

CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS (NOTES omitted)

INSTRUMENTS

G03 PHOTOGRAPHY; CINEMATOGRAPHY; ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ELECTROGRAPHY; HOLOGRAPHY (NOTES omitted)

G03H HOLOGRAPHIC PROCESSES OR APPARATUS (holograms, e.g. point holograms, used as ordinary optical elements [G02B 5/32](#); producing stereoscopic or other three-dimensional effects [G02B 30/00](#); diffraction-grating systems [G02B 27/44](#); systems using moiré fringes [G02B 27/60](#); optical logic elements [G02F 3/00](#); stereo-photography [G03B 35/00](#); photosensitive materials or processes for photographic purposes [G03C](#); {stereo-photographic or similar processes [G03C 9/00](#)}; apparatus for processing exposed photographic materials [G03D](#); analogue computers performing mathematical operations with the aid of optical elements [G06E 3/00](#); authentication by radiation, of concealed information carried by holograms or diffraction gratings [G06K 19/16](#); holographic storage [G11B 7/0065](#), [G11C 13/04](#); {stereoscopic or other three dimensional effects in television systems [H04N 13/00](#)})

NOTE

This subclass covers means for producing a record of the phase and amplitude information of a wave-front, which information can be used to reconstruct the original wave-front, or means to reconstruct the original wave-front from a record containing the phase and amplitude information of the wave-front.

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.

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| 1/00 | Holographic processes or apparatus using light, infrared or ultraviolet waves for obtaining holograms or for obtaining an image from them; Details peculiar thereto | 2001/005 | . . {in microscopy, e.g. digital holographic microscope [DHM]} |
| 1/0005 | . {Adaptation of holography to specific applications (holographic optical element G02B 5/32 ; holographic scanner G02B 26/106 ; recognition using holographic mask G06V 10/88 ; holographic memories G11B 7/0065 , G11C 13/042)} | 2001/0055 | . . {in advertising or decorative art} |
| 1/0011 | . . {for security or authentication (holograms on information-bearing cards B42D 25/328 ; testing papers with holograms G07D 7/0032)} | 2001/0061 | . . {in haptic applications when the observer interacts with the holobject} |
| 2001/0016 | . . . {Covert holograms or holobjects requiring additional knowledge to be perceived, e.g. holobject reconstructed only under IR illumination} | 2001/0066 | . . {for wavefront matching wherein the hologram is arranged to convert a predetermined wavefront into a comprehensive wave, e.g. associative memory} |
| 2001/0022 | {Deciphering being performed with numerical or optical key, e.g. with the optical scrambler used during recording} | 2001/0072 | . . {for wavefront conjugation wherein the hologram generates a wavefront conjugating a predetermined object, e.g. null testing, positioning, comparative holography} |
| 2001/0027 | . . . {Being copy-protected against fraudulent replication, e.g. by layering a filter rejecting laser lines} | 2001/0077 | . . {for optical manipulation, e.g. holographic optical tweezers [HOT]} |
| 2001/0033 | . . {in hologrammetry for measuring or analysing} | 2001/0083 | . . {for restoring distorted objects, e.g. restoring objects through scattering media} |
| 2001/0038 | . . . {analogue or digital holobjects} | 2001/0088 | . . {for video-holography, i.e. integrating hologram acquisition, transmission and display} |
| 2001/0044 | . . . {holographic fringes deformations; holographic sensors} | 2001/0094 | . . {for patterning or machining using the holobject as input light distribution} |
| | | 1/02 | . Details {of features involved during the holographic process; Replication of holograms without interference recording} |
| | | 2001/0204 | . . {Object characteristics} |
| | | 2001/0208 | . . {Individual components other than the hologram} |

