

**CPC****COOPERATIVE PATENT CLASSIFICATION****G01J**

**MEASUREMENT OF INTENSITY, VELOCITY, SPECTRAL CONTENT, POLARISATION, PHASE OR PULSE CHARACTERISTICS OF INFRA-RED, VISIBLE OR ULTRA-VIOLET LIGHT; COLORIMETRY; RADIATION PYROMETRY** (light sources [F21](#), [H01J](#), [H01K](#), [H05B](#); investigating properties of materials by optical means [G01N](#))

**NOTES**

1. This subclass covers the detection of the presence or absence of infra-red, visible, or ultra-violet light, not otherwise provided for.
2. Attention is drawn to the Notes following the title of class [G01](#).

**G01J 1/00**

**Photometry, e.g. photographic exposure meter** (spectrophotometry [G01J 3/00](#); specially adapted for radiation pyrometry [G01J 5/00](#) {exposure meters built in cameras [G03B 17/06](#)})

## G01J 1/02

- . Details

## G01J 1/0204

- . . {Compact construction}

## G01J 1/0209

- . . . {Monolithic}

## G01J 1/0214

- . . {Constructional arrangements for removing stray light}

## G01J 1/0219

- . . {Electrical interface; User interface}

## G01J 1/0223

- . . {Sample holders for photometry}

## G01J 1/0228

- . . {Control of working procedures; Failure detection; Spectral bandwidth calculation}

## G01J 1/0233

- . . {Handheld}

## G01J 1/0238

- . . {making use of sensor-related data, e.g. for identification of sensor or optical parts}

## G01J 1/0242

- . . {Control or determination of height or angle information of sensors or receivers; Goniophotometry}

## G01J 1/0247

- . . {using a charging unit}

## G01J 1/0252

- . . {Constructional arrangements for compensating for fluctuations caused by e.g. temperature, or using cooling or temperature stabilization of parts of the device; Controlling the atmosphere inside a photometer; Purge systems, cleaning devices ([protection against electromagnetic interferences G01J 2001/0276](#))}

## G01J 2001/0257

- . . {portable}

## G01J 2001/0261

- . . . {Pocket size; Card size}

## G01J 1/0266

- . . {Field-of-view determination; Aiming or pointing of a photometer; Adjusting alignment; Encoding angular position; Size of the measurement area; Position tracking; Photodetection involving different fields of view for a single detector}

## G01J 1/0271

- . . {Housings; Attachments or accessories for photometers}

## G01J 2001/0276

- . . {Protection}

## G01J 2001/028

- . . . {against liquid}

## G01J 2001/0285

- . . . {against laser damage}

## G01J 1/029

- . . {Multi-channel photometry}

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| G01J 1/0295    | . . .   | {Constructional arrangements for removing other types of optical noise or for performing calibration}  |
| G01J 1/04      | . . .   | Optical or mechanical part {supplementary adjustable parts}  |
| G01J 1/0403    | . . .   | {Mechanical elements; Supports for optical elements; Scanning arrangements}  |
| G01J 1/0407    | . . .   | {Optical elements not provided otherwise, e.g. manifolds, windows, holograms, gratings}  |
| G01J 1/0411    | . . . . | {using focussing or collimating elements, i.e. lenses or mirrors; Aberration correction}   |
| G01J 1/0414    | . . . . | {using plane or convex mirrors, parallel phase plates, or plane beam-splitters}  |
| G01J 1/0418    | . . . . | {using attenuators}  |
| G01J 1/0422    | . . . . | {using light concentrators, collectors or condensers}  |
| G01J 1/0425    | . . . . | {using optical fibers}   |
| G01J 1/0429    | . . . . | {using polarisation elements}  |
| G01J 1/0433    | . . . . | {using notch filters}  |
| G01J 1/0437    | . . . . | {using masks, aperture plates, spatial light modulators, spatial filters, e.g. reflective filters}   |
| G01J 1/044     | . . . . | {using shutters}   |
| G01J 1/0444    | . . . . | {using means for replacing an element by another, e.g. for replacing a filter or grating}  |
| G01J 1/0448    | . . . . | {Adjustable, e.g. focussing}   |
| G01J 1/0451    | . . . . | {using means for illuminating a slit efficiently, e.g. entrance slit of a photometer or entrance face of fiber}  |
| G01J 1/0455    | . . . . | {having a throughhole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a through-hole for a light collecting or light injecting optical fibre} |
| G01J 1/0459    | . . . . | {using an optical amplifier of light or coatings to improve optical coupling}  |
| G01J 1/0462    | . . . . | {Slit arrangements}  |
| G01J 1/0466    | . . . . | {with a sighting port}   |
| G01J 1/047     | . . . . | {using extension/expansion of solids or fluids, change of resonant frequency or extinction effect}   |
| G01J 1/0474    | . . . . | {Diffusers ( <a href="#">cavities G01J 2001/0481</a> )}  |
| G01J 1/0477    | . . . . | {Prisms, wedges}   |
| G01J 2001/0481 | . . .   | {Preset integrating sphere or cavity}  |
| G01J 2001/0485 | . . .   | {Cosinus correcting or purposely modifying the angular response of a light sensor}   |
| G01J 1/0488    | . . .   | {with spectral filtering}  |
| G01J 1/0492    | . . . . | {using at least two different filters}   |
| G01J 2001/0496 | . . . . | {using fiber Bragg gratings}   |
| G01J 1/06      | . . .   | Restricting the angle of incident light  |
| G01J 2001/061  | . . . . | {Baffles}  |
| G01J 2001/062  | . . . . | {by fibre-optic packed bundle}   |
| G01J 2001/063  | . . . . | {with selectable field of view}  |

