

CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS

(NOTES omitted)

INSTRUMENTS

G01 MEASURING (counting [G06M](#)); TESTING

(NOTES omitted)

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](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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)	2001/0276	. . . {Protection}
		2001/028	. . . {against liquid}
		2001/0285	. . . {against laser damage}
		1/029	. . . {Multi-channel photometry}
1/02	. Details	1/0295	. . . {Constructional arrangements for removing other types of optical noise or for performing calibration}
1/0204	. . {Compact construction}	1/04	. . Optical or mechanical part {supplementary adjustable parts}
1/0209	. . . {Monolithic}	1/0403	. . . {Mechanical elements; Supports for optical elements; Scanning arrangements}
1/0214	. . {Constructional arrangements for removing stray light}	1/0407	. . . {Optical elements not provided otherwise, e.g. manifolds, windows, holograms, gratings}
1/0219	. . {Electrical interface; User interface}	1/0411	. . . . {using focussing or collimating elements, i.e. lenses or mirrors; Aberration correction}
1/0223	. . {Sample holders for photometry}	1/0414	. . . . {using plane or convex mirrors, parallel phase plates, or plane beam-splitters}
1/0228	. . {Control of working procedures; Failure detection; Spectral bandwidth calculation}	1/0418	. . . . {using attenuators}
1/0233	. . {Handheld}	1/0422	. . . . {using light concentrators, collectors or condensers}
1/0238	. . {making use of sensor-related data, e.g. for identification of sensor or optical parts}	1/0425	. . . . {using optical fibers}
1/0242	. . {Control or determination of height or angle information of sensors or receivers; Goniophotometry}	1/0429	. . . . {using polarisation elements}
1/0247	. . {using a charging unit}	1/0433	. . . . {using notch filters}
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)}	1/0437	. . . . {using masks, aperture plates, spatial light modulators, spatial filters, e.g. reflective filters}
2001/0257	. . {portable}	1/044	. . . . {using shutters}
2001/0261	. . . {Pocket size; Card size}	1/0444	. . . . {using means for replacing an element by another, e.g. for replacing a filter or grating}
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}	1/0448	. . . . {Adjustable, e.g. focussing}
		1/0451	. . . . {using means for illuminating a slit efficiently, e.g. entrance slit of a photometer or entrance face of fiber}
1/0271	. . {Housings; Attachments or accessories for photometers}		