- 2001/0212 . . . {Light sources or light beam properties ([G03H 1/06](#), [G03H 1/24](#) take precedence; corresponding details, [see subgroups of G03H 2222/00](#))}
- 2001/0216 . . . {Optical components ([G03H 2001/0224](#), [G03H 1/0256](#) take precedence; corresponding details, [see subgroups of G03H 2223/00](#))}
- 2001/022 . . . {Writing means other than actinic light wave}
- 2001/0224 . . . {Active addressable light modulator, i.e. Spatial Light Modulator [SLM]}
- 2001/0228 . . . {Electro-optic or electronic components relating to digital holography ([G03H 2001/0224](#) takes precedence; corresponding details, [see subgroups of G03H 2226/00](#))}
- 2001/0232 . . . {Mechanical components or mechanical aspects not otherwise provided for}
 - 1/0236 . . {Form or shape of the hologram when not registered to the substrate, e.g. trimming the hologram to alphanumeric shape ([substrates bearing a hologram G03H 1/0272](#))}
 - 1/024 . . {Hologram nature or properties}
 - 1/0244 . . {Surface relief holograms ([replicating hologram without interference recording G03H 1/0276](#))}
 - 1/0248 . . {Volume holograms}
 - 1/0252 . . {Laminate comprising a hologram layer}
 - 1/0256 . . {having specific functional layer}
- 2001/026 . . {Recording materials or recording processes ([G03H 2226/11](#) takes precedence; corresponding details, [see subgroups of G03H 2260/00](#))}
- 2001/0264 . . . {Organic recording material}
- 2001/0268 . . . {Inorganic recording material, e.g. photorefractive crystal [PRC]}
 - 1/0272 . . {Substrate bearing the hologram}
 - 1/0276 . . {Replicating a master hologram without interference recording ([surface relief holograms G03H 1/0244](#))}
 - 1/028 . . . {by embossing}
- 2001/0284 . . . {by moulding}
- 2001/0288 . . . {by electroforming}
- 2001/0292 . . . {by masking}
- 2001/0296 . . . {Formation of the master hologram}
 - 1/04 . . Processes or apparatus for producing holograms ([G03H 1/26](#) takes precedence)
 - 1/0402 . . {Recording geometries or arrangements ([G03H 1/0443](#), [G03H 1/0476](#), [G03H 1/16](#) take precedence)}
 - 1/0404 . . . {In-line recording arrangement}
 - 1/0406 . . . {Image plane or focused image holograms, i.e. an image of the object or hologram is formed on, in or across the recording plane}
 - 1/0408 . . . {Total internal reflection [TIR] holograms, e.g. edge lit or substrate mode holograms}
 - 1/041 . . . {Optical element in the object space affecting the object beam, not otherwise provided for}
- 2001/0413 . . . {for recording transmission holograms}
- 2001/0415 . . . {for recording reflection holograms}
- 2001/0417 . . . {for recording single beam Lippmann hologram wherein the object is illuminated by reference beam passing through the recording material}
- 2001/0419 . . . {for recording combined transmission and reflection holograms}
- 2001/0421 . . . {Parallax aspect}
- 2001/0423 . . . {Restricted parallax, e.g. horizontal parallax only holograms [HPO]}
- 2001/0426 . . . {Extended parallax, e.g. panoramic or 360deg. holograms}
- 2001/0428 . . . {Image holography, i.e. an image of the object or hologram is recorded ([G03H 1/0406](#) takes precedence; [holographic microscope G03H 2001/005](#))}
- 2001/043 . . . {Non planar recording surface, e.g. curved surface}
- 2001/0432 . . . {Constrained record wherein, during exposure, the recording means undergoes constraints substantially differing from those expected at reconstruction}
- 2001/0434 . . . {[In situ](#) recording when the hologram is recorded within the device used for reconstruction}
- 2001/0436 . . . {Holographic camera}
- 2001/0439 . . . {for recording Holographic Optical Element [HOE]}
- 2001/0441 . . . {Formation of interference pattern, not otherwise provided for}
 - 1/0443 . . {Digital holography, i.e. recording holograms with digital recording means ([hologram computation G03H 1/0866](#))}
- 2001/0445 . . . {Off-axis recording arrangement ([G03H 2001/0456](#) takes precedence)}
- 2001/0447 . . . {In-line recording arrangement}
- 2001/045 . . . {Fourier or lensless Fourier arrangement}
- 2001/0452 . . . {arranged to record an image of the object}
- 2001/0454 . . . {Arrangement for recovering hologram complex amplitude}
- 2001/0456 . . . {Spatial heterodyne, i.e. filtering a Fourier transform of the off-axis record}
- 2001/0458 . . . {Temporal or spatial phase shifting, e.g. parallel phase shifting method}
- 2001/046 . . . {Synthetic aperture}
- 2001/0463 . . . {Frequency heterodyne, i.e. one beam is frequency shifted}
 - 1/0465 . . {Particular recording light; Beam shape or geometry ([G03H 1/06](#) takes precedence)}
- 2001/0467 . . . {Gated recording using pulsed or low coherence light source, e.g. light in flight, first arriving light}
- 2001/0469 . . . {Object light being reflected by the object}
- 2001/0471 . . . {Object light being transmitted through the object, e.g. illumination through living cells}
- 2001/0473 . . . {Particular illumination angle between object or reference beams and hologram}
 - 1/0476 . . {Holographic printer ([G03H 1/268](#) takes precedence)}
- 2001/0478 . . . {Serial printer, i.e. point oriented processing}
- 2001/048 . . . {Parallel printer, i.e. a fringe pattern is reproduced}
- 2001/0482 . . . {Interference based printer}
- 2001/0484 . . . {Arranged to produce three-dimensional fringe pattern}
 - 1/0486 . . {Improving or monitoring the quality of the record, e.g. by compensating distortions, aberrations}
- 2001/0489 . . . {by using phase stabilized beam}
- 2001/0491 . . . {by monitoring the hologram formation, e.g. via a feed-back loop}

