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Custom engineering
so your equipment works exactly as you specify.

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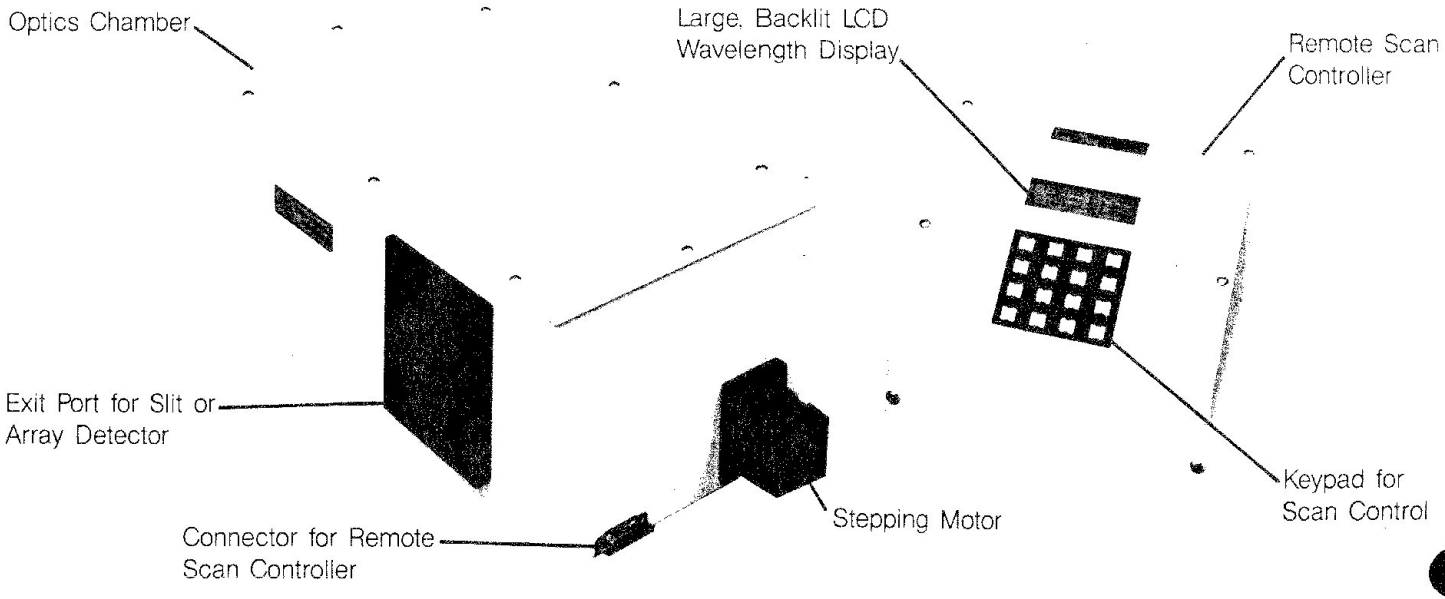
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SpectraPro™-275
0.275 Meter Monochromator/Spectrograph

An Automated Triple Grating Monochromator and Spectrograph Packed with Features

Standard SpectraPro™-275 Components



Description:

The Acton Research Corporation (ARC) SpectraPro™-275 is a precision 275mm focal length monochromator/spectrograph designed for professionals in the laser, analytical, industrial and academic fields. It is a fast f/3.8 instrument featuring array detector compatibility, triple indexable gratings, remote scan control and built-in computer compatibility. Operating the SpectraPro™-275 is very easy, with simple push-button operation or computer controlled scanning. You can easily change gratings, adjust scanning speed, set "go to" wavelengths, program repeating scans and more using simple keystrokes. With hundreds in use throughout the world, the SpectraPro™-275 is a proven instrument for scanning applications and as a spectrograph for multi-channel detection.

Autotrack™ Electronics:

The SpectraPro™-275 contains a built-in microprocessor with menu driven software for scan control, grating selection, change of scanning speeds, and more! Just "pop up" a menu, make your selections, and the SpectraPro™-275 does the rest. All scanning functions and grating selections are controlled from the SpectraPro™-275 remote control unit or by computer if desired. The Autotrack™ electronic system keeps track of gratings, and displays correct wavelength and blaze for any grating installed.