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}	2001/1652	. . . . {one detector being transparent before the other one}
1/0459	. . . . {using an optical amplifier of light or coatings to improve optical coupling}	2001/1657	. . . . {one signal being spectrally modified, e.g. for UV}
1/0462	. . . . {Slit arrangements}	2001/1663	. . . . {two detectors of different sensitivity}
1/0466	. . . . {with a sighting port}	2001/1668	. . . . {the measuring signal itself varying in time, e.g. periodic, for example blood pulsation}
1/047	. . . . {using extension/expansion of solids or fluids, change of resonant frequency or extinction effect}	2001/1673	. . . . {using a reference sample}
1/0474	. . . . {Diffusers (cavities G01J 2001/0481)}	2001/1678	. . . . {Comparing time separated signals, i.e. chopped}
1/0477	. . . . {Prisms, wedges}	2001/1684	. . . . {and selecting also a DC level from the signal}
2001/0481	. . . . {Preset integrating sphere or cavity}	2001/1689	. . . . {one separated signal being processed differently}
2001/0485	. . . . {Cosinus correcting or purposely modifying the angular response of a light sensor}	2001/1694	. . . . {with a signal from on/off switched light source}
1/0488	. . . . {with spectral filtering}	1/18	. . . . using comparison with a reference electric value
1/0492	. . . . {using at least two different filters}	2001/182	. . . . {with SH sample and hold circuits}
2001/0496	. . . . {using fiber Bragg gratings}	2001/184	. . . . {on a succession of signals}
1/06	. . . . Restricting the angle of incident light	2001/186	. . . . {Comparison or correction from an electric source within the processing circuit}
2001/061	. . . . {Baffles}	2001/188	. . . . {on pulse train}
2001/062	. . . . {by fibre-optic packed bundle}	1/20	. . . . intensity of the measured or reference value being varied to equalise their effects at the detectors, e.g. by varying incidence angle
2001/063	. . . . {with selectable field of view}	1/22	. . . . using a variable element in the light-path, e.g. filter, polarising means (G01J 1/34 takes precedence)
2001/065	. . . . . {by changing elements}	1/24	. . . . using electric radiation detectors
2001/066	. . . . . {with an aiming optical device}	2001/242	. . . . . {Filter wheel, i.e. absorption filter series graduated}
2001/067	. . . . . {for angle scan}	2001/245	. . . . . {with two or more separate attenuated steps}
2001/068	. . . . . {by diaphragm or the like}	2001/247	. . . . . {of spectral wedge type}
1/08	. . . . Arrangements of light sources specially adapted for photometry {standard sources, also using luminescent or radioactive material}	1/26	. . . . . adapted for automatic variation of the measured or reference value (regulation of light intensity G05D 25/00)
2001/083	. . . . {Testing response of detector}	1/28	. . . . using variation of intensity or distance of source (G01J 1/34 takes precedence)
2001/086	. . . . {Calibrating drift correction}	1/30	. . . . using electric radiation detectors
1/10	. . . . by comparison with reference light or electric value {provisionally void}	1/32	. . . . . adapted for automatic variation of the measured or reference value (regulation of light intensity G05D 25/00)
1/12	. . . . using wholly visual means (G01J 1/20 takes precedence)	1/34	. . . . using separate light paths used alternately or sequentially, e.g. flicker
1/122	. . . . {Visual exposure meters for determining the exposure time in photographic recording or reproducing}	1/36	. . . . using electric radiation detectors
1/124	. . . . . {based on the comparison of the intensity of measured light with a comparison source or comparison illuminated surface}	2001/363	. . . . . {Chopper stabilisation}
1/126	. . . . . {for enlarging apparatus}	2001/366	. . . . . {Balancing two paths}
1/128	. . . . . {for copy- or printing apparatus}	1/38	. . . . using wholly visual means (G01J 1/10 takes precedence)
1/14	. . . . using comparison with a surface of graded brightness, {(e.g. for view taking; for analytical applications G01N 21/293)}	1/40	. . . . using limit or visibility or extinction effect
1/16	. . . . using electric radiation detectors (G01J 1/20 takes precedence)	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)
2001/1605	. . . . {Null method}	1/4204	. . . . {with determination of ambient light (solar light G01J 2001/4266)}
2001/161	. . . . {Ratio method, i.e. I_m/I_r }	1/4209	. . . . {Photoelectric exposure meters for determining the exposure time in recording or reproducing}
2001/1615	. . . . . {Computing a difference/sum ratio, i.e. $(I_m - I_r) / (I_m + I_r)$ }	1/4214	. . . . {specially adapted for view-taking apparatus}
2001/1621	. . . . . {Comparing a duty ratio of pulses}	1/4219	. . . . {specially adapted for enlargers}
1/1626	. . . . {Arrangements with two photodetectors, the signals of which are compared}	1/4223	. . . . {specially adapted for copy - or printing apparatus}
2001/1631	. . . . . {Bridge circuit}		
2001/1636	. . . . . {one detector directly monitoring the source, e.g. also impulse time controlling}		
2001/1642	. . . . . {and acting on the detecting circuit}		
2001/1647	. . . . . {one signal maintained constant}		