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| 1/0493 | . . {Special holograms not otherwise provided for, e.g. conoscopic, referenceless holography} | 1/20 | . . Copying holograms by holographic {, i.e. optical} means |
| 2001/0495 | . . . {Polarisation preserving holography where amplitude, phase and polarisation state of the original objet wavefront are recorded} | 1/202 | . . . {Contact copy when the reconstruction beam for the master H1 also serves as reference beam for the copy H2} |
| 2001/0497 | . . . {Dot matrix holograms} | 2001/205 | . . . {Subdivided copy, e.g. scanning transfer} |
| 1/06 | . . using incoherent light | 2001/207 | . . . {with modification of the nature of the hologram, e.g. changing from volume to surface relief or from reflection to transmission} |
| 1/08 | . . Synthesising holograms, {i.e. holograms synthesized from objects or objects from holograms}(using electric digital computers G06F ; G06T) | 1/22 | . Processes or apparatus for obtaining an optical image from holograms (G03H 1/26 - G03H 1/34 take precedence) |
| 1/0808 | . . . {Methods of numerical synthesis, e.g. coherent ray tracing [CRT], diffraction specific} | 1/2202 | . . {Reconstruction geometries or arrangements} |
| 2001/0816 | {Iterative algorithms} | 1/2205 | . . . {using downstream optical component} |
| 2001/0825 | {Numerical processing in hologram space, e.g. combination of the CGH [computer generated hologram] with a numerical optical element} | 2001/2207 | {Spatial filter, e.g. for suppressing higher diffraction orders} |
| 2001/0833 | {Look up table} | 2001/221 | {Element having optical power, e.g. field lens} |
| 1/0841 | . . . {Encoding method mapping the synthesized field into a restricted set of values representative of the modulator parameters, e.g. detour phase coding} | 2001/2213 | {Diffusing screen revealing the real holobject, e.g. container filed with gel to reveal the 3D holobject} |
| 2001/085 | {Kinoform, i.e. phase only encoding wherein the computed field is processed into a distribution of phase differences} | 2001/2215 | {Plane screen} |
| 2001/0858 | {Cell encoding wherein each computed values is represented by at least two pixels of the modulator, e.g. detour phase coding} | 2001/2218 | {being perpendicular to optical axis} |
| 1/0866 | . . . {Digital holographic imaging, i.e. synthesizing holobjects from holograms} | 2001/2221 | {Screen having complex surface, e.g. a structured object} |
| 2001/0875 | {Solving phase ambiguity, e.g. phase unwrapping} | 2001/2223 | . . . {Particular relationship between light source, hologram and observer} |
| 2001/0883 | {Reconstruction aspect, e.g. numerical focusing} | 2001/2226 | {Edge lit holograms} |
| 1/0891 | . . . {Processes or apparatus adapted to convert digital holographic data into a hologram (G03H 1/2294 takes precedence)} | 2001/2228 | {adapted for reflection and transmission reconstruction} |
| 1/10 | . . using modulated reference beam | 2001/2231 | {Reflection reconstruction} |
| 1/12 | . . . Spatial modulation, e.g. ghost imaging | 2001/2234 | {Transmission reconstruction} |
| 1/14 | . . . Temporal modulation, e.g. extending depth of field or phase compensation for object motion | 2001/2236 | {Details of the viewing window} |
| 1/16 | . . using Fourier transform ({ G03H 1/10 }, G03H 1/12 , G03H 1/14 take precedence; analogue computers G06G , e.g. G06G 7/19) | 2001/2239 | {Enlarging the viewing window} |
| 1/18 | . . Particular processing of hologram record carriers, e.g. for obtaining blazed holograms {(photographic processing in general G03C , G03D)} | 2001/2242 | {Multiple viewing windows} |
| 1/181 | . . . {Pre-exposure processing, e.g. hypersensitisation} | 2001/2244 | {Means for detecting or recording the holobject} |
| 1/182 | . . . {Post-exposure processing, e.g. latensification} | 2001/2247 | {for testing the hologram or holobject} |
| 2001/183 | {Erasing the holographic information} | 1/2249 | . . {Holobject properties} |
| 2001/184 | {Partially erasing} | 2001/2252 | . . . {Location of the holobject} |
| 2001/185 | . . . {Applying a curing step} | 2001/2255 | {Holobject out of Fourier or hologram planes} |
| 2001/186 | . . . {Swelling or shrinking the holographic record or compensation thereof, e.g. for controlling the reconstructed wavelength (G03H 2001/0033 , G03H 2250/44 take precedence)} | 2001/2257 | {Straddling the hologram} |
| 2001/187 | . . . {Trimming process, i.e. macroscopically patterning the hologram} | 2001/226 | {Virtual or real} |
| 2001/188 | {Demetallisation, i.e. removing the enhancing metallic layer} | 2001/2263 | {Multicoloured holobject} |
| | | 2001/2265 | {Achromatic holobject} |
| | | 2001/2268 | {Rainbow hologram} |
| | | 2001/2271 | {RGB holobject} |
| | | 2001/2273 | {Pseudo-dynamic holobject, e.g. due to angle multiplexing and viewer motion} |
| | | 2001/2276 | . . . {Polarisation dependent holobject (G03H 2001/0495 takes precedence)} |
| | | 2001/2278 | . . . {Orthoscopic or pseudoscopic} |
| | | 2001/2281 | . . . {Particular depth of field} |
| | | 2001/2284 | . . . {Superimposing the holobject with other visual information} |
| | | 1/2286 | . . {Particular reconstruction light (G03H 1/24 takes precedence); Beam properties} |
| | | 2001/2289 | . . . {when reconstruction wavelength differs form recording wavelength} |
| | | 2001/2292 | . . . {Using scanning means} |

