

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 (<i>cavities</i> 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](#)

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 date 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