

# DANI

A SCENT OF FUTURE

DANI DISCOVER-GC™  
DEPOSITION AND DETECTION SYSTEM

## DANI DISCOVER-GC

GC-IR DETECTION SYSTEM

### A BEAM OF CONFIDENCE

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# DANI DISCOVIR-GC

GC-IR DETECTION SYSTEM

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### Easy and Rapid identification of all samples of Molecules with Isomer Specific Spectra

DiscovIR-GC enables the coupling of Gas Chromatography to Infrared Spectroscopy for the separation and identification of several molecules including controlled substances, and hazardous materials. Designed as a "walk-up" instrument, its proprietary direct deposition/solid phase FTIR technology enables e.g. routine detection of substances such as cannabinoids in the parts-per-billion range.

### How DiscovIR works

Upon exiting the GC column, the eluants are deposited as a collimated jet onto a cryogenically-cooled sample collection disk. The infrared transparent disk rotates/translates under the deposit tip to result in a spiral deposit track of samples. A beam of infrared light from an interferometer passes through the disk along the deposition track, and infrared spectra are collected onto an MCT detector.

### Key Benefits

- ▲ Solid Phase Transmission Spectra
- ▲ Infrared Provides Isomer Specific Spectra
- ▲ Spectra compatible with all solid phase FTIR Libraries
- ▲ GC-IR Removes Complexity from Mixtures and Adulterants
- ▲ Automatic Polystyrene Calibration
- ▲ SWGDRUG Category A Technique

### Key Applications

- Controlled Substances
- Amphetamines
- Synthetic cannabinoids
- Bath Salts
- Diastereomers
- Ephedrine / Pseudoephedrine
- Flavors & Fragrances



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## DISCOVERIR-GC

GC-IR DETECTION SYSTEM

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### Solution for Synthetic Cannabinoids Analysis

With increasing pressure to correctly identify designer drugs, by-products and cutting agents, it is now essential to provide forensic labs with technology to identify accurately all controlled substances and in particular the ones with positional isomers and diastereomers.

With the **DiscoverIR-GC**® from DANI Instruments, forensic and law enforcement labs can now easily and rapidly identify all samples secured by the law enforcement community.

DANI Instruments' state-of-the-art technology enables the coupling of Gas Chromatography to Infrared Spectroscopy for the separation and identification of controlled substances samples, clandestine chemistry lab materials and hazardous, multi-components material samples. Designed as a "walk-up" instrument, its proprietary direct deposition/solid phase FTIR technology enables routine detection of substances such as cannabinoids in the parts-per-billion range.

### How Does It Work?

Upon exiting the GC column, the eluants are deposited as a collimated jet onto a cryogenically-cooled sample collection disk. The infrared transparent disk rotates/translates under the deposit tip to result in a spiral deposit track of samples. A beam of infrared light from an interferometer passes through the disk along the deposition track, and infrared spectral information is acquired by a MCT detector.

### KEY APPLICATIONS

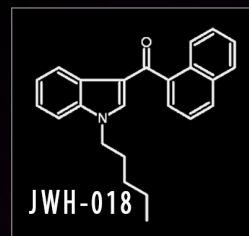
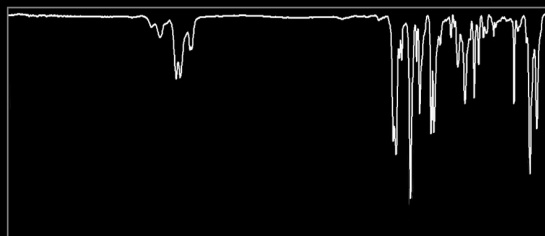
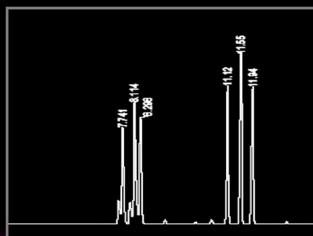
#### CONTROLLED SUBSTANCES

AMPHETAMINES / BATH SALTS /

CANNABINOIDS

DIASTEREOMERS

EPHEDRINE / PSEUDOEPHEDRINE



# DISCOVIR-GC

GC-IR DETECTION SYSTEM

## A BEAM OF CONFIDENCE

### KEY BENEFITS

#### Solid Phase Transmission Spectra

High-quality, solid-phase FTIR spectra acquired at 4 cm<sup>-1</sup> resolution. DiscovIR solid-phase spectra are acquired at -40°C and feature sharp infrared bands.

#### Infrared Provides Isomer Specific Spectra

DiscovIR-GC allows differentiation between isomers with similar mass spectral fragmentation patterns.

#### GC-IR Removes Complexity from Mixtures and Adulterants

A key benefit is the ability to obtain pure spectra of each component in a mixture. GC-IR is ideal for multi-components analysis or adulterated samples.

#### Polystyrene Calibration

One-minute, daily validation routine using NIST traceable polystyrene standard.

#### SWGDRUG Category A Technique

DiscovIR-GC is a SWGDRUG Category A analysis technique and makes an ideal complement to GC-MS. The GC analytical workflow (sample preparation, injector mode, vial format, column, etc) is fully transferrable to the DiscovIR-GC detection system.



System Overview	
Operating Principle	Direct deposition of column eluent on cryogenically-cooled ZnSe sample disc
Detection Method	Built-In FTIR
IR Range	4000-700 wavenumbers
Resolution	4 cm <sup>-1</sup>
Spectrum Type	Transmittance through disc and solid-phase sample
Disc Temperature Control	-70 to +50°C
Unattended Operation	12 hours; autosampler-compatible
IR Detector	0.1 x 0.1 mm MCT
Dimensions	79 x 43 x 69 cm / 55 kg
Data Station	
Platform	Standard desktop computer w/ Microsoft Windows
Spectroscopy Package	Thermo Scientific GRAMS® / AI™
Standard Features	<ul style="list-style-type: none"><li>Real-time and post-run data collect</li><li>Band chromatograms for chemical classes</li><li>Ratio chromatograms for profiling trends</li></ul>
DiscovIR-GC Configuration	
GC Flow Rates Accepted	0.1 to 5mL/min
GC Temperatures	Programmed up to 420°C
Sensitivity	Single-digit nanogram (< 200 pg dodecane)
Chromatograph	Compatible with any GC system
Maintenance and Support	
One-Year Warranty (Extended Warranty Available)	
Remote Diagnostic Capabilities	

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