- 1/2294 . . . {Addressing the hologram to an active spatial light modulator}
- 2001/2297 . . . {using frame sequential, e.g. for reducing speckle noise}
- 1/24 . . . using white light {, e.g. rainbow holograms}
- 1/26 . . . Processes or apparatus specially adapted to produce multiple {sub-} holograms or to obtain images from them, e.g. multicolour technique
- 2001/2605 . . . {Arrangement of the sub-holograms, e.g. partial overlapping}
- 2001/261 {in optical contact}
- 2001/2615 {in physical contact, i.e. layered holograms}
- 2001/262 {not in optical contact ([G03H 1/30](#) takes precedence)}
- 2001/2625 . . . {Nature of the sub-holograms}
- 2001/263 {Made of different recording materials}
- 2001/2635 {Mixed volume and surface relief holograms}
- 2001/264 {One hologram being a HOE}
- 1/2645 . . . {Multiplexing processes, e.g. aperture, shift, or wavefront multiplexing}
- 1/265 {Angle multiplexing; Multichannel holograms ([G03H 1/268](#) takes precedence)}
- 2001/2655 {Time multiplexing, i.e. consecutive records wherein the period between records is pertinent *per se*}
- 2001/266 {Wavelength multiplexing}
- 2001/2665 {Coherence multiplexing wherein different holobjects are perceived under coherent or incoherent illumination}
- 2001/267 {Polarisation multiplexing}
- 2001/2675 {Phase code multiplexing, wherein the sub-holograms are multiplexed according to spatial modulation of the reference beam}
- 1/268 . . . {Holographic stereogram}
- 2001/2685 {One step recording process}
- 2001/269 {Two and more than two steps recording process}
- 2001/2695 {Dedicated printer}
- 1/28 . . . superimposed holograms only
- 1/30 . . . discrete holograms only
- 2001/303 {Interleaved sub-holograms, e.g. three RGB sub-holograms having interleaved pixels for reconstructing coloured holobject}
- 2001/306 {Tiled identical sub-holograms}
- 1/32 . . . Systems for obtaining speckle elimination
- 1/34 . . . Systems for reducing the space-spatial bandwidth product
- 3/00** **Holographic processes or apparatus using ultrasonic, sonic or infrasonic waves for obtaining holograms; Processes or apparatus for obtaining an optical image from them ([G03H 1/22](#) takes precedence; {acoustic non-destructive testing using holographic methods [G01N 29/0663](#); seismology using acoustic vibrations [G01V 1/00](#); non-holographic methods for visualizing acoustic waves [G10K 15/00](#))}**

