SPECIFICATIONS

DietQuest™

	CE 3410 DietQuest : UV	CE 2410 DietQuest : VIS	CE 7210 DietQuest : D/B
Optical System	Single beam	Single beam	Double beam
Grating Monochromator	Littrow, 1200 L/mm	Littrow, 1200 L/mm	Czerny Turner 1200 L/mm
Wavelength Range	190-1000nm	325 - 1000nm	190-900nm
Wavelength Accuracy	Better than ±1nm	Better than ±1nm	Better than ±0.5nm
Optical Bandwidth	1.8nm	4nm	1.8nm
Wavelength Precision	Better than 0.1nm		
Photometric Noise	Better than 0.00004A at 1A, 500nm, RMS		
Photometric Range	-0.3-3A		
Scan Speed	1-4000nm/min		1-4000nm/min
Baseline Flatness	Better than ±0.002A p.t.p.	Optional scan available	Better than ±0.001A p.t.p.
Photometric Accuracy	Better than ±0.005 at 1A		Better than ±0.004A at 1A
Method Storage	30 user defined methods security code protected		
Curve Fit	Linear, quadratic and cubic curves, to 30 concentration standards or replicates		
Computer/Printer Interface	Bi-directional serial RS232 and parallel ports		
Stability	Better than 0.001A/hr	Better than 0.001A/hr	Better than 0.0001A/hr
Size and Weight	480 x 340 x 205; 19.5kg	480 x 340 x 205; 17.7kg	635 x 410 x 210; 33kg

ORDERING INSTRUMENTS

Instruments are supplied complete with cell holder(s), power cable, manual and brief operating instructions.

DietQuest : UV, CE 3410
190-1000nm range, 1.8nm
bandwidth, integral printer

DietQuest : VIS, CE 2410
325-1000nm range, 4nm
bandwidth, integral printer

DietQuest : D/B, CE 7210
190-900nm range, 1.8nm
bandwidth, double beam

ORDERING ACCESSORIES

	CE3410 / CE2410	CE7210
Cell Holders		
Micro sipette 10mm cell holder	1010 32 00	503 26 00
Adjustable holder for micro cell		6600 57 00
Rectangular cells up to 100mm	1010 38 00	595 27 00
Cylindrical cells up to 100mm	1010 39 00	595 26 00
Cell Changers		
4 cell auto changer, no holder	2021 34 00	9070 31 00
Holder for 4 x 10mm cells	2010 24 00	2010 24 00
6 cell auto changer, no holder		9070 34 00
6 cell auto changer and holder	2021 36 00	
Holder for 6 x 10mm cells		5500 33 00
4 position microcell changer	2020 38 00	505 38 00
Sipette and Batch Sampling		
Sipette system, no holder or cell	2021 21 00	9070 21 00
10mm sipette cell	202 07 02	202 07 02
40 batch sampler with pump	2021 82 00	2021 82 00
100 batch sampler with pump	2021 82 02	2021 82 02
Lamps		
Deuterium lamp with indicator	2202 01 42	2202 01 42
Tungsten halide lamp - in pairs	2303 01 40	2303 01 40
Sample Stirring		
Electronic stirrer	7200 31 01	7200 31 01
Cell holder 10mm cell	2010 32 00	579 02 00

	CE3410 / CE2410	CE7210
Temperature Control - Water		
Single or sipette cell holder	1010 33 00	503 36 00
4 cell holder	2020 36 15	202 36 16
2 x 4 cell holder, sample and ref.		202 36 15
6 cell holder		5500 36 15
Thermoelectric Control		
Thermoelectric Controller	CE 2024	CE 2024
Single or sipette cell holder	2031 31 20	8020 56 00
4 cell holder	2021 32 20	9070 57 00
2 x 4 cell holder, sample & ref.		9070 58 00
6 cell holder		9070 59 00
Printers and Cables		
RS232 cable for 25 pin PC	2021 26 00	2021 26 00
RS232 cable for 9 pin PC	2021 83 00	2021 83 00
Printer connection cable	8000 71 00	8000 71 00
Dot matrix printer	8000 70 01	8000 70 01
Colour ink jet printer	8000 72 01	8000 72 01
Print rolls and ribbon	2020 03 20	
Certified Calibration Filter Sets		
2 Wavelength filters	303 40 00	303 40 00
4 Absorbance filters	594 44 00	594 44 00
6 Absorbance filters	594 66 00	594 66 00
2 Wavelength and 6 Abs. Filters	594 77 00	594 77 00