SpectraPro™-275 Scan Mechanism:

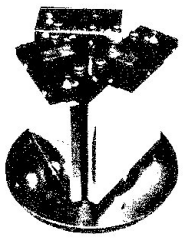
In place of the conventional sine drive system found in most monochromators, the SpectraPro™-275 utilizes direct digital scanning (DDS). A DDS system permits unlimited grating rotation offering the user maximum scanning range from each grating installed. Microprocessor control enables the SpectraPro™-275 scanning system to emulate a sine drive system to provide precise linear scanning with respect to wavelength. The result is a wavelength scanning system that combines the linear scanning of a precision sine drive system with the simplicity and versatility of a direct scanning arrangement.

Accessories:

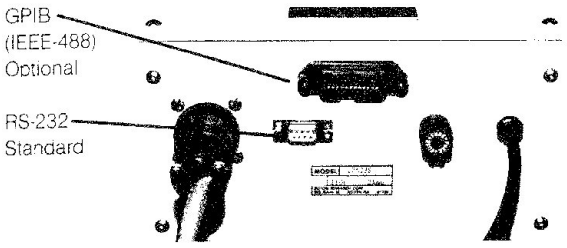
- Light Sources (Hg, Tungsten, Xenon, D_2, IR)
- Detectors (PMT, PbS, InSb)
- Detector Readout Systems
- Data Acquisition Software Packages
- Fiber Optic Light Guides (UV-VIS, and VIS-IR)
- Filter Wheels (Manual or Computer Controllable)

Triple Indexable Gratings:

Up to three gratings can be installed in the SpectraPro™-275 at the same time for user convenience, and any of the three gratings can be indexed into operating position with the simple push of a button on the remote scan controller, or by computer if desired. The triple grating turret is so rugged that we actually ship the SpectraPro™-275 with gratings installed. When received, the SpectraPro™ monochromators and spectrographs are ready for operation.



Turret removed for photograph



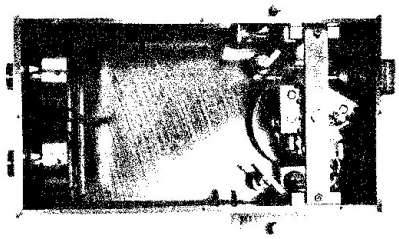
Computer Compatibility:

The SpectraPro™-275 includes RS-232 computer compatibility built-in, with IEEE-488 optional. Just plug your PC into the RS-232 connection and you have computer control. ARC can provide a variety of software packages for the SpectraPro™-275. These include simple terminal emulation programs and completely automated data acquisition software with industry standard Spectra Calc®.

(Spectra Calc® is a data acquisition/display software package from Galactic Industries)

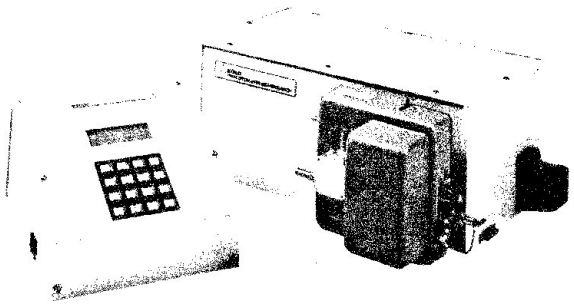
Inside the SpectraPro™-275:

Triple indexable gratings and a direct digital scanning system are standard features that enhance the performance and versatility of the SpectraPro™-275. ARC has also designed in extensive baffling and special light absorbing materials to insure optimum performance and low stray light. Note that the SpectraPro™-275 has no heat generating power supplies, motors or electronics in the optical chamber, therefore potential thermal distortion problems are eliminated.



"Performance with array detectors is exceptional, and that's why nearly every major manufacturer of array detection systems now sells the SpectraPro™-275 as a standard product"

The SpectraPro™-275 provides a flat 25mm wide focal plane and performs exceptionally well with standard focal plane array detectors. ARC offers standard mounts for EG&G, Princeton Instruments and other detection systems. Adjustments to match the focal plane of SpectraPro™-275 with an array detector's focal plane are external, permitting in-situ adjustments. The instrument's triple indexable gratings enable rapid, "survey" and "zoom" scans of a wide variety of radiation sources.