5/00

Holographic processes or apparatus using particles or using waves other than those covered by groups [G03H 1/00](#) or [G03H 3/00](#) for obtaining holograms; Processes or apparatus for obtaining an optical image from them ([G03H 1/22](#) takes precedence; construction of electron microscopes [H01J 37/26](#); {investigating or analysing materials by the use of microwaves [G01N 22/00](#), by the use of particles wave or X-rays [G01N 23/00](#), [G21K 7/00](#))}

2210/00**Object characteristics**

- 2210/10 . . . Modulation characteristics, e.g. amplitude, phase, polarisation
- 2210/11 . . . Amplitude modulating object
- 2210/12 . . . Phase modulating object, e.g. living cell
- 2210/13 . . . Coloured object
- 2210/20 . . . 2D object
- 2210/22 . . . 2D SLM object wherein the object beam is formed of the light modulated by the SLM
- 2210/30 . . . 3D object
- 2210/32 . . . 3D+2D, i.e. composition of 3D and 2D sub-objects, e.g. scene in front of planar background
- 2210/33 . . . 3D/2D, i.e. the object is formed of stratified 2D planes, e.g. tomographic data
- 2210/36 . . . Occluded features resolved due to parallax selectivity
- 2210/40 . . . Synthetic representation, i.e. digital or optical object decomposition
- 2210/42 . . . from real object, e.g. using 3D scanner
- 2210/44 . . . Digital representation
- 2210/441 Numerical processing applied to the object data other than numerical propagation
- 2210/45 . . . Representation of the decomposed object
- 2210/452 into points
- 2210/454 into planes
- 2210/46 . . . for subsequent optical processing ([G03H 1/268](#) takes precedence)
- 2210/50 . . . Nature of the object
- 2210/52 . . . Alphanumeric
- 2210/53 . . . Coded object not directly interpretable, e.g. encrypted object, barcode
- 2210/54 . . . For individualisation of product
- 2210/55 . . . Having particular size, e.g. irresolvable by the eye
- 2210/56 . . . Multiple objects, e.g. each in different environment
- 2210/562 Holographic object, i.e. a combination of an object and holobject ([G03H 1/20](#) takes precedence)
- 2210/62 . . . Moving object
- 2210/63 . . . Environment affecting the recording, e.g. underwater ([G03H 2001/0432](#) takes precedence)
- 2222/00** **Light sources or light beam properties**
- 2222/10 . . . Spectral composition
- 2222/12 . . . Single or narrow bandwidth source, e.g. laser, light emitting diode [LED]
- 2222/13 . . . Multi-wavelengths wave with discontinuous wavelength ranges ([G03H 2222/18](#) takes precedence)
- 2222/14 . . . Broadband source, e.g. sun light
- 2222/15 . . . Ultra Violet [UV]
- 2222/16 . . . Infra Red [IR]
- 2222/17 . . . White light ([G03H 1/24](#) takes precedence)
- 2222/18 RGB trichrome light