FOOD ANALYSIS
BEVERAGE ANALYSIS

Diet Quest™

DietQuest™ for Food and Beverage Analysis

Cecil Instruments offer three DietQuest™ spectrophotometers fully pre-programmed for both food and beverage analysis. Methods include single and multi-wavelength measurements and spectral scanning. The DietQuest™ UV and the VIS versions are as shown on the right.

All the pre-programmed methods are defined by national and international bodies and trade associations including the following:

AACC, AOAC, ALVA, APA, ASBC, BS-EN, CAA, EBC, DIN, FDA, FIL-IDF, GUdRI, ICC, IFU, IoB, IOCCC, ISO, MAFF, MEBAFA, MEBAK, NEN, NF, OIV, OJEC.

Simple Rapid Operation

Even the most complex assay is carried out simply by selecting from the displayed menu the required method, inserting blanks, references and samples as prompted. Just press the run key for automatic measurement and calculation of the result. All results are displayed on screen and printed, timed and dated, on the integral or external printer.

User Programming

Never before has user programming of assays for automatic measurement and computation been so simple and rapid.

Cecil Assay Programme software allows any assay to be formulated for up to 10 wavelengths. Rapid entry of text and formulae and setting a wavelength program is all that is required.

Up to 20 formulae, each with up to 76 characters, may be combined for the most complex method and cell programming may be incorporated for multi-sample measurements.

Flexibility of Application

DietQuest™ spectrophotometers additionally have all the functions of a high quality spectrophotometer and may therefore find wide application in a testing laboratory. Where only visible determinations are required the 'DietQuest : VIS' is offered. The high performance double beam instrument 'DietQuest : D/B' completes the range and is shown below.

Concentration Curve Fit

Where concentration is not linearly related to absorbance, a quadratic or cubic curve may be fitted to up to 30 standards or replicates and edited before use. A straight line may be fitted to linear results and 30 curves may be stored security protected.

Sipette Sampling

Samples may be handled rapidly and without cell handling using the sipette sampling system. Sample volume is user selected and low cross contamination occurs even with samples as small as 300µL.

Reaction Kinetics

Enzyme reaction methods using kits supplied by Boehringer - Mannheim, Roche, Diogen, Megazyme etc. have been pre-programmed for a single cell or for 4 or 6 cells in an automatic changer.

Reaction curves are displayed on screen and regression analysis applied to the user selected part of the curve. A number of the assays are simple end point measurements.

Sample temperature control, where required, is available using either water circulation or Peltier Thermoelectric cell holders and controller.

DataStream - Data to a PC

Both raw, and processed and formatted data may be rapidly exported to a PC for incorporation into a spreadsheet or mathematical package of the users choice, e.g. Excel, Grafit etc. for manipulation and report generation.

Pre-programmed Convenience

The versatility of the DietQuest™ spectrophotometers is illustrated by the partial list of pre-programmed tests shown. Tests may be modified, or new tests programmed and stored by the user.

Food	Analyte	Method
Baby food	Nitrate	MEBAFA
Barley	β-Glucan	EBC
Barley	α-Amylase	ICC
Caramel	Colour	EBC
Cereal adjuncts	Colour	EBC
Cheese	Citric acid	AOAC
Egg	Carotenoids	AOAC
Egg, yolk	Colour	AOAC
Flour	Pigment	AOAC
Foodstuffs	Sulphite	UDC
Macaroni	Carotenoids	AOAC
Malt	Colour	EBC
Malt	β-Glucan	EBC
Malts	Colour	EBC
Milk, dried	Lactic acid	IDF
Olive oil	Quality	OJEC
Preserves	Glucose, Fructose	MEBAFA
Seafood	Histamine	AOAC
Spice, pepper	Piperine	AOAC
Sugar	Colour	ICUMSA
Tomato ketchup	Acetic acid	MEBAFA
Wheat	α-Amylase	ICC

