

# DFW-20 Fixed Wavelength Detector

## *Fixed Wavelength Detectors at the Lowest Cost!!*



D-Star Instruments continues to provide the analytical chemist with a series of new and improved, easy to operate, economically priced, and high performance UV-VIS Fixed Wavelength Detectors for liquid chromatography and other dynamic flow techniques.

This UV-VIS detector product line continues to meet the tight budgets of today's economy. The DFW-20, DFW-20C, and DFW-21C are the first of a series of liquid chromatography detectors designed, not only to fit the tightest budget requirements, but they are light in weight, small in footprint, and simple to use.

The DFW-20 is a 254 nm Fixed wavelength detector only and cannot be converted to any other wavelength. The DFW-20C and DFW-21C can be converted to other wavelengths where the lamp / filter combination is available. For wavelengths not listed in the "How to order" section please contact the factory.

### **Important DFW-20, DFW-20C and DFW-21C Features:**

- Flowcells are located in convenient position at the rear of the detector. The flowcell position also permits the instruments operation in any attitude and location.
- Flowcells are available for analytical including Microbore techniques, industrial, and biochemical applications, as well as preparative and semi-preparative separations. Flow rates in excess of 100 ml / min can be used.
- All wettable components constructed of PEEK, CTFE, or Tefzel which make the detector useful for applications requiring biocompatibility.

Applications requiring the use of mobile phases such as Methylene Chloride, THF, and DMSO, or Buffers such as TFA should use the available 316 SS flowcells.

- For analytical procedures requiring high sensitivity the new analytical flowcell with heat exchanger is recommended.
- Output for strip Chart Recorders (10 mV) and Integrators and data systems (1 V/AU) are available at the rear of the detector.
- Hg and Tungsten lamps available for VIS and limited NIR analysis (Contact factory for special Filter availability and prices).

### **Applications:**

Designed for maximum flexibility, D-Star detectors can accommodate many applications. Their relatively low price, better than one half the price of the nearest competitor, puts the DFW-20, DFW-20C, and DFW-21C within the limited budgets of university undergraduate curriculum, and many other under funded activities. The detectors simple operation is ideal for undergraduate, and even secondary schools chemistry classes where chemical instrumentation, and in particular separation science, is part of the curriculum.

Further, the light weight of the detector and its small footprint make it ideal for applications where laboratory bench space is at a premium. This would include hood installations and field operations requiring transportability.

The detectors are finding wide usage for applications such as Flash Chromatography, GPC clean up procedures, non-chromatographic applications such as FIA and SIA, and still widely used for routine chromatographic techniques where variable wavelength or diode array detectors are not required.



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## DFW-20 Detector Specifications

Wavelengths: DFW-20 254 nm only; DFW-20C 254 nm but can be converted to other available wavelengths; DFW-21C 280 nm but can be converted to other wavelengths w/ available lamp / filters.

Lamps: DFW-20 Standard 6 in low pressure Hg lamp (254 nm)  
DFW-20C Pencil type lamp / Filter combination (254nm)  
DFW-21C Pencil type Hg lamp with 280 nm phosphor with 280 nm filter  
DFW-21C Tungsten (W) Lamp for VIS and NIR Wavelengths  
Low UV (LUV) 214, 229

### Flowcells:

Analytical 7.0 mm Pathlength; 10  $\mu$ l illuminated volume (PEEK)  
7.0 mm Pathlength; 10  $\mu$ l illuminated volume (PEEK) w/ Heat Exchanger  
7.0 mm Pathlength; 10  $\mu$ l illuminated volume (SS)  
7.0 mm Pathlength; 10  $\mu$ l illuminated volume (SS) w/ Heat Exchanger  
Microbore 5.0 mm Pathlength; 1.5  $\mu$ l illuminated volume (PEEK)  
Semi-Prep. 3.0 mm Pathlength; 63  $\mu$ l volume (fused silica)  
Prep. 2.0 mm Pathlength; 4.0  $\mu$ l illuminated volume (PEEK)  
Prep. 2.0 mm Pathlength; 4.0  $\mu$ l illuminated volume (SS)  
Linearity > 2.0 %  
Drift < 5 x 10<sup>-4</sup> AU / Hr  
Noise < 5 x 10<sup>-5</sup> AUFS @ 254 nm, Constant Temperature  
Recorder AU Range 0.005, 0.01, 0.02, 0.05, 0.10, 0.20, 0.50, and 1.0 AUFS  
Integrator Output 1.0 V / AU  
Dimensions 11.3 in. L x 7.5 in W x 3.0 in H  
Weight 6 lb (2.7 kg)  
Front Panel Range Selection Scroll Switches; off / on; Autozero; Event Mark (OEM Option only)  
Rear Panel Recorder / Integrator Output; Flowcell and Connections  
Power 115 VAC, 220-240 VAC, 50 / 60 Hz

### How To Order

#### Detectors:

Part # 014-0001 Model DFW-20 w/ Standard Analytical Flowcell (254 nm only) 115 VAC; 50 / 60 Hz  
Part # 014-0001-1 Same as above but 220 – 240 VAC; 50 / 60 Hz  
Part # 014-0011 Model DFW-20C w/ Standard Analytical Flowcell (254nm but can be converted to other wavelengths w/ available lamps / filters). 115 VAC; 50 / 60 Hz  
Part # 014-0011-1 Same as above but 220 – 240 VAC; 50 / 60 Hz  
Part # 014-0012 Model DFW-21C w/ Standard Analytical Flowcell (280 nm but can be converted to other wavelengths w/ available lamps / filters). 115 VAC; 50 / 60 Hz.  
Part # 014-0012-1 Same as above but 220 – 240 VAC; 50 / 60 Hz

#### Accessories:

Wavelength Conversion Kits:  
Part # 025-0129 DFW-20C 280 nm Lamp and Filter Kit  
Part # 025-0130 DFW-20C or DFW-21C 365 nm Lamp and Filter Kit  
Part # 025-0128 DFW-20C or DFW-21C 254 nm Lamp and Filter Kit  
Part # 025-0131 DFW-20C or DFW-21C 420 nm Lamp and Filter Kit (Requires Optional VIS Photocell – See Below)  
Part # 025-0132 DFW-20C or DFW-21C 505 nm Lamp and Filter Kit (Requires Optional VIS Photocell)  
Part # 025-0020 VIS Dual Silicon Diode Photocell

#### Flowcells :

Part # 025-0022 Analytical Flowcell PEEK, 7 mm Pathlength, 10 $\mu$ l Volume w/ 12 in 1 / 16 PEEK Tubing  
Part # 025-0127 Same as above but SS construction w/ SS tubing  
Part # 025- Same as Part # 025-0022 but with Heat Exchanger  
Part # 025- Same as Part # 025-0127 but with Heat Exchanger  
Part # 025-0021 Semi-Prep Flowcell PEEK, 2.5 mm pathlength; 44  $\mu$ l Volume w/ 24 in 1 / 8 in TFE Tubing  
Part # 025-0085 Preparative Flowcell PEEK, 2.0 mm Pathlength, 4.0  $\mu$ l Volume w/ 1 / 8 in Fittings  
Part # 025- Same as above but in SS w/ SS Fittings  
Part # 025-0126 Microbore Flowcell PEEK 5.0 mm Pathlength; 1.5  $\mu$ l Volume w/ 1 / 32 in Tubing

#### Cables :

Part # 025-0027 Cable for Remote Control and Recorder / Integrator  
Part # 025-0149 Cable for Remote Control, Recorder / Integrator for Automated Systems



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