TriVista DM

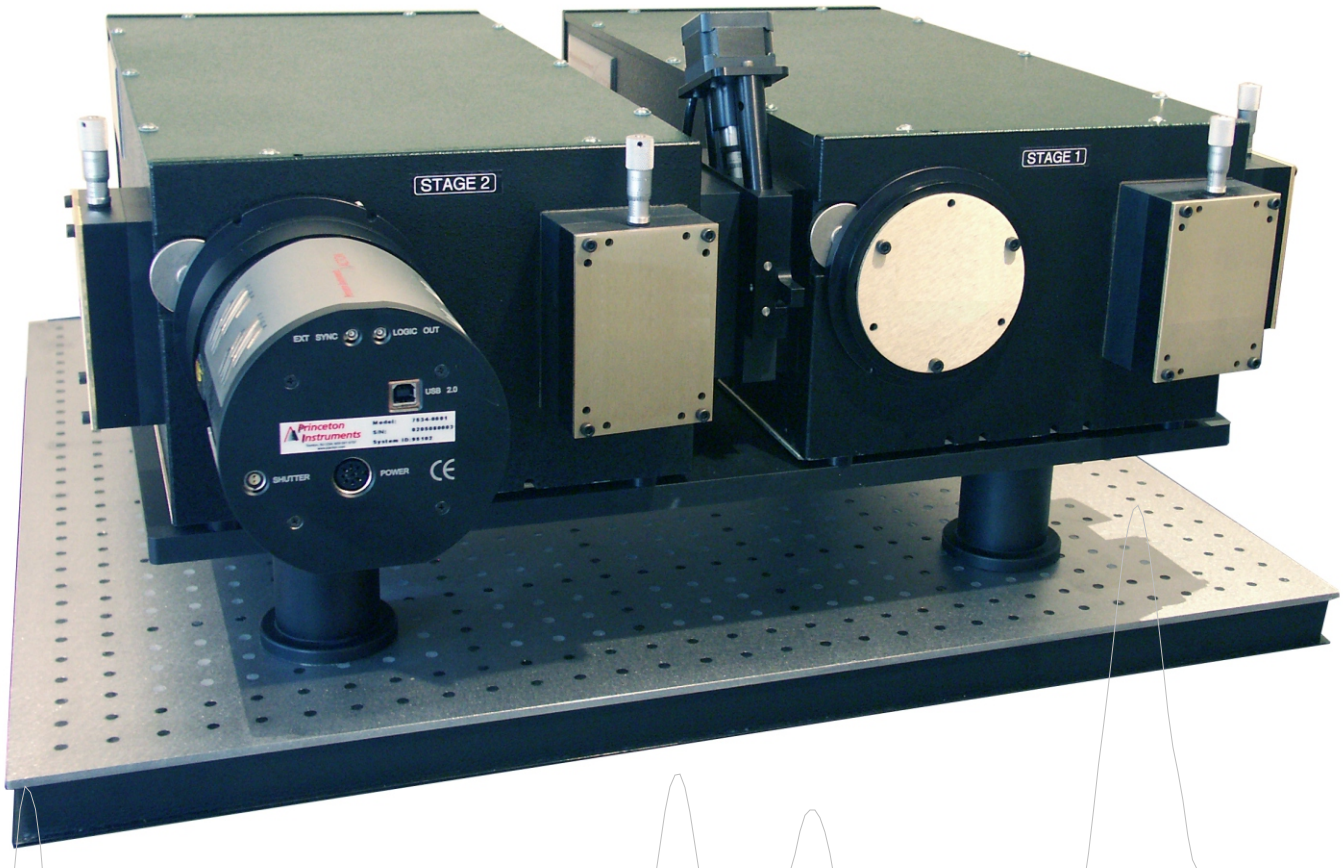
Double Monochromator Series

Imaging Corrected Optics

Additive and Subtractive Dispersion

Interchangeable Triple Grating Turrets

High Flexibilty



Spectroscopy & Imaging GmbH

S&I

TriVista DM

Double Monochromator Series

TriVista DM-Series Double Monochromators

Based on the highly successful SpectraPro® direct digital scanning monochromators and spectrographs, DM-Series Double Monochromators offer unique capabilities for light research applications. They include two precision SpectraPro monochromators used in series where the exit slit of the first monochromator stage is the entrance slit to the second monochromator stage. The systems are able to work in an additive mode for increased dispersion and exceptional stray light rejection and in subtractive mode to work as a tuneable bandpass filter. As a pre monochromator at a TriVista Raman System the DM-55i and DM-77i has an excelent stray light rejection in subtractive mode.

Both stages are mounted to a rigid, common baseplate for exceptional stability.