- 1/4228 . . {arrangements with two or more detectors, e.g. for sensitivity compensation}
- 2001/4233 . . . {with selection of detector}
- 2001/4238 . . {Pulsed light}
- 2001/4242 . . {Modulated light, e.g. for synchronizing source and detector circuit}
- 2001/4247 . . {for testing lamps or other light sources}
- 2001/4252 . . . {for testing LED's}
- 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)}
- 2001/4261 . . . {Scan through beam in order to obtain a cross-sectional profile of the beam}
- 2001/4266 . . {for measuring solar light}
- 2001/4271 . . . {Pyrrheliometer}
- 2001/4276 . . . {Solar energy integrator over time}
- 2001/428 . . . {for sunlight scattered by atmosphere}
- 2001/4285 . . . {Pyranometer, i.e. integrating over space}
- 1/429 . . {applied to measurement of ultraviolet light (using counting tubes G01T)}
- 2001/4295 . . {using a physical effect not covered by other subgroups of G01J 1/42}
- 1/44 . . Electric circuits {(for command of an exposure part G03B 7/02)}
- 2001/4406 . . . {Plural ranges in circuit, e.g. switchable ranges; Adjusting sensitivity selecting gain values}
- 2001/4413 . . . {Type}
- 2001/442 {Single-photon detection or photon counting}
- 2001/4426 {with intensity to frequency or voltage to frequency conversion [IFC or VFC]}
- 2001/4433 {Peak sensing}
- 2001/444 . . . {Compensating; Calibrating, e.g. dark current, temperature drift, noise reduction or baseline correction; Adjusting}
- 2001/4446 . . . {Type of detector}
- 2001/4453 {PMT}
- 2001/446 {Photodiode}
- 2001/4466 {Avalanche}
- 2001/4473 {Phototransistor}
- 2001/448 {Array [CCD]}
- 2001/4486 {Streak tube}
- 2001/4493 {with image intensifier tube [IIT]}
- 1/46 . . . using a capacitor
- 1/48 . . using chemical effects
- 1/50 . . using change in colour of an indicator, e.g. actinometer
- 1/52 . . using photographic effects
- 1/54 . . by observing photo-reactions between gases
- 1/56 . . using radiation pressure or radiometer effect
- 1/58 . . using luminescence generated by light
- 1/60 . . by measuring the pupil of the eye
- 3/00 Spectrometry; Spectrophotometry; Monochromators; Measuring colours**
- 2003/003 . . {Comparing spectra of two light sources}
- 2003/006 . . {Fundamentals or review articles}
- 3/02 . . Details
- 3/0202 . . {Mechanical elements; Supports for optical elements}
- 3/0205 . . {Optical elements not provided otherwise, e.g. optical manifolds, diffusers, windows}
- 3/0208 {using focussing or collimating elements, e.g. lenses or mirrors; performing aberration correction}
- 3/021 {using plane or convex mirrors, parallel phase plates, or particular reflectors}
- 3/0213 {using attenuators}
- 3/0216 {using light concentrators or collectors or condensers}
- 3/0218 {using optical fibers}
- 3/0221 {the fibers defining an entry slit}
- 3/0224 {using polarising or depolarising elements}
- 3/0227 {using notch filters}
- 3/0229 {using masks, aperture plates, spatial light modulators or spatial filters, e.g. reflective filters}
- 3/0232 {using shutters}
- 3/0235 {using means for replacing an element by another, for replacing a filter or a grating}
- 3/0237 {Adjustable, e.g. focussing}
- 3/024 {using means for illuminating a slit efficiently (e.g. entrance slit of a spectrometer or entrance face of fiber)}
- 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}
- 3/0245 {using an optical amplifier of light, e.g. doped fiber}
- 3/0248 {using a sighting port, e.g. camera or human eye}
- 3/0251 {Colorimeters making use of an integrating sphere}
- 3/0254 {Spectrometers, other than colorimeters, making use of an integrating sphere}
- 3/0256 . . . {Compact construction}
- 3/0259 {Monolithic}
- 3/0262 . . . {Constructional arrangements for removing stray light}
- 3/0264 . . . {Electrical interface; User interface}
- 3/0267 . . . {Sample holders for colorimetry}
- 3/027 . . . {Control of working procedures of a spectrometer; Failure detection; Bandwidth calculation}
- 3/0272 . . . {Handheld}
- 3/0275 . . . {making use of sensor-related data, e.g. for identification of sensor parts or optical elements}
- 3/0278 . . . {Control or determination of height or angle information for sensors or receivers}
- 2003/0281 . . . {slitless}
- 3/0283 . . . {using a charging unit}
- 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}
- 3/0289 . . . {Field-of-view determination; Aiming or pointing of a spectrometer; Adjusting alignment; Encoding angular position; Size of measurement area; Position tracking}
- 3/0291 . . . {Housings; Spectrometer accessories; Spatial arrangement of elements, e.g. folded path arrangements}