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| G01J 2001/065  | . . . . . | {by changing elements}   |
| G01J 2001/066  | . . . . . | {with an aiming optical device}  |
| G01J 2001/067  | . . . . . | {for angle scan}   |
| G01J 2001/068  | . . . . . | {by diaphragm or the like}   |
| G01J 1/08      | . .       | Arrangements of light sources specially adapted for photometry {standard sources, also using luminescent or radioactive material}        |
| G01J 2001/083  | . . .     | {Testing response of detector}   |
| G01J 2001/086  | . . .     | {Calibrating drift correction}   |
| G01J 1/10      | . .       | by comparison with reference light or electric value {provisionally void}  |
| G01J 1/12      | . .       | using wholly visual means ( <a href="#">G01J 1/20</a> takes precedence)  |
| G01J 1/122     | . . .     | {Visual exposure meters for determining the exposure time in photographic recording or reproducing}                                      |
| G01J 1/124     | . . . . . | {based on the comparison of the intensity of measured light with a comparison source or comparison illuminated surface}                  |
| G01J 1/126     | . . . . . | {for enlarging apparatus}  |
| G01J 1/128     | . . . . . | {for copy- or printing apparatus}  |
| G01J 1/14      | . . .     | using comparison with a surface of graded brightness, {(e.g. for view taking; for analytical applications <a href="#">G01N 21/293</a> )} |
| G01J 1/16      | . .       | using electric radiation detectors ( <a href="#">G01J 1/20</a> takes precedence)   |
| G01J 2001/1605 | . . .     | {Null method}  |
| G01J 2001/161  | . . .     | {Ratio method, i.e. $I_m/I_r$ }  |
| G01J 2001/1615 | . . . . . | {Computing a difference/sum ratio, i.e. $(I_m - I_r) / (I_m + I_r)$ }  |
| G01J 2001/1621 | . . . . . | {Comparing a duty ratio of pulses}   |
| G01J 1/1626    | . . .     | {Arrangements with two photodetectors, the signals of which are compared}  |
| G01J 2001/1631 | . . . . . | {Bridge circuit}   |
| G01J 2001/1636 | . . . . . | {one detector directly monitoring the source, e.g. also impulse time controlling}  |
| G01J 2001/1642 | . . . . . | {and acting on the detecting circuit}  |
| G01J 2001/1647 | . . . . . | {one signal maintained constant}   |
| G01J 2001/1652 | . . . . . | {one detector being transparent before the other one}  |
| G01J 2001/1657 | . . . . . | {one signal being spectrally modified, e.g. for UV}  |
| G01J 2001/1663 | . . . . . | {two detectors of different sensitivity}   |
| G01J 2001/1668 | . . .     | {the measuring signal itself varying in time, e.g. periodic, for example blood pulsation}  |
| G01J 2001/1673 | . . .     | {using a reference sample}   |
| G01J 2001/1678 | . . .     | {Comparing time separated signals, i.e. chopped}   |
| G01J 2001/1684 | . . . . . | {and selecting also a DC level from the signal}  |
| G01J 2001/1689 | . . . . . | {one separated signal being processed differently}   |
| G01J 2001/1694 | . . . . . | {with a signal from on/off switched light source}  |
| G01J 1/18      | . . .     | using comparison with a reference electric value   |
| G01J 2001/182  | . . . . . | {with SH sample and hold circuits}   |
| G01J 2001/184  | . . . . . | {on a succession of signals}   |

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| G01J 2001/186  | . . . . {Comparison or correction from an electric source within the processing circuit}  |
| G01J 2001/188  | . . . . {on pulse train}  |
| G01J 1/20      | . . intensity of the measured or reference value being varied to equalise their effects at the detectors, e.g. by varying incidence angle                                       |
| G01J 1/22      | . . . using a variable element in the light-path, e.g. filter, polarising means<br>( <a href="#">G01J 1/34</a> takes precedence)  |
| G01J 1/24      | . . . . using electric radiation detectors  |
| G01J 2001/242  | . . . . {Filter wheel, i.e. absorption filter series graduated}   |
| G01J 2001/245  | . . . . {with two or more separate attenuated steps}  |
| G01J 2001/247  | . . . . {of spectral wedge type}  |
| G01J 1/26      | . . . . adapted for automatic variation of the measured or reference value<br>(regulation of light intensity <a href="#">G05D 25/00</a> )                                       |
| G01J 1/28      | . . . using variation of intensity or distance of source ( <a href="#">G01J 1/34</a> takes precedence)  |
| G01J 1/30      | . . . . using electric radiation detectors  |
| G01J 1/32      | . . . . adapted for automatic variation of the measured or reference value<br>(regulation of light intensity <a href="#">G05D 25/00</a> )                                       |
| G01J 1/34      | . . . using separate light paths used alternately or sequentially, e.g. flicker   |
| G01J 1/36      | . . . . using electric radiation detectors  |
| G01J 2001/363  | . . . . {Chopper stabilisation}   |
| G01J 2001/366  | . . . . {Balancing two paths}   |
| G01J 1/38      | . using wholly visual means ( <a href="#">G01J 1/10</a> takes precedence)   |
| G01J 1/40      | . . using limit or visibility or extinction effect  |
| G01J 1/42      | . using electric radiation detectors (optical or mechanical part <a href="#">G01J 1/04</a> ; by comparison with a reference light or electric value <a href="#">G01J 1/10</a> ) |
| G01J 1/4204    | . . {with determination of ambient light (solar light <a href="#">G01J 2001/4266</a> )}   |
| G01J 1/4209    | . . {Photoelectric exposure meters for determining the exposure time in recording or reproducing}   |
| G01J 1/4214    | . . . {specially adapted for view-taking apparatus}   |
| G01J 1/4219    | . . . {specially adapted for enlargers}   |
| G01J 1/4223    | . . . {specially adapted for copy - or printing apparatus}  |
| G01J 1/4228    | . . {arrangements with two or more detectors, e.g. for sensitivity compensation}  |
| G01J 2001/4233 | . . . {with selection of detector}  |
| G01J 2001/4238 | . . {Pulsed light}  |
| G01J 2001/4242 | . . {Modulated light, e.g. for synchronizing source and detector circuit}   |
| G01J 2001/4247 | . . {for testing lamps or other light sources}  |
| G01J 2001/4252 | . . . {for testing LED's}   |
| G01J 1/4257    | . . {applied to monitoring the characteristics of a beam, e.g. laser beam, headlamp beam (monitoring arrangements for lasers in general <a href="#">H01S 3/0014</a> )}          |
| G01J 2001/4261 | . . . {Scan through beam in order to obtain a cross-sectional profile of the beam}  |
| G01J 2001/4266 | . . {for measuring solar light}   |
| G01J 2001/4271 | . . . {Pyrrheliometer}  |

