

TECHNICAL DATA

	P8000	P8100	P8000-T/-T80/-TF	P8100-T/-T80/-TF
SCALES	Optical rotation [°] Int. sugar scale [°Z] Concentration [g/100 ml] Spec. rotation User-defined		Optical rotation [°] Int. sugar scale [°Z] Concentration [g/100 ml] Spec. rotation User-defined	
MEASUREMENT RANGES	±90° ±259 °Z		±90° ±259 °Z	
ACCURACY	±0.003° ±0.01 °Z	±0.002° ±0.01 °Z	±0.003° ±0.01 °Z	±0.002° ±0.01 °Z
RESOLUTION	0.001° 0.01 °Z		0.001° 0.01 °Z	
MEASUREMENT PERIOD ±90°	Ca. 1 s		Ca. 1 s	
LIGHT SOURCE	1 LED mit Filter		1 LED mit Filter	
WAVELENGTH	589 nm		589 nm	
SAMPLE PERMEABILITY	> 0.1 % (OD3)		> 0.1 % (OD3)	
MAX. TUBE LENGTH	220 mm		220 mm	
TEMPERATURE MEASUREMENT	With temperature probe PRT-E oder PRT-T		With temperature probe PRT-E oder PRT-T	
TEMPERATURE MEASUREMENT RANGE	0–99.9 °C		0–99.9 °C	
TEMPERATURE MEASUREMENT RESOLUTION	0.1 °C		0.1 °C	
TEMPERATURE MEASUREMENT ACCURACY	±0.2 °C		±0.2 °C	
TEMPERATURE CONTROL	Can be retrofitted (requires circulating thermostat PT31 or PT80, sample chamber bushing P8020 and temperature-controlled measurement tube PRG-100- ET)		With circulating thermostat PT31 (P8000-T) or with circulating thermostat PT80 (P8000-T80) (requires temperature-controlled measurement tube such as PRG-100-ET)	
TEMPERATURE CONTROL RANGE			PT31=8°–35° C (standard), PT80=5°–80° C	
TEMPERATURE CONTROL ACCURACY			±0.2 °C	
METHODS	A practically unlimited number of methods can be set			
ADJUSTMENT	Automatic (menu-driven)			
HOUSING	Steel, powder-coated			
CONTROL	7,0" capacitive touch-screen, 800 x 480 pixels			
INTERFACES	1x USB, 1x RS-232, 1x Ethernet			
OPERATING VOLTAGE	110–250 V, 50/60 Hz			
POWER CONSUMPTION (MEASUREMENT OPERATION)	35 W		35 W	
POWER CONSUMPTION (MAX.)	50 W		50 W	
DIMENSIONS (W X H X D)	670 mm x 200 mm x 360 mm			
WEIGHT	29 kg			

P8000-P		P8100-P	P3000	P1000-LED
Optical rotation [°] Int. sugar scale [°Z] Concentration [g/100 ml] Spec. rotation User-defined			Optical rotation [°] Int. sugar scale [°Z]	SCALE Optical rotation [°]
±90° ±259 °Z			±90° ±259 °Z	MEASUREMENT RANGE 2 graduated circles (0–180°)
±0.003° ±0.01 °Z	±0.002° ±0.01 °Z		±0,01° ±0,01 °Z	SCALE DIVISION 1°
0.001° 0.01 °Z			0.01° 0.01 °Z	READING ACCURACY 0.05° (with nonius)
Ca. 1 s			Ca. 1 s	LIGHT SOURCE 1 LED with filter
1 LED mit Filter			1 LED mit Filter	WAVELENGTH 589 nm
589 nm			589 nm	MAX. TUBE LENGTH 220 mm
> 0.1% (OD3)			> 0.1% (OD3)	ADJUSTMENT Manual adjustment on the scale
220 mm			220 mm	HOUSING Cast aluminium
With measurement tube PRG-100-EPT			With temperature probe PRT-E or PRT-T	OPERATING VOLTAGE 110–250 V, 50/60 Hz
0–99.9 °C			0–99.9 °C	POWER CONSUMPTION (MEASUREMENT OPERA- TION) 15 W
0.1 °C			0.1 °C	POWER CONSUMPTION (MAX.) 15 W
±0.2 °C			±0.2 °C	DIMENSIONS (W X H X D) 140 mm x 330 mm x 500 mm
With measurement tube PRG-100-EPT with 3 integrated Peltier elements			Can be retrofitted requires circulating thermostat PT31 or PT80, sample chamber bushing P8020 and temperature-controlled measurement tube PRG-100-ET	WEIGHT 4.3 kg
15–40 °C				
±0.2 °C				
			N/a	
			Automatic (menu-driven)	
			Steel, powder-coated	
			3,5" touch-screen, 320 x 240 pixels	
			1x RS-232	
			110–250 V, 50/60 Hz	
65 W			30 W	
85 W			40 W	
			645 mm x 200 mm x 360 mm	
			28 kg	