- 3/0294 . . {Multi-channel spectroscopy}
- 3/0297 . . {Constructional arrangements for removing other types of optical noise or for performing calibration}
- 3/04 . . Slit arrangements {slit adjustment}
- 2003/042 . . . {Slit wheel}
- 2003/045 . . . {Sequential slits; Multiple slits}
- 2003/047 . . . {Configuration of two or more entry or exit slits for predetermined delta-lambda}
- 3/06 . . Scanning arrangements {arrangements for order-selection}
- 2003/061 . . . {Mechanisms, e.g. sine bar}
- 2003/062 . . . {motor-driven}
- 2003/063 {Step motor}
- 2003/064 . . . {Use of other elements for scan, e.g. mirror, fixed grating}
- 2003/065 {Use of fibre scan for spectral scan}
- 2003/066 . . . {Microprocessor control of functions, e.g. slit, scan, bandwidth during scan}
- 2003/067 . . . {Use of plane parallel plate, e.g. small scan, wobble}
- 2003/068 . . . {tuned to preselected wavelengths}
- 2003/069 . . . {Complex motion, e.g. rotation of grating and correcting translation}
- 3/08 . . Beam switching arrangements
- 3/10 . . Arrangements of light sources specially adapted for spectrometry or colorimetry
- 2003/102 {Plural sources}
- 2003/104 {Monochromatic plural sources}
- 2003/106 {the two sources being alternating or selectable, e.g. in two ranges or line:continuum}
- 3/108 . . . {for measurement in the infra-red range}
- 3/12 . Generating the spectrum; Monochromators
- 2003/1204 . . {Grating and filter}
- 2003/1208 . . {Prism and grating}
- 2003/1213 . . {Filters in general, e.g. dichroic, band}
- 2003/1217 . . . {Indexed discrete filters or choppers}
- 2003/1221 . . . {Mounting; Adjustment}
- 2003/1226 . . {Interference filters}
- 2003/123 . . . {Indexed discrete filters}
- 2003/1234 . . . {Continuously variable IF [CVIF]; Wedge type}
- 2003/1239 . . . {and separate detectors}
- 2003/1243 . . . {Pivoting IF or other position variation}
- 2003/1247 . . . {Tuning}
- 2003/1252 . . . {Using "resonance cell", e.g. Na vapor}
- 3/1256 . . {using acousto-optic tunable filter; [\(acousto-optic elements or systems G02F 1/11, G02F 1/33\)](#)}
- 2003/126 . . {Focal isolation type}
- 2003/1265 . . {the wavelengths being separated in time, e.g. through optical fibre array}
- 2003/1269 . . {Electrooptic filter}
- 2003/1273 . . {Order selection}
- 2003/1278 . . {Mask with spectral selection}
- 2003/1282 . . {Spectrum tailoring}
- 2003/1286 . . {Polychromator in general}
- 2003/1291 . . {polarised, birefringent}
- 2003/1295 . . {Plural entry slits, e.g. for different incidences}
- 3/14 . . using refracting elements, e.g. prisms [\(G01J 3/18, G01J 3/26 take precedence {prisms per se G02B 5/04}\)](#)
- 2003/145 . . . {Prism systems for straight view}
- 3/16 . . . with autocollimation
- 3/18 . . using diffraction elements, e.g. grating [\(gratings per se G02B\)](#)
- 3/1804 . . . {Plane gratings}
- 3/1809 . . . {Echelle gratings}
- 2003/1814 . . . {Double monochromator}
- 2003/1819 {Double pass monochromator}
- 2003/1823 {subtractive}
- 2003/1828 . . . {with order sorter or prefilter}
- 3/1833 . . . {Grazing incidence}
- 3/1838 . . . {Holographic gratings}
- 2003/1842 . . . {Types of grating}
- 2003/1847 {Variable spacing}
- 2003/1852 {Cylindric surface}
- 2003/1857 {Toroid surface}
- 2003/1861 {Transmission gratings}
- 2003/1866 . . . {Monochromator for three or more wavelengths}
- 2003/1871 {Duochromator}
- 2003/1876 {Polychromator}
- 2003/188 . . . {Constant deviation}
- 2003/1885 . . . {Holder for interchangeable gratings, e.g. at different ranges of wavelengths}
- 3/189 . . . {using at least one grating in an off-plane configuration}
- 3/1895 . . . {using fiber Bragg gratings or gratings integrated in a waveguide}
- 3/20 . . . Rowland circle spectrometers
- 3/22 . . . Littrow mirror spectrometers
- 3/24 . . . using gratings profiled to favour a specific order
- 3/26 . . using multiple reflection, e.g. Fabry-Perot interferometer, variable interference filters
- 2003/262 . . . {Double pass; Multiple pass}
- 2003/265 . . . {Read out, e.g. polychromator}
- 2003/267 . . . {of the SISAM type}
- 3/28 . Investigating the spectrum [\(using colour filters G01J 3/51\)](#)
- 3/2803 . . {using photoelectric array detector}
- 2003/2806 . . . {Array and filter array}
- 2003/2809 {Array and correcting filter}
- 2003/2813 . . . {2D-array}
- 2003/2816 . . . {Semiconductor laminate layer}
- 2003/282 . . . {Modified CCD or like}
- 3/2823 . . {Imaging spectrometer}
- 2003/2826 . . . {Multispectral imaging, e.g. filter imaging}
- 2003/283 . . {computer-interfaced}
- 2003/2833 . . . {and memorised spectra collection}
- 2003/2836 . . . {Programming unit, i.e. source and date processing}
- 2003/284 . . . {Spectral construction}
- 2003/2843 . . . {Processing for eliminating interfering spectra}
- 3/2846 . . {using modulation grid; Grid spectrometers}
- 2003/285 . . . {Hadamard transformation}
- 2003/2853 . . {Averaging successive scans or readings}
- 2003/2856 . . . {and calculation of standard deviation}
- 2003/2859 . . {Peak detecting in spectrum}
- 2003/2863 . . . {and calculating peak area}
- 2003/2866 . . {Markers; Calibrating of scan}
- 2003/2869 . . . {Background correcting}
- 2003/2873 . . . {Storing reference spectrum}
- 2003/2876 . . . {Correcting linearity of signal}