- G01J 2001/4276 . . . {Solar energy integrator over time}
- G01J 2001/428 . . . {for sunlight scattered by atmosphere}
- G01J 2001/4285 . . . {Pyranometer, i.e. integrating over space}
- G01J 1/429 . . {applied to measurement of ultraviolet light (using counting tubes [G01T](#))}
- G01J 2001/4295 . . {using a physical effect not covered by other subgroups of [G01J 1/42](#)}
- G01J 1/44 . . Electric circuits {(for command of an exposure part [G03B 7/02](#))}
- G01J 2001/4406 . . . {Plural ranges in circuit, e.g. switchable ranges; Adjusting sensitivity selecting gain values}
- G01J 2001/4413 . . . {Type}
- G01J 2001/442 . . . . {Single-photon detection or photon counting}
- G01J 2001/4426 . . . . {with intensity to frequency or voltage to frequency conversion [IFC or VFC]}
- G01J 2001/4433 . . . . {Peak sensing}
- G01J 2001/444 . . . {Compensating; Calibrating, e.g. dark current, temperature drift, noise reduction or baseline correction; Adjusting}
- G01J 2001/4446 . . . {Type of detector}
- G01J 2001/4453 . . . . {PMT}
- G01J 2001/446 . . . . {Photodiode}
- G01J 2001/4466 . . . . . {Avalanche}
- G01J 2001/4473 . . . . {Phototransistor}
- G01J 2001/448 . . . . {Array [CCD]}
- G01J 2001/4486 . . . . {Streak tube}
- G01J 2001/4493 . . . . {with image intensifier tube [IIT]}
- G01J 1/46 . . . using a capacitor
- G01J 1/48 . . using chemical effects
- G01J 1/50 . . using change in colour of an indicator, e.g. actinometer
- G01J 1/52 . . using photographic effects
- G01J 1/54 . . by observing photo-reactions between gases
- G01J 1/56 . . using radiation pressure or radiometer effect
- G01J 1/58 . . using luminescence generated by light
- G01J 1/60 . . by measuring the pupil of the eye

### **G01J 3/00 Spectrometry; Spectrophotometry; Monochromators; Measuring colour**

- G01J 2003/003 . {Comparing spectra of two light sources}
- G01J 2003/006 . {Fundamentals or review articles}
- G01J 3/02 . Details
- G01J 3/0202 . . {Mechanical elements; Supports for optical elements}
- G01J 3/0205 . . {Optical elements not provided otherwise, e. g. optical manifolds, diffusers, windows}
- G01J 3/0208 . . . {using focussing or collimating elements, e.g. lenses or mirrors; performing aberration correction}
- G01J 3/021 . . . {using plane or convex mirrors, parallel phase plates, or particular reflectors}

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| G01J 3/0213    | . . . {using attenuators}  |
| G01J 3/0216    | . . . {using light concentrators or collectors or condensers}  |
| G01J 3/0218    | . . . {using optical fibers}   |
| G01J 3/0221    | . . . . {the fibers defining an entry slit}  |
| G01J 3/0224    | . . . {using polarising or depolarising elements}  |
| G01J 3/0227    | . . . {using notch filters}  |
| G01J 3/0229    | . . . {using masks, aperture plates, spatial light modulators or spatial filters, e.g. reflective filters}   |
| G01J 3/0232    | . . . {using shutters}   |
| G01J 3/0235    | . . . {using means for replacing an element by another, for replacing a filter or a grating}   |
| G01J 3/0237    | . . . {Adjustable, e.g. focussing}   |
| G01J 3/024     | . . . {using means for illuminating a slit efficiently (e.g. entrance slit of a spectrometer or entrance face of fiber)}   |
| G01J 3/0243    | . . . {having a through-hole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a throughhole for a light collecting or light injecting optical fiber}   |
| G01J 3/0245    | . . . {using an optical amplifier of light, e.g. doped fiber}  |
| G01J 3/0248    | . . . {using a sighting port, e.g. camera or human eye}  |
| G01J 3/0251    | . . . {Colorimeters making use of an integrating sphere}   |
| G01J 3/0254    | . . . {Spectrometers, other than colorimeters, making use of an integrating sphere}  |
| G01J 3/0256    | . . {Compact construction}   |
| G01J 3/0259    | . . . {Monolithic}   |
| G01J 3/0262    | . . {Constructional arrangements for removing stray light}   |
| G01J 3/0264    | . . {Electrical interface; User interface}   |
| G01J 3/0267    | . . {Sample holders for colorimetry}   |
| G01J 3/027     | . . {Control of working procedures of a spectrometer; Failure detection; Bandwidth calculation}  |
| G01J 3/0272    | . . {Handheld}   |
| G01J 3/0275    | . . {making use of sensor-related data, e. g. for identification of sensor parts or optical elements}  |
| G01J 3/0278    | . . {Control or determination of height or angle information for sensors or receivers}   |
| G01J 2003/0281 | . . {slitless}   |
| G01J 3/0283    | . . {using a charging unit}  |
| G01J 3/0286    | . . {Constructional arrangements for compensating for fluctuations caused by temperature, humidity or pressure, or using cooling or temperature stabilization of parts of the device; Controlling the atmosphere inside a spectrometer, e.g. vacuum} |
| G01J 3/0289    | . . {Field-of-view determination; Aiming or pointing of a spectrometer; Adjusting alignment; Encoding angular position; Size of measurement area; Position tracking}   |
| G01J 3/0291    | . . {Housings; Spectrometer accessories; Spatial arrangement of elements, e.g. folded path arrangements}   |
| G01J 3/0294    | . . {Multi-channel spectroscopy}   |