SpectraPro™-275 with EG&G OMA

SpectraPro™-275 Specifications

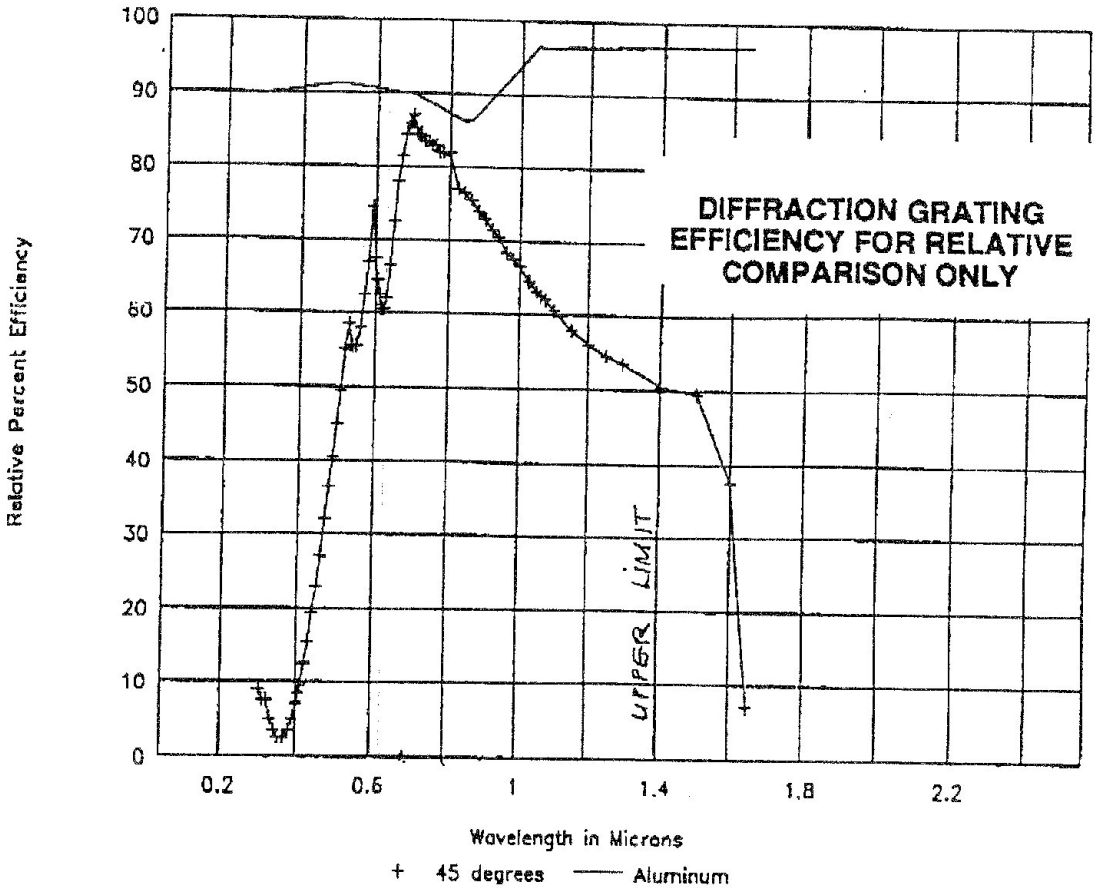
Focal Length	0.275 Meter
Optical System	Computer Optimized Czerny-Turner
Entrance/Exit Slit Positions	180°
Wavelength Range[1]	185nm to the Far Infrared with Available Gratings
Aperture Ratio	f/3.8
Wavelength Accuracy	plus/minus 0.2nm/500nm
Wavelength Reproducibility	plus/minus 0.05nm
Scan Mechanism	Precision Direct Digital Linear Scanning System
Resolution[2]	0.1nm
Reciprocal Linear Dispersion[2]	3.0nm/mm (nominal)
Focal Plane Coverage with Array Detector[3] **(25mm wide focal plane)**	150g/mm grating: 512nm, 300g/mm grating: 256nm
Slits	Bilaterally Adjustable from 10μm to 3mm. Standard Slit Height is 4.0 mm.

1 Capable of operation from 185nm to 1.4μm with a 1200 groove/mm grating.
2 With standard 1200g/mm grating installed. Resolution tested at 435.8nm.
3 Focal plane coverage stated is nominal. Wavelength range covered depends on grating installed.