- 2003/2879 . . . {Calibrating scan, e.g. Fabry Perot interferometer}
- 2003/2883 . . . {Correcting overlapping}
- 2003/2886 . . {Investigating periodic spectrum}
- 3/2889 . . {Rapid scan spectrometers; Time resolved spectrometry}
- 2003/2893 . . . {with rotating grating}
- 2003/2896 . . {Vidicon, image intensifier tube}
- 3/30 . . Measuring the intensity of spectral lines directly on the spectrum itself ([G01J 3/42](#), [G01J 3/44 take precedence](#))
- 3/32 . . . Investigating bands of a spectrum in sequence by a single detector
- 2003/323 {Comparing line:background}
- 2003/326 {Scanning mask, plate, chopper, e.g. small spectrum interval}
- 3/36 . . . Investigating two or more bands of a spectrum by separate detectors
- 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](#))
- 3/42 . . Absorption spectrometry; Double beam spectrometry; Flicker spectrometry; Reflection spectrometry ([beam switching arrangements G01J 3/08](#))
- 2003/421 . . . {Single beam}
- 2003/423 . . . {Spectral arrangements using lasers, e.g. tunable}
- 2003/425 . . . {Reflectance}
- 3/427 . . . Dual wavelengths spectrometry
- 2003/4275 {Polarised dual wavelength spectrometry}
- 3/433 . . . Modulation spectrometry; Derivative spectrometry
- 2003/4332 {frequency-modulated}
- 2003/4334 {by modulation of source, e.g. current modulation}
- 2003/4336 {by magnetic modulation, e.g. Zeeman effect}
- 3/4338 {Frequency modulated spectrometry}
- 3/44 . . Raman spectrometry; Scattering spectrometry {; Fluorescence spectrometry}
- 3/4406 . . . {Fluorescence spectrometry}
- 3/4412 . . . {Scattering spectrometry ([particle sizing by light scattering G01N 15/0205](#); [optical velocimetry of particles G01P 5/20](#), [G01P 5/26](#))}
- 2003/4418 {Power spectrum}
- 2003/4424 . . . {Fluorescence correction for Raman spectrometry}
- 3/443 . . Emission spectrometry
- 2003/4435 . . . {Measuring ratio of two lines, e.g. internal standard}
- 3/447 . . Polarisation spectrometry
- 3/45 . . Interferometric spectrometry
- 2003/451 . . . {Dispersive interferometric spectrometry}
- 2003/452 . . . {with recording of image of spectral transformation, e.g. hologram}
- 3/453 . . . by correlation of the amplitudes
- 3/4531 {Devices without moving parts}
- 3/4532 {Devices of compact or symmetric construction ([G01J 3/4531 takes precedence](#))}
- 2003/4534 {Interferometer on illuminating side}
- 3/4535 {Devices with moving mirror ([G01J 3/4532 takes precedence](#))}
- 3/4537 {Devices with refractive scan}
- 2003/4538 {Special processing}
- 3/457 . . Correlation spectrometry, e.g. of the intensity ([G01J 3/453 takes precedence](#))
- 3/46 . . Measurement of colour; Colour measuring devices, e.g. colorimeters ([measuring colour temperature G01J 5/60](#))
- 3/461 . . {with colour spinners}
- 3/462 . . {Computing operations in or between colour spaces; Colour management systems}
- 3/463 . . {Colour matching}
- 3/465 . . {taking into account the colour perception of the eye; using tristimulus detection}
- 2003/466 . . {Coded colour; Recognition of predetermined colour; Determining proximity to predetermined colour}
- 2003/467 . . {Colour computing}
- 2003/468 . . {of objects containing fluorescent agent}
- 3/50 . . using electric radiation detectors
- 3/501 . . . {Colorimeters using spectrally-selective light sources, e.g. LEDs}
- 3/502 . . . {using a dispersive element, e.g. grating, prism}
- 2003/503 . . . {Densitometric colour measurements}
- 3/504 . . . {Goniometric colour measurements, for example measurements of metallic or flake based paints}
- 3/505 . . . {measuring the colour produced by lighting fixtures other than screens, monitors, displays or CRTs}
- 3/506 . . . {measuring the colour produced by screens, monitors, displays or CRTs}
- 2003/507 . . . {the detectors being physically selective}
- 3/508 . . . {measuring the colour of teeth}
- 3/51 . . . using colour filters
- 3/513 {having fixed filter-detector pairs}
- 2003/516 {with several stacked filters or stacked filter-detector pairs}
- 3/52 . . using colour charts
- 3/522 . . . {circular colour charts}
- 3/524 . . . {Calibration of colorimeters}
- 3/526 . . . {for choosing a combination of different colours, e.g. to produce a pleasing effect for an observer}
- 3/528 {using colour harmony theory}
- 4/00 Measuring polarisation of light ([investigating or analysing materials by measuring rotation of plane of polarised light G01N 21/21](#))**
- 2004/001 . . {Devices}
- 2004/002 . . {Selecting polarisation direction}
- 2004/004 . . . {sequential, i.e. time-divided}
- 2004/005 . . . {simultaneous, i.e. space-divided}
- 2004/007 . . . {Mechanical mounting}
- 2004/008 . . {Polarisation rate}
- 4/02 . . Polarimeters of separated-field type; Polarimeters of half-shadow type
- 4/04 . . Polarimeters using electric detection means ([G01J 4/02 takes precedence](#))