- G01J 3/0297 . . {Constructional arrangements for removing other types of optical noise or for performing calibration}
- G01J 3/04 . . Slit arrangements {slit adjustment}
- G01J 2003/042 . . . {Slit wheel}
- G01J 2003/045 . . . {Sequential slits; Multiple slits}
- G01J 2003/047 . . . {Configuration of two or more entry or exit slits for predetermined delta-lambda}
- G01J 3/06 . . Scanning arrangements {arrangements for order-selection}
- G01J 2003/061 . . . {Mechanisms, e.g. sine bar}
- G01J 2003/062 . . . {motor-driven}
- G01J 2003/063 . . . . {Step motor}
- G01J 2003/064 . . . {Use of other elements for scan, e.g. mirror, fixed grating}
- G01J 2003/065 . . . . {Use of fibre scan for spectral scan}
- G01J 2003/066 . . . {Microprocessor control of functions, e.g. slit, scan, bandwidth during scan}
- G01J 2003/067 . . . {Use of plane parallel plate, e.g. small scan, wobble}
- G01J 2003/068 . . . {tuned to preselected wavelengths}
- G01J 2003/069 . . . {Complex motion, e.g. rotation of grating and correcting translation}
- G01J 3/08 . . Beam switching arrangements
- G01J 3/10 . . Arrangements of light sources specially adapted for spectrometry or colorimetry
- G01J 2003/102 . . . {Plural sources}
- G01J 2003/104 . . . . {Monochromatic plural sources}
- G01J 2003/106 . . . . {the two sources being alternating or selectable, e.g. in two ranges or line:continuum}
- G01J 3/108 . . . {for measurement in the infra-red range}
- G01J 3/12 . . Generating the spectrum; Monochromators
- G01J 2003/1204 . . {Grating and filter}
- G01J 2003/1208 . . {Prism and grating}
- G01J 2003/1213 . . {Filters in general, e.g. dichroic, band}
- G01J 2003/1217 . . . {Indexed discrete filters or choppers}
- G01J 2003/1221 . . . {Mounting; Adjustment}
- G01J 2003/1226 . . {Interference filters}
- G01J 2003/123 . . . {Indexed discrete filters}
- G01J 2003/1234 . . . {Continuously variable IF [CVIF]; Wedge type}
- G01J 2003/1239 . . . {and separate detectors}
- G01J 2003/1243 . . . {Pivoting IF or other position variation}
- G01J 2003/1247 . . . {Tuning}
- G01J 2003/1252 . . . {Using "resonance cell", e.g. Na vapor}
- G01J 3/1256 . . {using acousto-optic tunable filter; (acousto-optic elements or systems [G02F 1/11](#), [G02F 1/33](#))}
- G01J 2003/126 . . {Focal isolation type}
- G01J 2003/1265 . . {the wavelengths being separated in time, e.g. through optical fibre array}
- G01J 2003/1269 . . {Electrooptic filter}



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| G01J 2003/1273 | . . {Order selection}  |
| G01J 2003/1278 | . . {Mask with spectral selection}   |
| G01J 2003/1282 | . . {Spectrum tailoring}   |
| G01J 2003/1286 | . . {Polychromator in general}   |
| G01J 2003/1291 | . . {polarised, birefringent}  |
| G01J 2003/1295 | . . {Plural entry slits, e.g. for different incidences}  |
| G01J 3/14      | . . using refracting elements, e.g. prisms ( <a href="#">G01J 3/18</a> , <a href="#">G01J 3/26</a> take precedence {prisms per se <a href="#">G02B 5/04</a> }) |
| G01J 2003/145  | . . . {Prism systems for straight view}  |
| G01J 3/16      | . . . with autocollimation   |
| G01J 3/18      | . . using diffraction elements, e.g. grating ( <a href="#">gratings per se G02B</a> )  |
| G01J 3/1804    | . . . {Plane gratings}   |
| G01J 3/1809    | . . . {Echelle gratings}   |
| G01J 2003/1814 | . . . {Double monochromator}   |
| G01J 2003/1819 | . . . . {Double pass monochromator}  |
| G01J 2003/1823 | . . . . {subtractive}  |
| G01J 2003/1828 | . . . . {with order sorter or prefilter}   |
| G01J 3/1833    | . . . {Grazing incidence}  |
| G01J 3/1838    | . . . {Holographic gratings}   |
| G01J 2003/1842 | . . . {Types of grating}   |
| G01J 2003/1847 | . . . . {Variable spacing}   |
| G01J 2003/1852 | . . . . {Cylindric surface}  |
| G01J 2003/1857 | . . . . {Toroid surface}   |
| G01J 2003/1861 | . . . . {Transmission gratings}  |
| G01J 2003/1866 | . . . {Monochromator for three or more wavelengths}  |
| G01J 2003/1871 | . . . . {Duochromator}   |
| G01J 2003/1876 | . . . . {Polychromator}  |
| G01J 2003/188  | . . . {Constant deviation}   |
| G01J 2003/1885 | . . . {Holder for interchangeable gratings, e.g. at different ranges of wavelengths}   |
| G01J 3/189     | . . . {using at least one grating in an off-plane configuration}   |
| G01J 3/1895    | . . . {using fiber Bragg gratings or gratings integrated in a waveguide}   |
| G01J 3/20      | . . . Rowland circle spectrometers   |
| G01J 3/22      | . . . Littrow mirror spectrometers   |

**WARNING**

material provisionally in [G01J 3/18](#)

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| G01J 3/24     | . . . using gratings profiled to favour a specific order                                      |
| G01J 3/26     | . . using multiple reflection, e.g. Fabry-Perot interferometer, variable interference filters |
| G01J 2003/262 | . . . {Double pass; Multiple pass}  |