Beverage	Analyte	Method
Beer	Copper	EBC
Beer	Carbohydrate	EBC
Beer	Nitrate	MEBAK
Beer	Bitterness	AOAC
Beer	Colour	AOAC
Beer	D-Glucose	MEBAK
Beer	Bitterness	EBC
Beer	Colour	EBC
Beer	Polyphenols	EBC
Beer	Vicinal Diketones	EBC
Beer, low alc.	Ethanol	EBC
Beverages, coffee	Caffeine	AOAC
Beverages, non alc.	Caffeine	AOAC
Beverages, tea	Caffeine	AOAC
Diabetic beer	D-Glucose	MEBAFA
Fruit juice	Glycerol	MEBAFA
Fruit & veg. juice	L-Lactic acid	BS-EN
Malt beer	Colour	EBC
Milk	L&D-Lactic acid	DIN
Orange juice	Adulteration	AOAC
Spirits, distilled	Fusel oil	AOAC
Wine	Colour	OIV

Application : Adulteration of processed Florida Orange Juice

Juice must not contain pulpwash solids. Using method AOAC 986.14 adulteration is measured by comparison of spectra, and using the adjusted sum of absorbances at 443, 325 and 250nm and their ratio at 443 : 325nm.
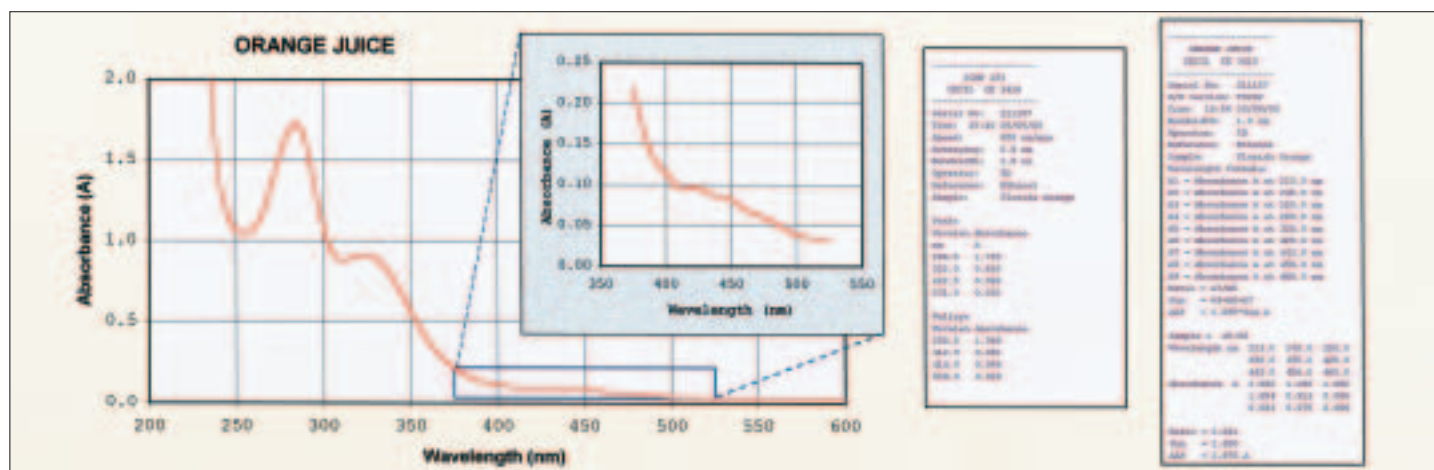
SOFTWARE EXTENSION MODULES

Program C
Cell program for 4, 6 or 8 cells

Program W
Wavelength program for up to 10 wavelengths

Scan - DietQuest : VIS only
Wavelength scan with peak labelling and time-course plots

Kinetics
Kinetic measurements with plots and reprocessing

Kinetics M
Multicell Kinetics

Quant S
Spectral storage, overlayed spectra, quantification of corrected bands etc.

DataStream
Fast data transfer to PC; PC control of instrument

Validation
Validation of absorbance, wavelength, bandwidth, straylight etc.