- 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](#)})
- 5/0003 . {for sensing the radiant heat transfer of samples, e.g. emittance meter}
 - 5/0007 . . {of wafers or semiconductor substrates, e.g. using Rapid Thermal Processing}
 - 5/0011 . . {Ear thermometers ([G01J 5/021](#) and [G01J 5/049](#) take precedence)}
 - 5/0014 . {for sensing the radiation from gases, flames}
 - 5/0018 . . {Flames, plasma or welding}
 - 5/0022 . {for sensing the radiation of moving bodies}
 - 5/0025 . . {Living bodies (ear thermometers [G01J 5/0011](#); detecting, measuring or recording for diagnostic purposes [A61B 5/00](#))}
 - 2005/0029 . . {Sheet}
 - 2005/0033 . . {Wheel}
 - 5/0037 . {for sensing the heat emitted by liquids}
 - 5/004 . . {by molten metals}
 - 5/0044 . {Furnaces, ovens, kilns ([G01J 5/0007](#), [G01J 5/004](#) take precedence)}
 - 2005/0048 . {Calibrating; Correcting}
 - 2005/0051 . . {Methods for correcting for emissivity}
 - 2005/0055 . . {Atmospheric correction}
 - 2005/0059 . . {Correcting for reflection of the emitter radiation}
 - 2005/0062 . . {Linearising circuits}
 - 5/0066 . {for hot spots detection}
 - 5/007 . {for earth observation}
 - 2005/0074 . {having separate detection of emissivity}
 - 2005/0077 . {Imaging}
 - 2005/0081 . {Thermography}
 - 2005/0085 . . {Temperature profile}
 - 5/0088 . {in turbines}
 - 2005/0092 . {Temperature by averaging, e.g. by scan ([scan intended for space- resolved determination G01J 2005/0081](#))}
 - 5/0096 . {for measuring wires, electrical contacts or electronic systems}
 - 5/02 . Details
 - 5/0205 . . {Mechanical elements; Supports for optical elements}
 - 5/021 . . {Probe covers for thermometers, e.g. tympanic thermometers; Containers for probe covers; Disposable probes}
 - 5/0215 . . {Compact construction}
 - 5/022 . . . {Monolithic}
 - 5/0225 . . {Shape of the cavity itself or of elements contained in or suspended over the cavity}
 - 5/023 . . . {Particular leg structure or construction or shape; Nanotubes}
 - 5/0235 . . . {Spacers, e.g. for avoidance of stiction}
 - 5/024 . . . {Special manufacturing steps or sacrificial layers or layer structures}
 - 5/0245 . . . {for performing thermal shunt}
 - 5/025 . . {Interfacing a pyrometer to an external device or network; User interface}
 - 5/0255 . . {Sample holders for pyrometry; Cleaning of sample ([using a gas purge G01J 5/029](#))}
 - 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}
 - 5/0265 . . {Handheld, portable (ear thermometers [G01J 5/049](#))}
 - 5/027 . . {making use of sensor-related data, e.g. for identification of sensor parts or optical elements}
 - 5/0275 . . {Control or determination of height or distance or angle information for sensors or receivers}
 - 5/028 . . {using a charging unit or battery}
 - 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)}
 - 5/029 . . {using a gas purge}
 - 5/0295 . . {Nulling devices or absolute detection}
 - 5/04 . . Casings {Mountings}
 - 5/041 . . . {Mountings in enclosures or in a particular environment}
 - 5/042 {High-temperature environment ([G01J 5/0007](#), [G01J 5/0044](#), [G01J 5/0088](#) and [G01J 5/004](#) take precedence)}
 - 5/043 {Prevention or determination of dust, smog or clogging ([G01J 5/029](#) takes precedence)}
 - 5/044 {Environment with strong vibrations or shocks}
 - 5/045 {Sealings; Vacuum enclosures; Encapsulated packages; Wafer bonding structures; Getter arrangements ([getter arrangements per se H01L 23/26](#) and [H01L 21/3221](#))}
 - 5/046 {Materials; Selection of thermal materials}
 - 5/047 {Mobile mounting; Scanning arrangements}
 - 5/048 {Protective parts}
 - 5/049 {Casings for tympanic thermometers}
 - 5/06 . . Arrangements for eliminating effects of disturbing radiation
 - 5/061 . . . {using cooling or thermostating of parts of the apparatus ([cooling techniques in general F17C, F25J](#))}
 - 2005/062 {Peltier}
 - 2005/063 {Heating; Thermostating}
 - 2005/065 {by shielding}
 - 2005/066 {Differential arrangement, i.e. sensitive/not sensitive}
 - 2005/067 {Compensating for environment parameters}
 - 2005/068 {Ambient temperature sensor; Housing temperature sensor}
 - 5/08 . . Optical features ([optical-mechanical scanning H04N 5/33](#), [G02B 26/10](#))}
 - 5/0803 {Optical elements not provided otherwise, e.g. optical manifolds, gratings, holograms, cubic beamsplitters, prisms, particular coatings}
 - 5/0806 {using focussing or collimating elements, e.g. lenses or mirrors}
 - 5/0809 {using plane or convex mirrors, parallel phase plates or particular reflectors}
 - 5/0812 {using attenuators}
 - 5/0815 {using light concentrators, collectors or condensers}
 - 5/0818 {using waveguides, rods or tubes}