- G01J 2003/265 . . . {Read out, e.g. polychromator}
- G01J 2003/267 . . . {of the SISAM type}
- G01J 3/28 . Investigating the spectrum (using colour filters [G01J 3/51](#))
- G01J 3/2803 . . {using photoelectric array detector}
- G01J 2003/2806 . . . {Array and filter array}
- G01J 2003/2809 . . . . {Array and correcting filter}
- G01J 2003/2813 . . . {2D-array}
- G01J 2003/2816 . . . {Semiconductor laminate layer}
- G01J 2003/282 . . . {Modified CCD or like}
- G01J 3/2823 . . {Imaging spectrometer}
- G01J 2003/2826 . . . {Multispectral imaging, e.g. filter imaging}
- G01J 2003/283 . . {computer-interfaced}
- G01J 2003/2833 . . . {and memorised spectra collection}
- G01J 2003/2836 . . . {Programming unit, i.e. source and date processing}
- G01J 2003/284 . . . {Spectral construction}
- G01J 2003/2843 . . . {Processing for eliminating interfering spectra}
- G01J 3/2846 . . {using modulation grid; Grid spectrometers}
- G01J 2003/285 . . . {Hadamard transformation}
- G01J 2003/2853 . . {Averaging successive scans or readings}
- G01J 2003/2856 . . . {and calculation of standard deviation}
- G01J 2003/2859 . . {Peak detecting in spectrum}
- G01J 2003/2863 . . . {and calculating peak area}
- G01J 2003/2866 . . {Markers; Calibrating of scan}
- G01J 2003/2869 . . . {Background correcting}
- G01J 2003/2873 . . . {Storing reference spectrum}
- G01J 2003/2876 . . . {Correcting linearity of signal}
- G01J 2003/2879 . . . {Calibrating scan, e.g. Fabry Perot interferometer}
- G01J 2003/2883 . . . {Correcting overlapping}
- G01J 2003/2886 . . {Investigating periodic spectrum}
- G01J 3/2889 . . {Rapid scan spectrometers; Time resolved spectrometry}
- G01J 2003/2893 . . . {with rotating grating}
- G01J 2003/2896 . . {Vidicon, image intensifier tube}
- G01J 3/30 . . Measuring the intensity of spectral line directly on the spectrum itself ([G01J 3/42](#), [G01J 3/44](#) take precedence)
- G01J 3/32 . . . Investigating bands of a spectrum in sequence by a single detector
- G01J 2003/323 . . . . {Comparing line:background}
- G01J 2003/326 . . . . {Scanning mask, plate, chopper, e.g. small spectrum interval}
- G01J 3/36 . . . Investigating two or more bands of a spectrum by separate detectors
- G01J 3/40 . . Measuring the intensity of spectral lines by determining density of a photograph of the spectrum; Spectrography ([G01J 3/42](#), [G01J 3/44](#) take precedence)

- G01J 3/42 . . Absorption spectrometry; Double beam spectrometry; Flicker spectrometry; Reflection spectrometry ([beam switching arrangements G01J 3/08](#))
- G01J 2003/421 . . . {Single beam}
- G01J 2003/423 . . . {Spectral arrangements using lasers, e.g. tunable}
- G01J 2003/425 . . . {Reflectance}
- G01J 3/427 . . . Dual wavelengths spectrometry
- G01J 2003/4275 . . . . {Polarised dual wavelength spectrometry}
- G01J 3/433 . . . Modulation spectrometry; Derivative spectrometry
- G01J 2003/4332 . . . . {frequency-modulated}
- G01J 2003/4334 . . . . {by modulation of source, e.g. current modulation}
- G01J 2003/4336 . . . . {by magnetic modulation, e.g. Zeeman effect}
- G01J 3/4338 . . . . {Frequency modulated spectrometry}
- G01J 3/44 . . Raman spectrometry; Scattering spectrometry; {Fluorescence spectrometry}
- G01J 3/4406 . . . {Fluorescence spectrometry}
- G01J 3/4412 . . . {Scattering spectrometry (particle sizing by light scattering [G01N 15/0205](#); optical velocimetry of particles [G01P 5/20](#), [G01P 5/26](#))}
- G01J 2003/4418 . . . . {Power spectrum}
- G01J 2003/4424 . . . . {Fluorescence correction for Raman spectrometry}
- G01J 3/443 . . Emission spectrometry
- G01J 2003/4435 . . . {Measuring ratio of two lines, e.g. internal standard}
- G01J 3/447 . . Polarisation spectrometry
- G01J 3/45 . . Interferometric spectrometry
- G01J 2003/451 . . . {Dispersive interferometric spectrometry}
- G01J 2003/452 . . . {with recording of image of spectral transformation, e.g. hologram}
- G01J 3/453 . . . by correlation of the amplitudes
- G01J 3/4531 . . . . {Devices without moving parts}
- G01J 3/4532 . . . . {Devices of compact or symmetric construction ([G01J 3/4531](#) takes precedence)}
- G01J 2003/4534 . . . . {Interferometer on illuminating side}
- G01J 3/4535 . . . . {Devices with moving mirror ([G01J 3/4532](#) takes precedence)}
- G01J 3/4537 . . . . {Devices with refractive scan}
- G01J 2003/4538 . . . . {Special processing}
- G01J 3/457 . . Correlation spectrometry, e.g. of the intensity ([G01J 3/453](#) takes precedence)
- G01J 3/46 . Measurement of colour; Colour measuring devices, e.g. colorimeters ([measuring colour temperature G01J 5/60](#))
- G01J 3/461 . . {with colour spinners}
- G01J 3/462 . . {Computing operations in or between colour spaces; Colour management systems}
- G01J 3/463 . . {Colour matching}
- G01J 3/465 . . {taking into account the colour perception of the eye; using tristimulus detection}
- G01J 2003/466 . . {Coded colour; Recognition of predetermined colour; Determining proximity to predetermined colour}

- G01J 2003/467 . . {Colour computing}
- G01J 2003/468 . . {of objects containing fluorescent agent}
- G01J 3/50 . . using electric radiation detectors
- G01J 3/501 . . . {Colorimeters using spectrally-selective light sources, e.g. LEDs}
- G01J 3/502 . . . {using a dispersive element, e.g. grating, prism}
- G01J 2003/503 . . . {Densitometric colour measurements}
- G01J 3/504 . . . {Goniometric colour measurements, for example measurements of metallic or flake based paints}
- G01J 3/505 . . . {measuring the colour produced by lighting fixtures other than screens, monitors, displays or CRTs}
- G01J 3/506 . . . {measuring the colour produced by screens, monitors, displays or CRTs}
- G01J 2003/507 . . . {the detectors being physically selective}
- G01J 3/508 . . . {measuring the colour of teeth}
- G01J 3/51 . . . using colour filters
- G01J 3/513 . . . . {having fixed filter-detector pairs}
- G01J 2003/516 . . . . . {with several stacked filters or stacked filter-detector pairs}
- G01J 3/52 . . using colour charts
- G01J 3/522 . . . {circular colour charts}
- G01J 3/524 . . . {Calibration of colorimeters}
- G01J 3/526 . . . {for choosing a combination of different colours, e.g. to produce a pleasing effect for an observer}
- G01J 3/528 . . . . {using colour harmony theory}

