

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](#))

NOTE

This subclass covers the detection of the presence or absence of infra-red, visible, or ultra-violet light, not otherwise provided for.

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 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 1/029 . . { Multi-channel photometry }
- 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 (cavities G01J 2001/0481) }
G01J 1/0477	....	{ Prisms, wedges }
G01J 1/0488	...	{ with spectral filtering }
G01J 1/0492	....	{ using at least two different filters }
G01J 1/06	...	Restricting the angle of incident light
G01J 1/08	..	Arrangements of light sources specially adapted for photometry { standard sources, also using luminescent or radioactive material }
G01J 1/10	.	by comparison with reference light or electric value { provisionally void }
G01J 1/12	..	using wholly visual means (G01J 1/20 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 G01N 21/293 }
G01J 1/16	..	using electric radiation detectors (G01J 1/20 takes precedence)
G01J 1/1626	...	{ Arrangements with two photodetectors, the signals of which are compared }

- G01J 1/18 . . . using comparison with a reference electric value
- 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
([G01J 1/34](#) takes precedence)
- G01J 1/24 using electric radiation detectors
- G01J 1/26 adapted for automatic variation of the measured or reference value
([regulation of light intensity G05D 25/00](#))
- G01J 1/28 . . . using variation of intensity or distance of source ([G01J 1/34](#) takes precedence)
- G01J 1/30 using electric radiation detectors
- G01J 1/32 adapted for automatic variation of the measured or reference value
([regulation of light intensity G05D 25/00](#))
- G01J 1/34 . . . using separate light paths used alternately or sequentially, e.g. flicker
- G01J 1/36 using electric radiation detectors
- G01J 1/38 . using wholly visual means ([G01J 1/10](#) takes precedence)
- G01J 1/40 . . using limit or visibility or extinction effect
- G01J 1/42 . using electric radiation detectors ([optical or mechanical part G01J 1/04](#); by comparison with a reference light or electric value [G01J 1/10](#))
- G01J 1/4204 . . { [with determination of ambient light \(solar light G01J 2001/4266 \)](#) }
- 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 1/4257 . . { [applied to monitoring the characteristics of a beam, e.g. laser beam, headlamp beam \(monitoring arrangements for lasers in general H01S 3/0014 \)](#) }
- G01J 1/429 . . { [applied to measurement of ultraviolet light \(using counting tubes G01T \)](#) }
- G01J 1/44 . . Electric circuits { [for command of an exposure part G03B 7/02](#) }
- 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 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 }
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 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 3/06 .. Scanning arrangements { arrangements for order-selection }
- G01J 3/08 .. Beam switching arrangements
- G01J 3/10 .. Arrangements of light sources specially adapted for spectrometry or colorimetry
- G01J 3/108 ... { for measurement in the infra-red range }

- G01J 3/12 . Generating the spectrum; Monochromators
- G01J 3/1256 .. { using acousto-optic tunable filter; (acousto-optic elements or systems [G02F 1/11](#), [G02F 1/33](#)) }
- G01J 3/14 .. using refracting elements, e.g. prisms ([G01J 3/18](#), [G01J 3/26](#) take precedence)
{ prisms per se [G02B 5/04](#) }
- G01J 3/16 ... with autocollimation
- G01J 3/18 .. using diffraction elements, e.g. grating (gratings per se [G02B](#))
- G01J 3/1804 ... { Plane gratings }
- G01J 3/1809 ... { Echelle gratings }
- G01J 3/1833 ... { Grazing incidence }
- G01J 3/1838 ... { Holographic gratings }
- 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](#)

- 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 3/28 . Investigating the spectrum (using colour filters [G01J 3/51](#))
- G01J 3/2803 .. { using photoelectric array detector }
- G01J 3/2823 .. { Imaging spectrometer }
- G01J 3/2846 .. { using modulation grid; Grid spectrometers }
- G01J 3/2889 .. { Rapid scan spectrometers; Time resolved spectrometry }
- 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 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 3/427 ... Dual wavelengths spectrometry
- G01J 3/433 ... Modulation spectrometry; Derivative spectrometry
- 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 5/00D](#)) }
- G01J 3/443 .. Emission spectrometry
- G01J 3/447 .. Polarisation spectrometry
- G01J 3/45 .. Interferometric spectrometry
- 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 3/4535 { Devices with moving mirror ([G01J 3/4532](#) takes precedence) }
- G01J 3/4537 { Devices with refractive scan }
- 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 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 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 3/508 ... { measuring the colour of teeth }
- G01J 3/51 ... using colour filters
- G01J 3/513 { having fixed 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 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 [A61B5](#)) }

[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 5/0066](#) . { for hot spots detection }