5/0821	. . . . . {using optical fibers}	2005/106	. . . {Arrays}
5/0825	. . . . . {using polarizing elements}	5/12	. . . using thermoelectric elements, e.g. thermocouples (thermoelectric elements per se H01L 35/00 , H01L 37/00)
5/0828	. . . . . {using notch filters}	2005/123	. . . . . {Thermoelectric array}
5/0831	. . . . . {using masks, e.g. structured apertures, using aperture plates or using spatial light modulators or spatial filters, e.g. reflective filters}	2005/126	. . . . . {Thermoelectric black plate and thermocouple}
5/0834	. . . . . {using shutters or modulators}	5/14	. . . . . Electrical features
5/0837	. . . . . {using microantennas, e.g. bow-tie}	5/16	. . . . . Arrangements with respect to the cold junction; Compensating influence of ambient temperature or other variables
5/084	. . . . . {Adjustable, slidable}	5/18	. . . . . Special adaptation for indicating or recording (indicating or recording measured values in general G01D)
5/0843	. . . . . {Manually adjustable}	5/20	. . . using resistors, thermistors or semiconductors sensitive to radiation
5/0846	. . . . . {using multiple detectors for performing different types of detection, e.g. radiometry and reflectometry channels}	2005/202	. . . . . {Arrays}
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}	2005/204	. . . . . {prepared by semiconductor processing, e.g. VLSI}
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}	2005/206	. . . . . {on foils}
5/0856	. . . . . {Slit arrangements}	2005/208	. . . . . {superconductive}
5/0859	. . . . . {using a sighting arrangement, or a camera for the same purpose}	5/22	. . . . . Electrical features
5/0862	. . . . . {using optical filters (G01J 5/602 , G01J 5/0828 take precedence)}	5/24	. . . . . Use of a specially-adapted circuit, e.g. bridge circuit
5/0865	. . . . . {using means for replacing an element by another, e.g. for replacing a filter}	5/26	. . . . . Special adaptation for indicating or recording (indicating or recording measured values in general G01D)
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}	5/28	. . . using photo-emissive, photo-conductive, or photo-voltaic cells
5/0871	. . . . . {Beam switching arrangements; Photodetection involving different fields of view for a single detector}	2005/283	. . . . . {Array}
5/0875	. . . . . {Windows or their fastening arrangements}	2005/286	. . . . . {Arrangement of conductor therefor}
5/0878	. . . . . {Diffusers}	5/30	. . . . . Electrical features
5/0881	. . . . . {Compact construction}	5/32	. . . . . Special adaptation for indicating or recording (indicating or recording measured values in general G01D)
5/0884	. . . . . {Monolithic}	5/34	. . . using capacitors {, e.g. pyroelectric elements}
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}	2005/345	. . . . . {Arrays}
5/089	. . . . . {Field-of-view determination; Aiming or pointing of a pyrometer; Adjusting alignment; Encoding angular position; Size of the measuring area; Position tracking}	5/36	. . . using ionisation of gases
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)}	5/38	. . . using extension or expansion of solids or fluids
5/0896	. . . . . {using a light source, e.g. for illuminating a surface}	5/40	. . . using bimetallic elements
5/10	. . . using electric radiation detectors	5/42	. . . using Golay cells
2005/103	. . . {Absorbing heated plate or film and temperature detector}	2005/425	. . . . . {Microarray}
		5/44	. . . using change of resonant frequency, e.g. of piezo- electric crystal
		5/46	. . . using radiation pressure or radiometer effect
		5/48	. . . using wholly visual means
		5/50	. . . using techniques specified in the subgroups below
		5/505	. . . {using photographic recording}
		5/52	. . . using comparison with reference sources, e.g. disappearing-filament pyrometer
		5/522	. . . . . {Reference sources, e.g. standard lamps; Black bodies}
		5/524	. . . . . {using a reference heater of the emissive surface type, e.g. for selectively absorbing materials}
		2005/526	. . . . . {Periodic insertion of emissive surface}
		2005/528	. . . . . {Periodic comparison}
		5/54	. . . . . Optical features
		5/56	. . . . . Electrical features
		5/58	. . . using absorption; using polarisation; using extinction effect
		2005/583	. . . . . {Interferences, i.e. fringe variation with temperature}
		2005/586	. . . . . {Polarisation}