**G01J 4/00**

**Measuring polarisation of light** (investigating or analysing materials by measuring rotation of plane of polarised light [G01N 21/21](#))

- G01J 2004/001 . {Devices}
- G01J 2004/002 . . {Selecting polarisation direction}
- G01J 2004/004 . . . {sequential, i.e. time-divided}
- G01J 2004/005 . . . {simultaneous, i.e. space-divided}
- G01J 2004/007 . . . {Mechanical mounting}
- G01J 2004/008 . {Polarisation rate}
- G01J 4/02 . Polarimeters of separated-field type; Polarimeters of half-shadow type
- G01J 4/04 . Polarimeters using electric detection means ([G01J 4/02](#) takes precedence)

**G01J 5/00**

**Radiation pyrometry** (photometry in general [G01J 1/00](#); spectrometry in general [G01J 3/00](#) {measuring temperature in general, i.e. with a contacting sensor [G01K](#); calorimetry of radiation beams [G01K 17/00](#); direction finders for radiant sources [G01S](#); intrusion detection by radiation [G08B](#)})

- G01J 5/0003 . {for sensing the radiant heat transfer of samples, e.g. emittance meter}
- G01J 5/0007 . . {of wafers or semiconductor substrates, e.g. using Rapid Thermal Processing}
- G01J 5/0011 . . {Ear thermometers ([G01J 5/021](#) and [G01J 5/049](#) take precedence)}
- G01J 5/0014 . {for sensing the radiation from gases, flames}
- G01J 5/0018 . . {Flames, plasma or welding}

- G01J 5/0022 . {for sensing the radiation of moving bodies}
- G01J 5/0025 . . {Living bodies (ear thermometers [G01J 5/0011](#); detecting, measuring or recording for diagnostic purposes [A61B 5/00](#))}
- G01J 2005/0029 . . {Sheet}
- G01J 2005/0033 . . {Wheel}
- G01J 5/0037 . {for sensing the heat emitted by liquids}
- G01J 5/004 . . {by molten metals}
- G01J 5/0044 . {Furnaces, ovens, kilns ([G01J 5/0007](#), [G01J 5/004](#) take precedence)}
- G01J 2005/0048 . {Calibrating; Correcting}
- G01J 2005/0051 . . {Methods for correcting for emissivity}
- G01J 2005/0055 . . {Atmospheric correction}
- G01J 2005/0059 . . {Correcting for reflection of the emitter radiation}
- G01J 2005/0062 . . {Linearising circuits}
- G01J 5/0066 . {for hot spots detection}
- G01J 5/007 . {for earth observation}
- G01J 2005/0074 . {having separate detection of emissivity}
- G01J 2005/0077 . {Imaging}
- G01J 2005/0081 . {Thermography}
- G01J 2005/0085 . . {Temperature profile}
- G01J 5/0088 . {in turbines}
- G01J 2005/0092 . {Temperature by averaging, e.g. by scan (scan intended for space- resolved determination [G01J 2005/0081](#))}
- G01J 5/0096 . {for measuring wires, electrical contacts or electronic systems}
- G01J 5/02 . Details
- G01J 5/0205 . . {Mechanical elements; Supports for optical elements}
- G01J 5/021 . . {Probe covers for thermometers, e.g. tympanic thermometers; Containers for probe covers; Disposable probes}
- G01J 5/0215 . . {Compact construction}
- G01J 5/022 . . . {Monolithic}
- G01J 5/0225 . . {Shape of the cavity itself or of elements contained in or suspended over the cavity}
- G01J 5/023 . . . {Particular leg structure or construction or shape; Nanotubes}
- G01J 5/0235 . . . {Spacers, e.g. for avoidance of stiction}
- G01J 5/024 . . . {Special manufacturing steps or sacrificial layers or layer structures}
- G01J 5/0245 . . . {for performing thermal shunt}
- G01J 5/025 . . {Interfacing a pyrometer to an external device or network; User interface}
- G01J 5/0255 . . {Sample holders for pyrometry; Cleaning of sample (using a gas purge [G01J 5/029](#))}
- G01J 5/026 . . {Control of working procedures of a pyrometer, other than calibration (calibration [G01J 2005/0048](#) and [G01J 5/522](#)); Detecting failures in the functioning of a pyrometer; Bandwidth calculation; Gain control; Security control}
- G01J 5/0265 . . {Handheld, portable (ear thermometers [G01J 5/049](#))}