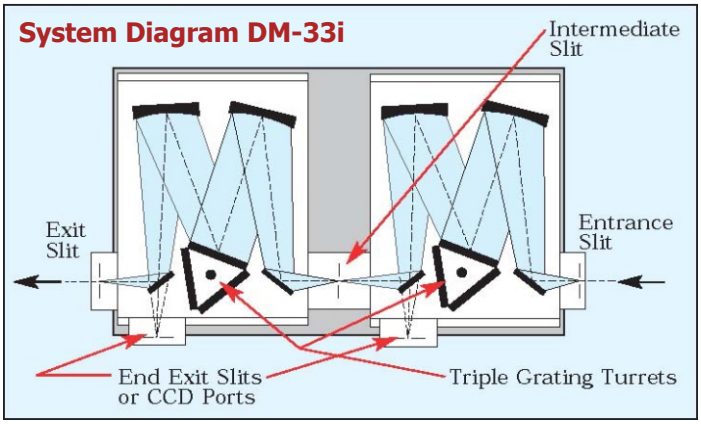
Triple Indexable Gratings

DM-Series double monochromators feature interchangeable triple grating turrets, allowing up to three gratings to be installed at the same time and selected by computer control. The operational range can be increased by selecting gratings with different groove frequencies. System throughput can be maximized by selecting gratings with blaze efficiencies matched to the specific wavelength region of interest.

Accessories, Gratings and System Solutions

S&I offers a complete selection of accessories for DM double monochromators, including light sources, detectors, fiber optic probes, and sample chambers. Hundreds of different gratings are also available to help optimize each instrument for specific applications.

System Diagram DM-33i



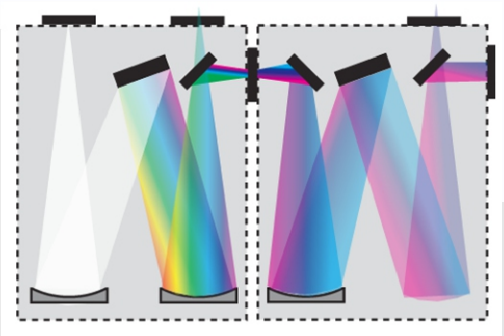
Double or Single Monochromator Operation

DM-Series instruments can be operated as precision double monochromators or as independent high performance single monochromators.

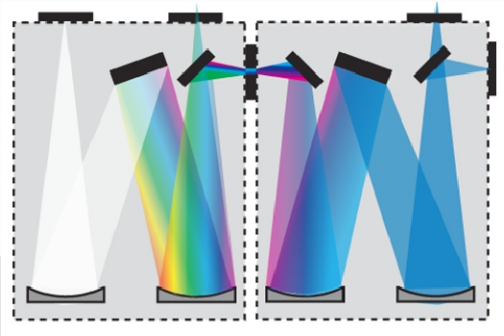
Additive and Subtractive Dispersion

DM-Series instruments can be simply switched by software selection between additive and subtractive Dispersion.

In **additive mode** the second stage re-disperses the light, increasing spectral dispersion while further reducing stray light levels.



In **subtractive mode** the first and second stages work as a tuneable bandpass filter to allow only the desired portion of spectrum to pass through.



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TriVista DM

Double Monochromator Series

Specifications (With 1200grooves/mm Gratings)

Focal Lengths:
Model DM-33i: 2 X 300mm
Model DM-55i: 2 X 500mm
Model DM-77i: 2 X 750mm

Optical Systems:
Additive and Subtractive Double Czerny-Turner.
Imaging corrected optical systems for high throughput and multi-source input capabilities.

Scan Systems and Control:
Computer controlled direct digital scanning through USB 2.0

Entrance/Exit Slit Positions:
180° straight-through optical path is standard. 90°, or 90° + 180° optical paths optionally available.

Wavelength Range:
Mechanical Scanning Range: 0 to 1200 nm.
Operational Range: 200 nm to 1200 nm.
System throughput depends on gratings selected.
Total Operating Range: Deep UV to Infrared with selection of available gratings.

Stray Light Rejection:
10-9 or better

Aperture Ratios:
DM-33i: f/4
DM-55i: f/6.5
DM-77i: f/9.7

Drive Step Size:
0.0025nm (nom.)

Wavelength Reproducibility:
± 0.025 nm or better

Resolution (FWHM):
DM-33i: 0.05 nm
DM-55i: 0.03 nm
DM/77i: 0.02 nm

Reciprocal Linear Dispersion (nom.):
DM-33i: 1.35 nm/mm
DM-55i: 0.85 nm/mm
DM-77i: 0.55 nm/mm

Slit Assemblies:
Standard:
Entrance and exit slits are bilaterally adjustable via micrometer control from 10µm to 3mm. The intermediate slit between the 2 stages is adjustable by computer control from 10µm to12mm In 1µm increments.
Option 1: Motorized bilateral entrance and exit slits adjustable by computer control from 10µm to 3mm.
Option 2: Motorized bilateral entrance and exit slits adjustable by computer control from 10µm to 12mm.

Specifications with 1200 grooves/mm holographic grating.
Resolution specified at 435.8 nm with 10µm wide x 4mm high slits.
Gratings other than 1200 grooves/mm will change resolution, dispersion and operating range.

Note: Specifications are subject to change, February 2016

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