[G01J 5/007](#) . { for earth observation }

[G01J 5/0088](#) . { in turbines }

[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) }
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 (G01J 5/029 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 (G01J 5/0007 , G01J 5/0044 , G01J 5/0088 and G01J 5/004 take precedence) }
G01J 5/043	....	{ Prevention or determination of dust, smog or clogging (G01J 5/029 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 H01L 23/26 and H01L 31/0203B) }
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 F17C , F25J) }
G01J 5/08	..	Optical features { optical-mechanical scanning H04N 5/33 , G02B 26/10 }
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 }
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 (G01J 5/602 , G01J 5/0828 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 (G01J 5/049 takes precedence) }
G01J 5/0896	...	{ using a light source, e.g. for illuminating a surface }
G01J 5/10	.	using electric radiation detectors
G01J 5/12	..	using thermoelectric elements, e.g. thermocouples (thermoelectric elements per se H01L 35/00 , H01L 37/00)
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 G01D)
G01J 5/20	..	using resistors, thermistors, or semi-conductors sensitive to radiation

- 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 G01D](#))
- G01J 5/28 . . using photo-emissive, photo-conductive, or photo-voltaic cells
- G01J 5/30 . . . Electrical features
- G01J 5/32 Special adaptation for indicating or recording ([indicating or recording measured values in general G01D](#))
- G01J 5/34 . . using capacitors { [e.g. pyroelectric elements](#) }
- 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 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 5/54 . . . Optical features
- G01J 5/56 . . . Electrical features
- G01J 5/58 . . using absorption; using polarisation; using extinction effect
- 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 5/605 . . . { [using visual determination](#) }
- G01J 5/62 . . using means for chopping the light { [Compensation for background radiation of chopper element](#) }
- 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 9/02 . by interferometric methods ([using interferometers for measuring optically the linear dimensions of objects G01B 9/02](#))

G01J 9/0215	.. { by shearing interferometric methods }
G01J 9/0246	.. { Measuring optical wavelength }
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 2001/00	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 2001/02	. Details
G01J 2001/0257	.. portable
G01J 2001/0261	... Pocket size; Card size
G01J 2001/0276	.. Protection
G01J 2001/028	... against liquid
G01J 2001/0285	... against laser damage
G01J 2001/04	.. Optical or mechanical part { supplementary adjustable parts }
G01J 2001/0481	... Preset integrating sphere or cavity
G01J 2001/0485	... Cosinus correcting or purposely modifying the angular response of a light sensor
G01J 2001/0488	... { with spectral filtering }
G01J 2001/0496	.... using fiber Bragg gratings
G01J 2001/06	... 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
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 2001/08	.. 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 2001/10	. by comparison with reference light or electric value { provisionally void }
G01J 2001/16	.. using electric radiation detectors (G01J 1/20 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 2001/1626	... { 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 2001/18	...	using comparison with a reference electric value
G01J 2001/182	....	with SH sample and hold circuits
G01J 2001/184	.....	on a succession of signals
G01J 2001/186	....	Comparison or correction from an electric source within the processing circuit
G01J 2001/188	.....	on pulse train
G01J 2001/20	..	intensity of the measured or reference value being varied to equalise their effects at the detectors, e.g. by varying incidence angle
G01J 2001/22	...	using a variable element in the light-path, e.g. filter, polarising means (G01J 1/34 takes precedence)
G01J 2001/24	....	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 2001/34	...	using separate light paths used alternately or sequentially, e.g. flicker
G01J 2001/36	....	using electric radiation detectors
G01J 2001/363	.....	Chopper stabilisation
G01J 2001/366	.....	Balancing two paths
G01J 2001/42	.	using electric radiation detectors (optical or mechanical part G01J 1/04 ; by comparison with a reference light or electric value G01J 1/10)
G01J 2001/4228	..	{ 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 2001/4257	..	{ applied to monitoring the characteristics of a beam, e.g. laser beam, headlamp beam (monitoring arrangements for lasers in general H01S 3/0014) }
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 2001/4295	..	using a physical effect not covered by other subgroups of G01J 1/42
G01J 2001/44	..	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 2003/00 Spectrometry; Spectrophotometry; Monochromators; Measuring colour

G01J 2003/003	.	Comparing spectra of two light sources
G01J 2003/006	.	Fundamentals or review articles
G01J 2003/02	.	Details
G01J 2003/0281	..	slitless
G01J 2003/04	..	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 2003/06	..	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 2003/10	..	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 2003/12	.	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 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
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 2003/14	..	using refracting elements, e.g. prisms (G01J 3/18 , G01J 3/26 take precedence) { prisms per se G02B 5/04 }
G01J 2003/145	...	Prism systems for straight view
G01J 2003/18	..	using diffraction elements, e.g. grating (gratings per se G02B)
G01J 2003/1814	...	Double monochromator
G01J 2003/1819	....	Double pass monochromator
G01J 2003/1823	....	subtractive
G01J 2003/1828	...	with order sorter or prefilter
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 2003/26	..	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 2003/28	.	Investigating the spectrum (using colour filters G01J 3/51)
G01J 2003/2803	..	{ 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 2003/2823	..	{ 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 data processing
G01J 2003/284	...	Spectral construction
G01J 2003/2843	...	Processing for eliminating interfering spectra
G01J 2003/2846	..	{ 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 2003/2889	..	{ Rapid scan spectrometers; Time resolved spectrometry }
G01J 2003/2893	...	with rotating grating
G01J 2003/2896	..	Vidicon, image intensifier tube
G01J 2003/30	..	Measuring the intensity of spectral line directly on the spectrum itself (G01J 3/42 , G01J 3/44 take precedence)