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PRECISION OPTICS AND SPECTRAL INSTRUMENTATION

ARC P/N *-120-750

DIFFRACTION GRATING EFFICIENCY



Catalog Number:	35-53-15-360	Blaze Angle:	26.7 degrees
Serial Number:	2917-1	Blaze Wavelength:	750 nm
Grooves/mm:	1200	Date:	5-14-91
Type:	ruled	Order:	1st
Remarks:			

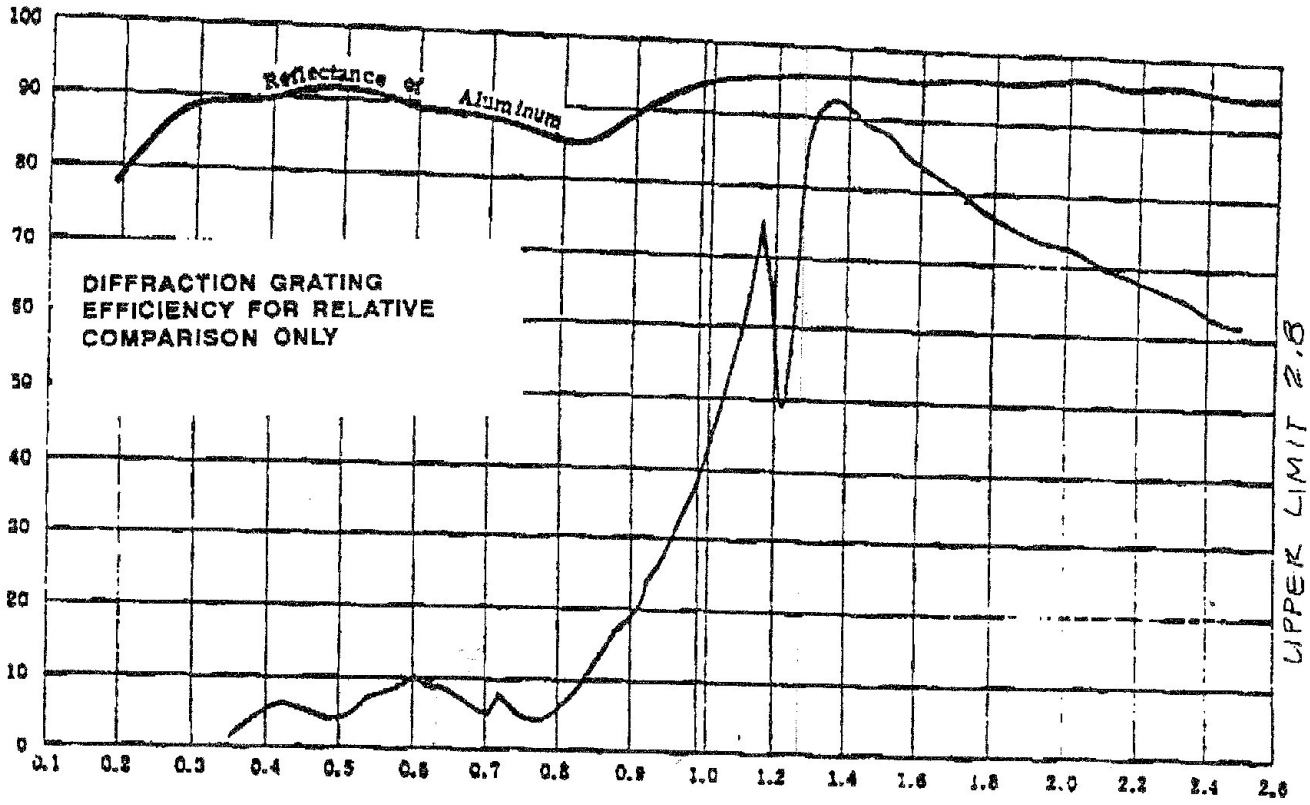
Measured under near-Littrow conditions with 7.5 degrees between incident and diffracted beams.
45 degrees refers to the incident light polarization angle.
Efficiency is measured relative to a standard aluminum mirror.

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TELEPHONE: (508) 263-3584 • TELEX: 94-0787
FAX: (508) 263-5086
PRECISION OPTICS AND SPECTRAL INSTRUMENTATION

DIFFRACTION GRATING EFFICIENCY

Measured under near-Littrow conditions
with 8° between incident and diffracted beams
- relative to reflectance of aluminum

Polarized at 45°



Wavelength - μm

1st Order

Serial No. 1056-33-6-4 Date 1-10-74
Grooves/mm 600 Blaze Angle 28°41'
Type Reflection Blaze Wavelength 1.6 μm
Remarks Cat. #35-53-*-550

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