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| 2222/20 | • Coherence of the light source | 2225/20 | • Nature, e.g. e-beam addressed |
| 2222/22 | • • Spatial coherence | 2225/21 | • • Acousto-optic SLM [AO-SLM] |
| 2222/23 | • • Temporal coherence | 2225/22 | • • Electrically addressed SLM [EA-SLM] |
| 2222/24 | • • Low coherence light normally not allowing valuable record or reconstruction (G03H 1/06 takes precedence) | 2225/23 | • • Grating based SLM |
| 2222/31 | • Polarised light | 2225/24 | • • Having movable pixels, e.g. microelectromechanical systems [MEMS] |
| 2222/32 | • Unpolarised light | 2225/25 | • • Optically addressed SLM [OA-SLM] |
| 2222/33 | • Pulsed light beam | 2225/30 | • Modulation |
| 2222/34 | • Multiple light sources | 2225/31 | • • Amplitude only |
| 2222/35 | • Transverse intensity distribution of the light beam | 2225/32 | • • Phase only |
| 2222/36 | • Scanning light beam | 2225/33 | • • Complex modulation |
| 2222/40 | • Particular irradiation beam not otherwise provided for | 2225/34 | • • • Amplitude and phase coupled modulation |
| 2222/42 | • • Reference beam at recording stage | 2225/35 | • • Colour modulation |
| 2222/43 | • • Object beam at recording stage | 2225/36 | • • Polarisation |
| 2222/44 | • • Beam irradiating the object at recording stage | 2225/52 | • Reflective modulator |
| 2222/45 | • • Interference beam at recording stage, i.e. following combination of object and reference beams | 2225/55 | • Having optical element registered to each pixel |
| 2222/46 | • • Reconstruction beam at reconstruction stage | 2225/60 | • Multiple SLMs |
| 2222/47 | • • Evanescent wave | 2225/61 | • • for multicolour processing |
| 2222/50 | • Geometrical property of the irradiating beam | 2226/00 | Electro-optic or electronic components relating to digital holography |
| 2222/52 | • • Divergent beam | 2226/02 | • Computing or processing means, e.g. digital signal processor [DSP] |
| 2222/53 | • • Collimated beam | 2226/04 | • Transmission or communication means, e.g. internet protocol |
| 2222/54 | • • Convergent beam | 2226/05 | • Means for tracking the observer |
| 2222/55 | • • Astigmatic beam having different focal planes | 2226/11 | • Electro-optic recording means, e.g. CCD, pyroelectric sensors |
| 2222/56 | • • Conjugated beam | 2226/13 | • • Multiple recording means |
| 2223/00 | Optical components | 2227/00 | Mechanical components or mechanical aspects not otherwise provided for |
| 2223/12 | • Amplitude mask, e.g. diaphragm, Louver filter | 2227/02 | • Handheld portable device, e.g. holographic camera, mobile holographic display |
| 2223/13 | • Phase mask | 2227/03 | • Means for moving one component (G03H 1/0476, G03H 2001/2695 take precedence) |
| 2223/14 | • Diffuser, e.g. lens array, random phase mask | 2227/04 | • Production line for mass production |
| 2223/15 | • Colour filter, e.g. interferential colour filter | 2227/05 | • Support holding the holographic record |
| 2223/16 | • Optical waveguide, e.g. optical fibre, rod | 2227/06 | • • Support including light source |
| 2223/17 | • Element having optical power | 2230/00 | Form or shape of the hologram when not registered to the substrate |
| 2223/18 | • Prism | 2230/10 | • Microhologram not registered to the substrate |
| 2223/19 | • Microoptic array, e.g. lens array | 2240/00 | Hologram nature or properties |
| 2223/20 | • Birefringent optical element, e.g. wave plate | 2240/10 | • Physical parameter modulated by the hologram (G03H 2001/0224 takes precedence) |
| 2223/21 | • Anamorphic optical element, e.g. cylindrical | 2240/11 | • • Phase only modulation (G03H 1/0244 takes precedence) |
| 2223/22 | • Polariser | 2240/12 | • • Amplitude only modulation |
| 2223/23 | • Diffractive element | 2240/13 | • • Amplitude and phase complex modulation |
| 2223/24 | • Reflector; Mirror | 2240/15 | • • Polarisation modulation |
| 2223/25 | • Index matching material | 2240/20 | • Details of physical variations exhibited in the hologram |
| 2223/26 | • Means providing optical delay, e.g. for path length matching | 2240/21 | • • Optical density variations |
| 2223/50 | • Particular location or purpose of optical element | 2240/22 | • • • Chromatic variations, e.g. photochromic or electrochromic |
| 2223/52 | • • Filtering the object information | 2240/23 | • • Optical length variations, e.g. bleached silver halide (G03H 1/0244 takes precedence) |
| 2223/53 | • • Filtering the hologram information, i.e. the fringe pattern | 2240/24 | • • • Index variations only |
| 2223/54 | • • Filtering the holobject information | 2240/25 | • • Magnetic variations |
| 2223/55 | • • Arranged at a Fourier plane | 2240/26 | • • Structural variations, e.g. structure variations due to photoanchoring or conformation variations due to photo-isomerisation |
| 2224/00 | Writing means other than actinic light wave | 2240/40 | • • Dynamic of the variations |
| 2224/02 | • Mechanical means, e.g. diamond tool | | |
| 2224/04 | • Particle beam, e.g. e-beam | | |
| 2224/06 | • Thermal or photo-thermal means | | |
| 2225/00 | Active addressable light modulator | | |
| 2225/10 | • Shape or geometry | | |
| 2225/11 | • • 1D SLM | | |
| 2225/12 | • • 2D SLM | | |
| 2225/13 | • • 3D SLM | | |