- G01J 2003/32 . . . 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 2003/42 . . 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 2003/427 . . . Dual wavelengths spectrometry
- G01J 2003/4275 Polarised dual wavelength spectrometry
- G01J 2003/433 . . . 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 2003/44 . . Raman spectrometry; Scattering spectrometry; { [Fluorescence spectrometry](#) }
- G01J 2003/4412 . . . { [Scattering spectrometry \(particle sizing by light scattering G01N 15/0205; optical velocimetry of particles G01P 5/00D \)](#) }
- G01J 2003/4418 Power spectrum
- G01J 2003/4424 . . . Fluorescence correction for Raman spectrometry
- G01J 2003/443 . . Emission spectrometry
- G01J 2003/4435 . . . Measuring ratio of two lines, e.g. internal standard
- G01J 2003/45 . . Interferometric spectrometry
- G01J 2003/451 . . . Dispersive interferometric spectrometry
- G01J 2003/452 . . . with recording of image of spectral transformation, e.g. hologram
- G01J 2003/453 . . . by correlation of the amplitudes
- G01J 2003/4534 Interferometer on illuminating side
- G01J 2003/4538 Special processing
- G01J 2003/46 . . Measurement of colour; Colour measuring devices, e.g. colorimeters ([measuring colour temperature G01J 5/60](#))
- 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 2003/50 . . using electric radiation detectors
- G01J 2003/503 . . . Densitometric colour measurements
- G01J 2003/507 . . . the detectors being physically selective
- G01J 2003/51 . . . using colour filters
- G01J 2003/513 { [having fixed filter-detector pairs](#) }
- G01J 2003/516 with several stacked filters or stacked filter-detector pairs
- G01J 2004/00 **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 2005/00		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 2005/0022	.	{ for sensing the radiation of moving bodies }
G01J 2005/0029	..	Sheet
G01J 2005/0033	..	Wheel
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 2005/0074	.	having separate detection of emissivity
G01J 2005/0077	.	Imaging
G01J 2005/0081	.	Thermography
G01J 2005/0085	..	Temperature profile
G01J 2005/0092	.	Temperature by averaging, e.g. by scan (scan intended for space- resolved determination G01J 2005/0081)
G01J 2005/02	.	Details
G01J 2005/06	..	Arrangements for eliminating effects of disturbing radiation
G01J 2005/061	...	{ using cooling or thermostating of parts of the apparatus (cooling techniques in general F17C , F25J) }
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 2005/10	.	using electric radiation detectors
G01J 2005/103	..	Absorbing heated plate or film and temperature detector
G01J 2005/106	..	Arrays
G01J 2005/12	..	using thermoelectric elements, e.g. thermocouples (thermoelectric elements per

	se H01L 35/00 , H01L 37/00)
G01J 2005/123	... Thermoelectric array
G01J 2005/126	... Thermoelectric black plate and thermocouple
G01J 2005/20	.. 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 2005/28	.. using photo-emissive, photo-conductive, or photo-voltaic cells
G01J 2005/283	... Array
G01J 2005/286	.... Arrangement of conductor therefor
G01J 2005/34	.. using capacitors { e.g. pyroelectric elements }
G01J 2005/345	... Arrays
G01J 2005/38	. using extension or expansion of solids or fluids
G01J 2005/42	.. using Golay cells
G01J 2005/425	... Micro-array
G01J 2005/50	. using techniques specified in the subgroups below
G01J 2005/52	.. using comparison with reference sources, e.g. disappearing-filament pyrometer
G01J 2005/526	... Periodic insertion of emissive surface
G01J 2005/528	... Periodic comparison
G01J 2005/58	.. using absorption; using polarisation; using extinction effect
G01J 2005/583	... Interferences, i.e. fringe variation with temperature
G01J 2005/586	... Polarisation
G01J 2005/60	.. using determination of colour temperature { Pyrometry using two wavelengths filtering; using selective, monochromatic or bandpass filtering; using spectral scanning }
G01J 2005/602	... { using selective, monochromatic or bandpass filtering }
G01J 2005/604	.... bandpass filtered
G01J 2005/607	... on two separate detectors
G01J 2005/608	... Colour temperature of lamps, sources or the like
G01J 2005/62	.. 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 2009/00	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 2009/02 . 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 2009/0215 . . { [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 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 2011/00 Measuring the characteristics of individual optical pulses or of optical pulse trains**
- G01J 2011/005 . Streak cameras