

# Digikröm DK240

## 1 / 4 Meter Computer Controlled Monochromator/Spectrograph

- Connects to any computer via RS232 or IEEE-488
- Motorized slits.
- Triple-grating turret allows high efficiency scanning across a broad spectral range.
- May be factory configured as a monochromator or spectrograph.
- Scans in both directions and with constant spectral resolution. (CSR).
- Integrates with Spectral filter wheel for automatic filter switching.
- Suitable for fluorescence and absorption studies, detector characterization, thin film measurements, etc.



### The Workhorse: Direct Digital Drive/Constant Spectral Resolution

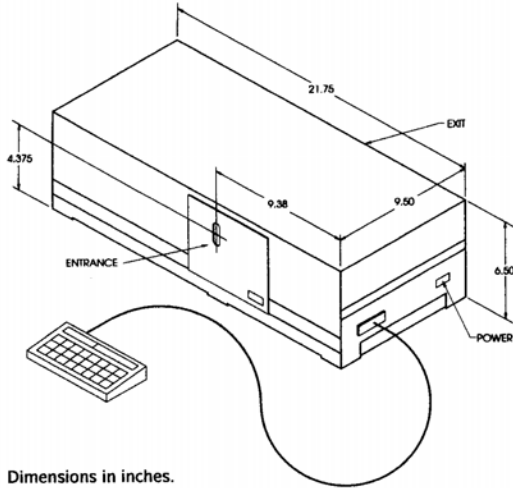
The Digikrom DK240 is a complete computer integrated solution. Easy to use commands control the triple grating turret, motorized slits, and optional motorized filter wheel for quick and easy sorting. Instrument mode can be set for constant spectral resolution (CSR), where the slit width is automatically modified to compensate in the change in dispersion with wavelength to maintain constant spectral bandpass.

Rugged cast construction, a thermal design, and Spectral direct grating drive make this unit the most repeatable and reliable in its class. Each instrument is calibrated and certified prior to delivery.

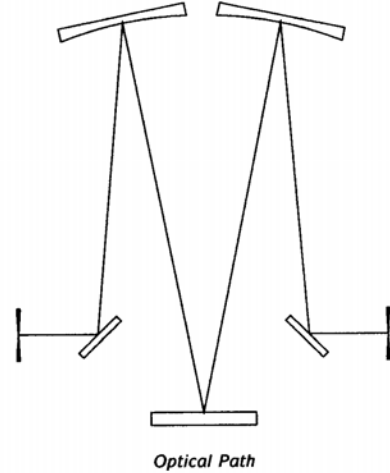
For DK240 models, for a full list of gratings see Appendix A

Grating groove/mm	Wavelength (nm)	Dispersion nm/mm	Resolution* (nm)/slit	
			0.01mm	0.125mm
1200	200	3.5	0.1	0.5
	800	3.3	0.1	0.4
	1500	1.9	<0.1	0.2
600	200	6.9	0.2	0.9
	1500	6.6	0.2	0.9
	3000	3.8	0.1	0.5
150	200	27.5	0.8	4
	5000	27.1	0.7	4
	10000	21.2	0.6	3

\* approximately equivalent to bandpass



Dimensions in inches.



**Specifications:**

**Design:** Czerny-Turner.  
Triple-grating turret standard.

**Focal Length:** 240mm

**f/#:** 3.9

**Wavelength Drive:** Worm and wheel with computer control. Bidirectional. Usable in positive or negative grating orders.

**Wavelength Precision and Reproducibility:** 0.007nm (with 1200 g/mm grating)

**Wavelength Accuracy:** ± 0.10nm standard (with 1200 g/mm grating)

**Scan Speed:** 1 to 1200nm/minute (with 1200 g/mm grating)

**Stray Light:** < 0.01% at 220nm (NaI)

**Slits:** Unilateral, computer controlled, curvec  
Width - 10mm to 3000mm  
Height - 2mm to 20mm

**Reciprocal Dispersion:** 3.2nm/mm (with 1200 g/mm grating)

**Max Resolution:** 0.06nm (with 1200 g/mm grating)

**Gratings:** One to three gratings (68 x 68mm standard, 68 x 84mm optional) must be purchased.  
See Appendix A for options.