- 2240/41 . . . Binary
- 2240/42 . . . Discrete level
- 2240/43 . . . Continuous
- 2240/50 . Parameters or numerical values associated with holography, e.g. peel strength
- 2240/51 . . Intensity, power or luminance ([G03H 2240/52 takes precedence](#))
- 2240/52 . . Exposure parameters, e.g. time, intensity
- 2240/53 . . Diffraction efficiency [DE]
- 2240/54 . . Refractive index
- 2240/55 . . Thickness
- 2240/56 . . Resolution
- 2240/61 . . SLM related parameters, e.g. pixel size
- 2240/62 . . Sampling aspect applied to sensor or display
- 2250/00 Laminate comprising a hologram layer**
- 2250/10 . arranged to be transferred onto a carrier body
- 2250/12 . Special arrangement of layers
- 2250/14 . Forming layer onto which a surface relief hologram is formed ([G03H 2270/52 takes precedence](#))
- 2250/32 . Antireflective layer
- 2250/33 . Absorbing layer
- 2250/34 . Colour layer
- 2250/35 . Adhesive layer
- 2250/36 . Conform enhancement layer
- 2250/37 . Enclosing the photosensitive material
- 2250/38 . Liquid crystal
- 2250/39 . Protective layer
- 2250/40 . Printed information overlapped with the hologram
- 2250/41 . Polarisation active layer
- 2250/42 . Reflective layer ([G03H 2250/36 takes precedence](#))
- 2250/43 . One layer having dispersed particles ([G03H 2260/33 takes precedence](#))
- 2250/44 . Colour tuning layer
- 2260/00 Recording materials or recording processes**
- 2260/10 . Dichromated gelatine or equivalents
- 2260/12 . Photopolymer
- 2260/14 . Photoresist
- 2260/16 . Silver halide emulsion
- 2260/30 . Details of photosensitive recording material not otherwise provided for
- 2260/31 . . Ageing or resistance of the material ([G03H 2250/39 takes precedence](#))
- 2260/32 . . Combining different recording materials ([G03H 2001/2615 takes precedence](#))
- 2260/33 . . Having dispersed compound
- 2260/34 . . Non uniform thickness
- 2260/35 . . Rewritable material allowing several record and erase cycles
- 2260/36 . . . Dynamic material where the lifetime of the recorded pattern is quasi instantaneous, the holobject is simultaneously reconstructed
- 2260/50 . Reactivity or recording processes
- 2260/51 . . Photoanisotropic reactivity wherein polarized light induces material birefringence, e.g. azo-dye doped polymer
- 2260/52 . . Photochromic reactivity wherein light induces a reversible transformation between two states having different absorption spectra
- 2260/53 . . Photoconductor thermoplastic reactivity wherein light is transformed into an electrostatic then into a thickness distribution
- 2260/54 . . Photorefractive reactivity wherein light induces photo-generation, redistribution and trapping of charges then a modification of refractive index, e.g. photorefractive polymer
- 2260/61 . . Producing material deformation
- 2260/62 . . Direct etching
- 2260/63 . . Indirect etching, e.g. lithography
- 2270/00 Substrate bearing the hologram**
- 2270/10 . Composition
- 2270/11 . . Crystal or glass ([G03H 2270/55 takes precedence](#))
- 2270/12 . . Fibrous, e.g. paper, textile
- 2270/13 . . Metallic
- 2270/14 . . Plastic
- 2270/20 . Shape
- 2270/21 . . Curved bearing surface
- 2270/22 . . Disc shaped
- 2270/23 . . Ribbon shaped, e.g. holographic foil
- 2270/24 . . Having particular size, e.g. microscopic
- 2270/30 . Nature
- 2270/31 . . Flexible
- 2270/32 . . Transparent
- 2270/52 . Integrated surface relief hologram without forming layer
- 2270/53 . Recording material dispersed into porous substrate
- 2270/54 . Recording material filed in recessed substrate
- 2270/55 . being an optical element, e.g. spectacles