

UV-Vis DiffusIR

AT A GLANCE

- ▶ Micrometer-controlled sample focus to optimize results for every sample
- ▶ Easy sample loading
- ▶ Optional environmental chambers for heating, cooling and high-vacuum applications
- ▶ Quick-release feature of environmental chambers for easy insertion and removal of sealed chambers
- ▶ PC temperature controller option for programming ramping rates and isothermal hold times



TEMPERATURE CONTROL
OPTIONS AVAILABLE



The UV-Vis DiffusIR™ diffuse reflection accessory is great for research and routine measurements.

DESIGN

Powered optical mirrors are diamond-turned aluminum for optimal performance and reflectivity. The UV-Vis DiffusIR base is completely enclosed to shield against external light. To avoid additional stray light from filtering into the accessory, a magnetically-attached light shield is included to cover the sample slide. The standard configuration offers a two-position slide to accommodate reference and sample cups.

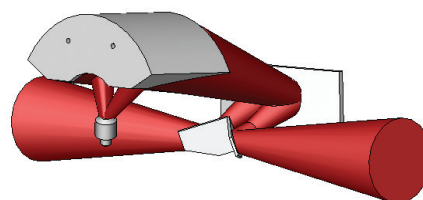
The heart of the DiffusIR is a unique monolithic, ellipsoidal, reflector, permanently fixed in place, which eliminates the need for repositioning the focus for sample placement. The optical design efficiently collects diffuse radiation generated from the sample. The sample Z-position can be optimized by using the micrometer sample focusing adjustment. In this manner the sensitivity of the accessory is maximized without sacrificing precision. The UV-Vis DiffusIR comes equipped with a Sample Preparation and Loading Kit.

For advanced temperature studies, environmental chambers are available and may be configured for temperatures from -150 °C to 1000 °C. Using the chamber's porous ceramic sample cups, reaction gases may be flowed through the sample. All chambers are compatible with the MIR/NIR DiffusIR also.



Environmental Chamber for the UV-Vis DiffusIR.

Coupling the UV-Vis DiffusIR and environmental chambers with the PIKE Digital Temperature Control Module and TempPRO™ software provides the ability to graphically set up the experiment with multiple ramps and hold times.



Optical geometry of the UV-Vis DiffusIR.

PART NUMBER	DESCRIPTION
041-10XXX	UV-Vis DiffusIR Accessory Includes Sample Preparation Kit with 2 micro and 2 macro sample cups, sample loading tools, alignment mirror, 35-mm mortar with pestle and KBr powder (100 g)
	Notes: Replace XXX with your spectrophotometer's Instrument Code listed in the back of the catalog.
Environmental Chamber Options	
162-4200	Environmental Chamber, HTV, ambient to 1000 °C
162-4140	Environmental Chamber, LTV, -150 to 500 °C
	Notes: HTV and LTV chambers require the selection of a temperature control module. UV-Vis DiffusIR chambers include front plate accommodating environmental chamber (easily changeable with standard UV-Vis DiffusIR front plate), Pin-Loc chamber insertion for easy sample exchange, KBr window, ceramic sampling cups compatible with vacuum and reaction formats, ports and 2 shut-off valves for vacuum operation and ports for connection of water cooling. Operation of the LTV at sub-ambient temperatures requires PN 162-4165 or 162-4166 Liquid Nitrogen-Cooled System and Temperature Control Module, and rotary pump for vacuum insulation. All chambers require a liquid circulator to reduce heat transfer to the outer housing and to preserve the life of the chamber heaters.

ENVIRONMENTAL CHAMBER SPECIFICATIONS

Temperature Range, HTV	Ambient to 1000 °C
Temperature Range, LTV	-150 to 500 °C
Accuracy	+/- 0.5° up to 100 °C +/- 0.5% of set point > 100 °C
Heating Rate, Maximum	Up to 20 °C/min HTV
Temperature Control	Digital
Kinetic Setup	Touch-panel display
Requires Digital Temperature Control Module, And PIKE TempPRO Software (sold Separately)	Unlimited temperature ramps Individual ramp rate and hold time settings Graphical display of experiment settings Trigger data collection at specified times or temperatures USB interface
Sensor	K Type (for HTV) RTD Type, Pt100 (for LTV)
Input	100–240 VAC (HTV and LTV versions)
Output	28 VDC/84 W maximum (HTV version) 54VDC/84 W maximum (LTV version)
Vacuum Achievable	1 x 10 ⁻⁶ Torr (13 x 10 ⁻⁴ Pa)
Window Size	32 x 3 mm disk
Leaking Rate	< 6.0 x 10 ⁻¹¹ Pa m ³ /sec
Sample Cup Size	6.0-mm OD, 4.0-mm height 4.7-mm ID, 2.0-mm depth
Sample Cup Design	Porous ceramic compatible with powders and gas flow
Cooling Ports	Quick-Fit, 6-mm ID
Gas/Vacuum Ports	1/8" Swagelok®

PART NUMBER	DESCRIPTION
Temperature Control Modules	
076-2550	Digital Temperature Control Module
007-0207	PIKE TempPRO Software
162-4165	Liquid Nitrogen-Cooled System and Temperature Control Module DiffusIR Environmental Chamber, LTV, -150 to 500 °C (115 V)
162-4166	Liquid Nitrogen-Cooled System and Temperature Control Module DiffusIR Environmental Chamber, LTV, -150 to 500 °C (230 V)
	Notes: Digital Temperature Control Module with TempPRO software (sold separately) provides a graphical user interface for setting experiment parameters and data collection. Please contact PIKE for PC compatibility. The Temperature Control Modules for the HTV and LTV chambers are not interchangeable.
Replacement Parts and Supplies	
170-1100	Liquid Recirculator
042-2010	Sample Cup, micro, 6-mm diameter (2 ea.)
042-2020	Sample Cup, macro, 10-mm diameter (2 ea.)
042-3010	Abrasion Sampling Kit
042-3020	Abrasion Disks, silicon carbide (100 ea.)
042-3025	Abrasion Disks, diamond (50 ea.)
042-3030	Sample Cup Holder and Base
160-8010	KBr Powder, 100 g
042-3040	Sample Preparation Kit
042-3060	Flat Sample Post
042-3080	Alignment Mirror, aluminum
162-4298	Rotary Pump for Vac Insulation, 115V
162-4299	Rotary Pump for Vac Insulation, 230V
160-1132	Disk, KBr, 32 x 3 mm
160-1113	Disk, ZnSe, 32 x 3 mm
160-1372	Disk, UV-Vis SiO ₂ , 32 x 3 mm
160-5049	Disk, SiO ₂ , 32 x 3 mm
160-5125	Disk, low OH SiO ₂ , 32 x 3 mm
160-1143	Disk, CaF ₂ , 32 x 3 mm
162-4210	O-Ring for DiffusIR chamber (10 ea.)
162-4215	O-Ring for DiffusIR chamber cooling line (10 ea.)
162-4251	Ceramic Cup for DiffusIR chamber, porous
162-4270	Alignment Mirror for DiffusIR chamber
	Note: Please contact PIKE Technologies for items not described in this list.

SPECIFICATIONS

Optical Design	3X ellipsoidal
Angle Of Incidence	30 degrees, nominal
Dimensions (W X D X H)	102 x 225 x 201 mm (excluding light guard tubes and baseplate)
Sample Focus	Micrometer
Sample Positions	2 positions, slide stops for background and sample with no purge loss
Sample Cups	Micro: 6 diameter x 1.6 mm deep Macro: 10 diameter x 2.3 mm deep