POLARIMETER STANDARDS



ORGANISATION	NOTATION	LAST REV.	TITLE
AOAC	896.01	1896	Lactose in Milk
AOAC	896.02	1970	Sucrose in Sugars and Syrups
AOAC	898.02	1989	Physical Constants of 10 % Distillate of Lemon and Orange Oils
AOAC	902.02	1902	Sucrose in Vanilla Extract
AOAC	906.03	1906	Invert Sugar in Sugars and Syrups
AOAC	920.139	1920	Sucrose in Lemon, Orange, and Lime Extracts
AOAC	920.142	1920	Optical Rotation of Lemon and Orange Oils
AOAC	920.182	1983	Polarisation (Direct) of Honey
AOAC	920.184	1920	Sucrose in Honey
AOAC	920.188	1920	Polarisation of Maple Products
AOAC	920.189	1920	Sucrose in Maple Products
AOAC	920.190	1920	Sugars (Reducing) in Maple Products as Invert Sugar
AOAC	920.191	1920	Glucose (Commercial) in Maple Products
AOAC	920.63	1920	Nonsugar Solids (Sugar-Free Extract) in Wines
AOAC	920.65	1920	Sucrose in Wine
AOAC	920.66	1920	Commercial Glucose in Wine
AOAC	920.82	1920	Sucrose in Cacao Products
AOAC	920.83	1974	Starch in Cacao Products
AOAC	920.96	1920	Coating and Glazing Substances in Roasted Coffee
AOAC	921.03	1921	Sugars (Reducing) in Plants
AOAC	921.10	1921	Oil (Rosin) in Oils and Fats
AOAC	925.05	1958	Sucrose in Animal Feed
AOAC	925.33	1925	Oils of Lemon and Orange in Extracts
AOAC	925.35	1925	Sucrose in Fruits and Fruit Products
AOAC	925.37	1925	Glucose (Commercial) in Fruits and Fruit Products
AOAC	925.42	1925	Sugars (Reducing) Before Inversion in Food Dressings
AOAC	925.43	1925	Sugars (Reducing) After Inversion in Food Dressings
AOAC	925.46	1970	Sucrose in Sugars and Syrups
AOAC	925.47	1970	Sucrose in Sugars and Syrups
AOAC	925.48	1970	Sucrose in Sugars and Syrups