- 5/60 . . using determination of colour temperature
{Pyrometry using two wavelengths filtering;
using selective, monochromatic or bandpass
filtering; using spectral scanning}
- 5/601 . . . {using spectral scanning}
- 5/602 . . . {using selective, monochromatic or bandpass
filtering}
- 2005/604 {bandpass filtered}
- 5/605 . . . {using visual determination}
- 2005/607 . . . {on two separate detectors}
- 2005/608 . . . {Colour temperature of lamps, sources or the
like}
- 5/62 . . using means for chopping the light
{Compensation for background radiation of
chopper element}
- 2005/623 . . . {Compensating radiation of chopper}
- 2005/626 . . . {Electrooptic chopper}

7/00 Measuring velocity of light

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](#))

- 2009/002 . {Wavefront phase distribution}
- 2009/004 . {Mode pattern}
- 2009/006 . {using pulses for physical measurements}
- 2009/008 . . {using decay time in cavity}
- 9/02 . by interferometric methods (using interferometers
for measuring optically the linear dimensions of
objects [G01B 9/02](#))
- 2009/0203 . . {Phased array of beams}
- 2009/0207 . . {Double frequency, e.g. Zeeman}
- 2009/0211 . . {for measuring coherence}
- 9/0215 . . {by shearing interferometric methods}
- 2009/0219 . . . {using two or more gratings}
- 2009/0223 . . {Common path interferometry; Point diffraction
interferometry}
- 2009/0226 . . {Fibres}
- 2009/023 . . . {of the integrated optical type}
- 2009/0234 . . {Measurement of the fringe pattern}
- 2009/0238 . . . {the pattern being processed optically, e.g. by
Fourier transformation}
- 2009/0242 . . {Compensator}
- 9/0246 . . {Measuring optical wavelength}
- 2009/0249 . . {with modulation}
- 2009/0253 . . . {of wavelength}
- 2009/0257 . . {multiple, e.g. Fabry Perot interferometer}
- 2009/0261 . . {polarised}
- 2009/0265 . . . {with phase modulation}
- 2009/0269 . . {Microscope type}
- 2009/0273 . . {Ring interferometer}
- 2009/0276 . . {Stellar interferometer, e.g. Sagnac}
- 2009/028 . . {Types}
- 2009/0284 . . . {Michelson}
- 2009/0288 . . . {Machzehnder}
- 2009/0292 . . . {Fizeau; Wedge}
- 2009/0296 . . . {achromatic}
- 9/04 . by beating two waves of a same source but of
different frequency and measuring the phase shift of
the lower frequency obtained

11/00 Measuring the characteristics of individual optical pulses or of optical pulse trains

- 2011/005 . {Streak cameras}