

G06E

OPTICAL COMPUTING DEVICES (digital storage using optical elements [G11C 13/04](#))

Definition statement

This place covers:

All devices in which at least one computing function is performed by optical means. Optical computer is a device that uses the light beams, rather than electric current, to perform digital or analogue computations.

Relationships with other classification places

If other aspects, for example mechanical, fluid pressure or electrical computing, are of interest, classification is also made in the relevant subclass for such aspects, e.g. [G06C](#), [G06D](#).

References

Limiting references

This place does not cover:

| | |
|--|----------------------------|
| Digital storage using optical elements | G11C 13/04 |
|--|----------------------------|

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | |
|---|---|
| Light guides | G02B 6/00 |
| Optical logic elements | G02F 3/00 |
| Holographic processes or apparatus | G03H |
| Computer systems based on biological models using optical means | G06N 3/067 |
| Recording or reproducing by optical means | G11B 7/00 |
| Logic circuits using opto-electronic devices | H03K 19/14 |
| Transmission systems using electromagnetic waves of optical range | H04B 10/00 |
| Semiconductor devices sensitive to infra-red, light, UV radiation and adapted for the conversion of the such energy into electrical energy | H10F 10/00 , H10F 19/00 |
| Devices consisting of a plurality of solid-state components, including light sensitive semiconductor components, formed in or on a common substrate | H10F 39/00 |
| Semiconductor devices adapted for light emission | H10H |

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- "photonic computer" and "optic computer"

G06E 1/00

Devices for processing exclusively digital data

Definition statement

This place covers:

Optical computers working exclusively on digital data.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | |
|--|----------------------------|
| Optical logic elements | G02F 3/00 |
| Electric digital data processing | G06F |
| Quantum computing, i.e. information processing based on quantum-mechanical phenomena | G06N 10/00 |

Special rules of classification

Documents should be classified in the subgroups of [G06E 1/00](#) only if they deal with purely digital optical computing.

G06E 3/00

Devices not provided for in group [G06E 1/00](#), e.g. for processing analogue or hybrid data

Definition statement

This place covers:

Optical computers operating not exclusively on digital data, but on analogue data or a combination of digital and analogue data (hybrid).

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

| | |
|--|----------------------------|
| Optical logic elements | G02F 3/00 |
| Electric digital data processing | G06F |
| Devices in which the computing operation is performed by varying electric or magnetic quantities | G06G 7/00 |
| Hybrid computing arrangements | G06J |
| Quantum computing, i.e. information processing based on quantum-mechanical phenomena | G06N 10/00 |

Special rules of classification

Documents should be classified in the subgroups of [G06E 3/00](#) only if they deal with purely optical computing on a combination of digital and analogue data or on analogue data only.

G06E 3/001

{Analogue devices in which mathematical operations are carried out with the aid of optical or electro-optical elements}

References***Informative references***

Attention is drawn to the following places, which may be of interest for search:

| | |
|--|----------------------------|
| Optical elements, systems or apparatus | G02B |
| Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating or modulating; Non-linear optics | G02F 1/00 |
| Methods or arrangements for graph-reading or for converting the pattern of mechanical parameters, e.g. force or presence, into electrical signal | G06K 11/00 |