POLARIMETER STANDARDS



ORGANISATION	NOTATION	LAST REV.	TITLE
AOAC	925.52	1925	Sugars in canned vegetables
AOAC	926.11	1992	Oils of lemon, Orange, or Lime in oil-base flavours
AOAC	926.13	1970	Sucrose and Raffinose in Sugars and Syrups
AOAC	926.14 & Surplus	1989	Sucrose and Raffinose in Sugars and Syrups
AOAC	926.18	1926	Camphor in drugs
AOAC	929.09	1929	Invert Sugar in Sugars and Syrups
AOAC	930.32	1930	Lactose in Process Cheese
AOAC	930.35	1930	Vinegars
AOAC	930.36	1930	Sucrose in Sugars and Syrups
AOAC	930.37	1930	Corn (Glucose) Syrup in Sugars and Syrups
AOAC	931.07	2013	Glucose and Sucrose in Eggs Sugar Inversion Method
AOAC	932.13 & Surplus	1974	Levo-Malic Acid in Fruits and Fruit Products
AOAC	933.04	1933	Lactose in Milk Chocolate
AOAC	933.07	1933	Malic acid (inactive) in fruits and fruit products
AOAC	935.62	1935	Glucose in sugars and syrups. Chemical methods
AOAC	940.11	1940	Sucrose in Cordials and Liqueurs
AOAC	942.20	1942	Sucrose in sugar beets
AOAC	945.37	1945	Starch in four
AOAC	945.55	1969	Sucrose in Gelatine
AOAC	945.56	1969	Loss on drying (moisture) in starch dessert powders
AOAC	945.67	1945	Glucose in Corn Syrups and Dextrose Products
AOAC	950.18	1950	Malic acid (levo and inactive) in non-alcoholic beverages
AOAC	950.18	1950	Malic acid (levo and inactive) in non-alcoholic beverages
AOAC	950.29	1950	Sucrose in non-alcoholic beverages
AOAC	950.30	1950	Sugars (reducing) in non-alcoholic beverages
AOAC	950.31	1980	Glucose (commercial) in non-alcoholic beverages
AOAC	932.14 & Surplus	1977	Amphetamine Drugs
AOAC	965.31	1980	Lemon juice
AOAC	968.19	1980	Levo-malic acid in fruits and fruit products
AOAC	970.57	1970	Sucrose in molasses. Polarimetric methods

POLARIMETER STANDARDS



ORGANISATION	NOTATION	LAST REV.	TITLE
AOAC	975.14	1975	Sugars in bread
AOAC	975.43	1980	Identification of RRR- or all-rac-alpha-Tocopherol in Drugs and Food or Feed Supplements
IUPAC-AOAC	986.19	1992	Triglycerides in fats and oils
ASTM	C1426-14	2014	Standard Practices for Verification and Calibration of Polarimeters
ASTM	C148-17	2017	Standard Test Methods for Polariscopic Examination of Glass Containers
ASTM	F140-98	2013	Standard Practice for Making Reference Glass-Metal Butt Seals and Testing for Expansion Characteristics by Polarimetric Methods
ASTM	F218-13	2013	Standard Test Method for Measuring Optical Retardation and Analysing Stress in Glass
EHC	Harmonised methods of the European Honey Commission	1997	Sugars Determination of specific rotation
ICUMSA	GS1/2/3/9-1	2011	Determination of Polarisation of Raw Sugar by Polarimetry - Official
ICUMSA	GS1/2/3-2	2005	Polarisation of Raw Sugar without Wet Lead Clarification
ICUMSA	GS2/3-1	2011	The Braunschweig Method for the Polarisation of White Sugar by Polarisation – Official (Reference) Method
ICUMSA	GS3-1	2003	The Determination of the Polarisation of the Sugar Component of Powdered Sugars Containing Anti-Caking Agents – Official
ICUMSA	GS4/7-1	2013	The Determination of Apparent Sucrose in Molasses by a Double Polarisation Method – Accepted
ICUMSA	GS5/7-1	2011	Polarisation, Brix and Fibre in Cane and Bagasse by the Wet Disintegrator with Lead Subacetate Single Method
ICUMSA	GS6-1	1994	The Determination of the Polarisation of Sugar Beet by the Macerator or Cold Aqueous Digestion Method using Lead Acetate as Clarifying Agent – Official
ICUMSA	GS6-3	1994	Polarisation of Sugar Beet by the Macerator or Cold Aqueous Digestion and Aluminium Sulphate Single Method
ICUMSA	GS7-7	2011	The Determination of the Pol (Polarisation) of Filter Cake by Polarimetry with Lead Subacetate – Accepted
ICUMSA	GS7-31	2013	The Determination of Pol by NIR Polarimetry and Brix for Sugarcane and Factory Product – Tentative
ICUMSA	SPS-1	2017	Specification and Standard SPS - 1 (2017), Polarimetry and the International Sugar Scale
Ph. Eur.	7th Edition-2.2.7	2008	Optical rotation
USP	781	2014	Optical rotation

STANDARD ORGANISATIONS

AOAC	–	Association of Analytical Communities
ASTM	–	American Society for Testing and Materials
EHC	–	European Honey Commission
ICUMSA	–	International Commission for Uniform Methods of Sugar Analysis
Ph. Eur.	–	European Pharmacopoeia
USP	–	United States Pharmacopoeia

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