm³
- → Four chemometric models for diet, sucrose, HFCS 42, and HFCS 55-based products
- → Multiparameter analysis with more than 12 additional sample-specific parameters
- → Selective measurement of headspace oxygen and dissolved oxygen in one instrument with a low-maintenance optochemical oxygen sensor
- → Selective CO_2 analysis for the perfect taste

RTD Measurement System Technical Data[1)]

Measurement range	
Alcohol	0 % v/v to 12 % v/v
Density	0 g/cm³ to 3 g/cm³
Extract (saccharose or HFCS 42 or HFCS 55)	0 % w/w to 14 % w/w
CO_2 concentration	0 vol. to 5.5 vol. (0 g/L to 11 g/L) at 35 °C (95°F)
	0 vol. to 10 vol. (0 g/L to 20 g/L) <10 °C (50 °F)
O_2 concentration (wide-range sensor)	HSO: 0 to 45 hPa, DO: 0 ppm to 45 ppm
Repeatability s.d.	
Alcohol	0.01 % v/v
Density	0.000005 g/cm³
CO_2 concentration[2)]	0.005 vol. (0.01 g/L)
O_2 concentration[3)]	±25 ppb or ±6 %, whichever greater
Tested samples[4)]	Jack Daniel's® Coca Cola®, Jim Beam Bourbon® Cola, Bacardi® Rum&Cola
Expected deviation from reference methods[5)]	
Alcohol RTD	<0.06 % v/v
Sugar content RTD	0.03 °Brix
Density fresh	0.0003 g/cm³
Additional information	
Minimum amount of sample per measurement	260 mL
Typical measurement time per sample	8 minutes (incl. filling) to 10 minutes
Dimensions (L x W x H)	515 mm x 1,200 mm x 1,120 mm (20.3 in x 47.3 in x 44.1 in)
Ambient temperature	15 °C to 32 °C (59 °F to 89.6 °F)
Air humidity	Non-condensing 20 °C: <90 % relative humidity; 25 °C: <60 % relative humidity; 30 °C: <45 % relative humidity

1) From DMA 6002 software version 6.7.2.
2) Due to sample handling and preparation in TPO 5000, CO_2 mean values may deviate by 1 % absolute compared to filling by a PFD (piercing and filling device).
3) At ambient and sample temperature of 23 °C (73.4 °F) if standard cleaning is applied. Please note that the first measurement of a set is not considered for the determination of the repeatability of a set.
4) With typical mixing ratios of the individual components. Approval of other sample types on request.
5) The quantities are determined using measurements of density, sound velocity, and NIR spectroscopy. The presence of interfering substances affecting one or more of these parameters may lead to increased deviations in the results.