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| G01J 5/027    | . . {making use of sensor-related data, e.g. for identification of sensor parts or optical elements}  |
| G01J 5/0275   | . . {Control or determination of height or distance or angle information for sensors or receivers}  |
| G01J 5/028    | . . {using a charging unit or battery}  |
| G01J 5/0285   | . . {Constructional arrangements for compensating for fluctuations caused by humidity, pressure or electromagnetic waves; Controlling the atmosphere inside a pyrometer ( <a href="#">G01J 5/029</a> takes precedence)} |
| G01J 5/029    | . . {using a gas purge}   |
| G01J 5/0295   | . . {Nulling devices or absolute detection}   |
| G01J 5/04     | . . Casings {Mountings}   |
| G01J 5/041    | . . . {Mountings in enclosures or in a particular environment}  |
| G01J 5/042    | . . . . {High-temperature environment ( <a href="#">G01J 5/0007</a> , <a href="#">G01J 5/0044</a> , <a href="#">G01J 5/0088</a> and <a href="#">G01J 5/004</a> take precedence)}  |
| G01J 5/043    | . . . . {Prevention or determination of dust, smog or clogging ( <a href="#">G01J 5/029</a> takes precedence)}  |
| G01J 5/044    | . . . . {Environment with strong vibrations or shocks}  |
| G01J 5/045    | . . . . {Sealings; Vacuum enclosures; Encapsulated packages; Wafer bonding structures; Getter arrangements (getter arrangements per se <a href="#">H01L 23/26</a> and <a href="#">H01L 21/3221</a> )}                   |
| G01J 5/046    | . . . {Materials; Selection of thermal materials}   |
| G01J 5/047    | . . . {Mobile mounting; Scanning arrangements}  |
| G01J 5/048    | . . . {Protective parts}  |
| G01J 5/049    | . . . {Casings for tympanic thermometers}   |
| G01J 5/06     | . . Arrangements for eliminating effects of disturbing radiation  |
| G01J 5/061    | . . . {using cooling or thermostating of parts of the apparatus (cooling techniques in general <a href="#">F17C</a> , <a href="#">F25J</a> )}   |
| G01J 2005/062 | . . . . {Peltier}   |
| G01J 2005/063 | . . . . {Heating; Thermostating}  |
| G01J 2005/065 | . . . . {by shielding}  |
| G01J 2005/066 | . . . . {Differential arrangement, i.e. sensitive/not sensitive}  |
| G01J 2005/067 | . . . . {Compensating for environment parameters}   |
| G01J 2005/068 | . . . . {Ambient temperature sensor; Housing temperature sensor}  |
| G01J 5/08     | . . Optical features {(optical-mechanical scanning <a href="#">H04N 5/33</a> , <a href="#">G02B 26/10</a> )}  |
| G01J 5/0803   | . . . {Optical elements not provided otherwise, e.g. optical manifolds, gratings, holograms, cubic beamsplitters, prisms, particular coatings}  |
| G01J 5/0806   | . . . . {using focussing or collimating elements,e.g. lenses or mirrors}  |
| G01J 5/0809   | . . . . {using plane or convex mirrors, parallel phase plates or particular reflectors}   |
| G01J 5/0812   | . . . . {using attenuators}   |
| G01J 5/0815   | . . . . {using light concentrators, collectors or condensers}   |
| G01J 5/0818   | . . . . {using waveguides, rods or tubes}   |
| G01J 5/0821   | . . . . . {using optical fibers}  |
| G01J 5/0825   | . . . . . {using polarizing elements}   |

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| G01J 5/0828   | . . . . {using notch filters}   |
| G01J 5/0831   | . . . . {using masks, e.g. structured apertures, using aperture plates or using spatial light modulators or spatial filters, e.g. reflective filters}   |
| G01J 5/0834   | . . . . {using shutters or modulators}  |
| G01J 5/0837   | . . . . {using micro-antennas, e.g. bow-tie}  |
| G01J 5/084    | . . . . {Adjustable, slidable}  |
| G01J 5/0843   | . . . . . {Manually adjustable}   |
| G01J 5/0846   | . . . . {using multiple detectors for performing different types of detection, e.g. radiometry and reflectometry channels}  |
| G01J 5/085    | . . . . {having a throughhole enabling the optical element to fulfil an additional optical function, e.g. a mirror or grating having a throughhole for a light collecting or light injecting optical fiber}   |
| G01J 5/0853   | . . . . {using infrared absorbers other than the usual absorber layers deposited on infrared detectors like bolometers, wherein the heat propagation between the absorber and the detecting element occurs within a solid}  |
| G01J 5/0856   | . . . . {Slit arrangements}   |
| G01J 5/0859   | . . . . {using a sighting arrangement, or a camera for the same purpose}  |
| G01J 5/0862   | . . . . {using optical filters ( <a href="#">G01J 5/602</a> , <a href="#">G01J 5/0828</a> take precedence)}   |
| G01J 5/0865   | . . . . {using means for replacing an element by another, e.g. for replacing a filter}  |
| G01J 5/0868   | . . . . {using means for illuminating a slit or a surface efficiently, e.g. entrance slit of a pyrometer or entrance face of a fiber}   |
| G01J 5/0871   | . . . . {Beam switching arrangements; Photodetection involving different fields of view for a single detector}  |
| G01J 5/0875   | . . . . {Windows or their fastening arrangements}   |
| G01J 5/0878   | . . . . {Diffusers}   |
| G01J 5/0881   | . . . . {Compact construction}  |
| G01J 5/0884   | . . . . {Monolithic}  |
| G01J 5/0887   | . . . . {Integrating cavities mimicking black bodies, wherein the heat propagation between the black body and the measuring element does not occur within a solid; Use of bodies placed inside the fluid stream for measurement of the temperature of gases; Use of the reemission from a surface, e.g. reflective surface; Emissivity enhancement by multiple reflections} |
| G01J 5/089    | . . . . {Field-of-view determination; Aiming or pointing of a pyrometer; Adjusting alignment; Encoding angular position; Size of the measuring area; Position tracking}   |
| G01J 5/0893   | . . . . {Arrangements to attach devices to a pyrometer, i.e. attaching an optical interface; Spatial relative arrangement of optical elements, e.g. folded beam path ( <a href="#">G01J 5/049</a> takes precedence)}  |
| G01J 5/0896   | . . . . {using a light source, e.g. for illuminating a surface}   |
| G01J 5/10     | . using electric radiation detectors  |
| G01J 2005/103 | . . {Absorbing heated plate or film and temperature detector}   |
| G01J 2005/106 | . . {Arrays}  |
| G01J 5/12     | . . using thermoelectric elements, e.g. thermocouples ( <a href="#">thermoelectric elements per se H01L 35/00</a> , <a href="#">H01L 37/00</a> )  |
| G01J 2005/123 | . . . {Thermoelectric array}  |

