

## Index to pictures of atomic spectra

Index to pictures of atomic spectra used to illustrate the paper: Spektrografi med digitalkamera og gitter. (Spectrography with digital camera and grating) issued in LMFK bladet, May 2004.

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The file names of the pictures have a clue to the atomic species and an original picture number referred to below.

### Copyright notice

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**Software:** Carl Hemmingsen who has written the data acquisition program DATALYSE, have modified this program to semiautomatic extraction of spectral data from jpeg-pictures like these. Please feel free to send him a mail on the address: [postmaster@datalyse.dk](mailto:postmaster@datalyse.dk).

Picture no.	Element(s)	Details of light source	Setup
<a href="#">2566</a>	K	Osram K/10	<a href="#">1</a>
<a href="#">2567</a> <a href="#">2568</a>	Na	Osram Na/10	<a href="#">1</a>
<a href="#">2569</a> <a href="#">2572</a>	Hg	Osram Hg/10	<a href="#">1</a>
<a href="#">2573</a>	Cd	Osram Cd/10	<a href="#">1</a>
<a href="#">2575</a>	Tl	Osram	<a href="#">1</a>
<a href="#">2576</a>	Zn	Osram 2607	<a href="#">1</a>
<a href="#">2580</a>	Na	Philips	<a href="#">1</a>
<a href="#">2582</a>	Ar	Philips typ 93100E	<a href="#">1</a>
<a href="#">2585</a>	Xe	Philips typ 93102 E	<a href="#">1</a>
<a href="#">2586</a>	Rb	93104E	<a href="#">1</a>
<a href="#">2588</a>	Cs	Philips typ 93105E	<a href="#">1</a>
<a href="#">2590</a>	K	Philips typ 93103E	<a href="#">1</a>
<a href="#">2591</a> <a href="#">2592</a>	He	Philips 93098E	<a href="#">1</a>
<a href="#">2594</a>	Ne	Philips typ 93099 <sup>E</sup>	<a href="#">1</a>
<a href="#">2596</a>	Kr	Philips typ 93101E	<a href="#">1</a>
<a href="#">2599</a>	H <sub>2</sub> O, D <sub>2</sub> O	Leybold Heraeus H2O, D2O 451-41B1 908	<a href="#">1</a>

<a href="#">2602</a>	Hg, fluorescent tube	Osram Dulux EI Longlife 11 W/827	<a href="#">1</a>
<a href="#">2603</a>	Hg, fluorescent tube	Osram Dulux EL 20W/ 41-827	<a href="#">1</a>
<a href="#">3171</a>	Hg, fluorescent tube	Philips economy 6yr, 6 W	<a href="#">2</a>
<a href="#">3173</a>	Daylight	Cloudy	<a href="#">2</a>
<a href="#">3185</a> <a href="#">3186</a>	High Pressure Na	Street lamp, Skovlækkevej, Kolding	<a href="#">3</a>
<a href="#">3189</a>	Hg, fluorescent tube	Philips economy 6yr, 6W	<a href="#">3</a>
<a href="#">3191</a> <a href="#">3192</a>	Daylight	Cloudy	<a href="#">3</a>
<a href="#">3198</a> <a href="#">3199</a>	Sun	Through haze	<a href="#">3</a>
<a href="#">3257</a>	Ar	Geissler	<a href="#">4</a>
<a href="#">3260</a>	Ne	Geissler	<a href="#">4</a>
<a href="#">3263</a>	He	Geissler	<a href="#">4</a>
<a href="#">3264</a>	Kr	Geissler	<a href="#">4</a>
<a href="#">3265</a>	Xe	Geissler	<a href="#">4</a>
<a href="#">3267</a>	N2	Geissler	<a href="#">4</a>
<a href="#">3285</a>	Street Lamps Hg, fluorescent tube and Na-high pressure	No slit 1 <sup>st</sup> and 0 <sup>th</sup> order	
<a href="#">3287</a>	Night scene, Hg, incandescent, reflections	No slit 1 <sup>st</sup> and 0 <sup>th</sup> order	
<a href="#">3290</a>	Night scene, Hg street lamps, auto headlights	No slit 1 <sup>st</sup> and 0 <sup>th</sup> order	

## ***Details of the various setups***

### **1: Camera: Canon G3 4 x zoom**

**Slit:** Adjustable physics lab slit.

**Grating:** holographic, blazed, 1000 l/mm from Spindler & Hoyer right in front of the camera lens, normal to the optical axis of the camera. Direction to slit adjusted in order to place the green part of the spectrum approximately in the middle of the picture.

Distance grating-slit approx. 42 cm

In this setup a narrow reference spectrum from cadmium is photographed with the spectrum. This light comes from a Philips type 03107E lamp.

The four most intense Cd lines are:

Colour:	Wavelength/nm
Blue	467,8
Blue	480,0
Cyan	508,6
Red	643,8

### **2: Canon G3 4 x zoom**

**Slit:** nonadjustable.

**Grating:** ca 500/mm Edwards scientific transparent diffraction grating cut from a larger sheet.

Hoyer placed right in front of the camera lens, normal to the optical axis of the camera. Direction to slit adjusted in order to place the green part of the 1<sup>st</sup> order spectrum approximately in the middle of the picture.

Distance grating-slit approx. 31cm

### **3: Canon G3 4 x zoom**

**Slit:** nonadjustable.

**Grating:** ca 500/mm Edwards scientific transparent diffraction grating cut from a larger sheet.

Hoyer placed right in front of the camera lens, normal to the optical axis of the camera. Direction to slit adjusted in order to place the green part of the 1<sup>st</sup> order spectrum approximately in the middle of the picture.

Distance grating-slit approx. 53 cm

### **4: Canon G3 4 x zoom**

**Slit:** There is no slit. The approx 2 mm dia. discharge from a geissler tube is used instead.

**Grating:** transparent glass mounted replica grating marked 15000 lpi (lines per inch) placed right in front of the camera lens, normal to the optical axis of the camera. Direction to discharge is adjusted in order to place the green part of the 1<sup>st</sup> order spectrum approximately in the middle of the picture.  
Distance grating-geissler tube 3,00 m