**Software:** Demonstration control program and LabView driver included.

**Power:** 100 - 240V, 50/60Hz, 60W

**Interface:** RS232 standard

**Weight:** 35 lbs.

**Warranty:** One year

**Options:**

- DKBS - Bi-lateral slits
- DKGPIB - IEEE-488 communication interface (internal)
- DK2400 and Palm Pilot - Hand-held controllers for local control
- IR240 - Gold optics
- DKPURGE - Purge port
- Interface Cables

options and accessories

**Ordering Information:** Please indicate product number plus description when ordering.

**DK240** 1/4 meter Monochromator  
**DKSP240** 1/4 meter Spectrograph w/flat field and fine focus adjustment  
**DKSP240I** Imaging 1/4 meter Spectrograph

## DK Series Options and Accessories

### DKBS

Bi-lateral slit option for DK240/242/480. Both slits are automatically controlled for maintaining image centering when wider slits are necessary (tolerance  $\pm 10\mu\text{m}$ ).

### DKGPIB

Internal IEEE-488/GPIB communication interface option for DK240/242/480. Separate output connector from Monochromator.

### IR240

For use with DK240. Infrared (gold) coatings on optics. Enhances transmission by up to 40% between 600-1100nm.

### IR240SP

Same as above, for use with DKSP240

### IR242

For use with DK242. Infrared (gold) coatings on optics. Enhances transmission by up to 80% between 600-1100nm.

### IRSP242

Same as above, for use with DKSP242

### IR480

For use with DK480. Infrared (gold) coatings on optics. Enhances transmission by up to 40% between 600-1100nm.

### IR480SP

Same as above, for use with DKSP480

### DKPURGE

Purge port provided with standard MPT socket fitting for easy connect/disconnect.

### DK2401

Hand-held monochromator controller for DK240/242/480. Allows local control of monochromator when compute is not available.

### DK12AT

RS232 Cable assembly for AT style computer.

### DK24PS

RS232 Cable assembly for PS/2 computer

### DK24MA

RS232 Cable assembly for MAC computer.

### DK24IC

IEEE-488/GPIB universal cable assembly.

### AB300

Six position, 1" diameter automatic filter wheel assembly that bolts directly to DK entrance. Receives power and commands directly through DK unit.

### DKSP-To-DK

Attachment to allow DKSP Spectrograph to operate as a monochromator.

*Note# Exit flange equipped with 6 fixed slit set. (.125mm, .15mm, .3mm, .6mm, 1.2mm, 2.4mm).*

# Standard Ruled Gratings

## for installation in Digikröm DK series

### Standard Ruled Gratings

Size = 68 x 68 mm

CVI Part #	Ruling (g/mm)	Peak (nm)	Range (nm) @ > 30% T	Peak %T
AG2400-00240-686	2400	240	180 - 680	70
AG1200-00200-686	1200	200	180 - 450	65
AG1200-00250-686	1200	250	180 - 460	70
AG1200-00300-686	1200	300	200 - 750	70
AG1200-00500-686	1200	500	330 - 1500	82
AG1200-00600-686	1200	600	400 - 1500	80
AG1200-00750-686	1200	750	480 - 1500	85
AG1200-01000-686	1200	1000	550 - 1500	75
AG0600-00500-686	600	500	350 - 1300	80
AG0600-01250-686	600	1250	800 - 3000	85
AG0600-01600-686	600	1600	950 - 3000	93
AG0300-00500-686	300	500	310 - 1100	80
AG0300-02000-686	300	2000	1200 - 4000	88
AG0300-02500-686	300	2500	1500 - 4500	88
AG0300-03000-686	300	3000	1800 - 6000	80
AG0150-00500-686	150	500	320 - 980	72
AG0150-04000-686	150	4000	2500 - 9000	93
AG0075-08000-686	75	8000	5000 - 15000	82
AG0050-00600-686	50	600	400 - 1200	78
AG0050-12000-686	50	12000	7500 - 20000	82

See Appendix A for grating efficiency curves

NOTE: Ruled gratings blazed at different wavelengths and Holographic gratings are available on request - call for prices and availability. Wide gratings (68 x 84mm) are available at 40% above list price, add "W" at the end of the part number. Response curves also available on request.

#### AG-686-KIT

Backplate mounting kit, required for user installation of DK gratings.