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| G01J 2005/126 | . . . {Thermoelectric black plate and thermocouple}   |
| G01J 5/14     | . . . Electrical features   |
| G01J 5/16     | . . . . Arrangements with respect to the cold junction; Compensating influence of ambient temperature or other variables          |
| G01J 5/18     | . . . . Special adaptation for indicating or recording (indicating or recording measured values in general <a href="#">G01D</a> ) |
| G01J 5/20     | . . . using resistors, thermistors, or semi-conductors sensitive to radiation   |
| G01J 2005/202 | . . . {Arrays}  |
| G01J 2005/204 | . . . . {prepared by semiconductor processing, e.g. VLSI}   |
| G01J 2005/206 | . . . . {on foils}  |
| G01J 2005/208 | . . . . {superconductive}   |
| G01J 5/22     | . . . Electrical features   |
| G01J 5/24     | . . . . Use of a specially-adapted circuit, e.g. bridge circuit   |
| G01J 5/26     | . . . . Special adaptation for indicating or recording (indicating or recording measured values in general <a href="#">G01D</a> ) |
| G01J 5/28     | . . . using photo-emissive, photo-conductive, or photo-voltaic cells  |
| G01J 2005/283 | . . . {Array}   |
| G01J 2005/286 | . . . . {Arrangement of conductor therefor}   |
| G01J 5/30     | . . . Electrical features   |
| G01J 5/32     | . . . . Special adaptation for indicating or recording (indicating or recording measured values in general <a href="#">G01D</a> ) |
| G01J 5/34     | . . . using capacitors {e.g. pyroelectric elements}   |
| G01J 2005/345 | . . . {Arrays}  |
| G01J 5/36     | . . . using ionisation of gases   |
| G01J 5/38     | . . . using extension or expansion of solids or fluids  |
| G01J 5/40     | . . . using bimetallic elements   |
| G01J 5/42     | . . . using Golay cells   |
| G01J 2005/425 | . . . {Micro-array}   |
| G01J 5/44     | . . . using change of resonant frequency, e.g. of piezo-electric crystal  |
| G01J 5/46     | . . . using radiation pressure or radiometer effect   |
| G01J 5/48     | . . . using wholly visual means   |
| G01J 5/50     | . . . using techniques specified in the subgroups below   |
| G01J 5/505    | . . . {using photographic recording}  |
| G01J 5/52     | . . . using comparison with reference sources, e.g. disappearing-filament pyrometer   |
| G01J 5/522    | . . . {Reference sources, e.g. standard lamps; Black bodies}  |
| G01J 5/524    | . . . {using a reference heater of the emissive surface type, e.g. for selectively absorbing materials}                           |
| G01J 2005/526 | . . . {Periodic insertion of emissive surface}  |
| G01J 2005/528 | . . . {Periodic comparison}   |
| G01J 5/54     | . . . Optical features  |
| G01J 5/56     | . . . Electrical features   |



- G01J 5/58 . . . using absorption; using polarisation; using extinction effect
- G01J 2005/583 . . . {Interferences, i.e. fringe variation with temperature}
- G01J 2005/586 . . . {Polarisation}
- G01J 5/60 . . . using determination of colour temperature {Pyrometry using two wavelengths filtering; using selective, monochromatic or bandpass filtering; using spectral scanning}
- G01J 5/601 . . . {using spectral scanning}
- G01J 5/602 . . . {using selective, monochromatic or bandpass filtering}
- G01J 2005/604 . . . {bandpass filtered}
- G01J 5/605 . . . {using visual determination}
- G01J 2005/607 . . . {on two separate detectors}
- G01J 2005/608 . . . {Colour temperature of lamps, sources or the like}
- G01J 5/62 . . . using means for chopping the light {Compensation for background radiation of chopper element}
- G01J 2005/623 . . . {Compensating radiation of chopper}
- G01J 2005/626 . . . {Electrooptic chopper}

## **G01J 7/00 Measuring velocity of light**

## **G01J 9/00 Measuring optical phase difference (devices or arrangements for controlling the phase of light beams [G02F 1/01](#)); Determining degree of coherence; Measuring optical wavelength (spectrometry [G01J 3/00](#))**

- G01J 2009/002 . {Wavefront phase distribution}
- G01J 2009/004 . {Mode pattern}
- G01J 2009/006 . {using pulses for physical measurements}
- G01J 2009/008 . . {using decay time in cavity}
- G01J 9/02 . by interferometric methods (using interferometers for measuring optically the linear dimensions of objects [G01B 9/02](#))
- G01J 2009/0203 . . {Phased array of beams}
- G01J 2009/0207 . . {Double frequency, e.g. Zeeman}
- G01J 2009/0211 . . {for measuring coherence}
- G01J 9/0215 . . {by shearing interferometric methods}
- G01J 2009/0219 . . . {using two or more gratings}
- G01J 2009/0223 . . {Common path interferometry; Point diffraction interferometry}
- G01J 2009/0226 . . {Fibres}
- G01J 2009/023 . . . {of the integrated optical type}
- G01J 2009/0234 . . {Measurement of the fringe pattern}
- G01J 2009/0238 . . . {the pattern being processed optically, e.g. by Fourier transformation}
- G01J 2009/0242 . . {Compensator}
- G01J 9/0246 . . {Measuring optical wavelength}
- G01J 2009/0249 . . {with modulation}
- G01J 2009/0253 . . . {of wavelength}

- G01J 2009/0257 . . {multiple, e.g. Fabry Perot interferometer}
- G01J 2009/0261 . . {polarised}
- G01J 2009/0265 . . . {with phase modulation}
- G01J 2009/0269 . . {Microscope type}
- G01J 2009/0273 . . {Ring interferometer}
- G01J 2009/0276 . . {Stellar interferometer, e.g. Sagnac}
- G01J 2009/028 . . {Types}
- G01J 2009/0284 . . . {Michelson}
- G01J 2009/0288 . . . {Machzehnder}
- G01J 2009/0292 . . . {Fizeau; Wedge}
- G01J 2009/0296 . . . {achromatic}
- G01J 9/04 . by beating two waves of a same source but of different frequency and measuring the phase shift of the lower frequency obtained
  
- G01J 11/00** **Measuring the characteristics of individual optical pulses or of optical pulse trains**
- G01J 2011/005 . {Streak cameras}