SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F21 LIGHTING

Note(s)

Attention is drawn to Note III of Section H, and in particular that subclass H05B covers electrical aspects of the same technical subjects that are covered by class F21.

F21H INCANDESCENT MANTLES; OTHER INCANDESCENT BODIES HEATED BY COMBUSTION (arrangements thereof F21V 36/00; burners F23D)

1/00 Incandescent mantles; Selection of imbibition liquids therefor [1, 2006.01]

1/02 • characterised by the material thereof **[1, 2006.01]**

3/00 Manufacturing incandescent mantles; Treatment prior to use, e.g. burning-off; Machines for manufacturing [1, 2006.01]

5/00 Solid incandescent bodies (incandescent mantles F21H 1/00) **[1, 2006.01]**

7/00 Other incandescent bodies [2009.01]

F21K LIGHT SOURCES NOT OTHERWISE PROVIDED FOR

Note(s) [2016.01]

In this subclass, it is desirable to add the indexing codes of subclasses F21W and F21Y.

2/00 Light sources using luminescence (luminescent materials C09K 11/00; selection of luminescent materials for light screens F21V 9/16; using excitation by radioactivity G21H 3/02, H01J 65/06, H01J 65/08; transforming the wavelength of the light of gas- or vapour-discharge lamps by luminescence H01J 61/42; electroluminescent light sources H05B 33/00) **[1, 2, 7, 2006.01]**

2/04 • using triboluminescence; using thermoluminescence **[1, 2006.01]**

2/06 • using chemiluminescence **[3, 2006.01]**

2/08 • • activated by an electric field, i.e. electrochemiluminescence **[3, 2006.01]**

5/00 Light sources using charges of combustible material, e.g. illuminating flash devices (explosive or thermic compositions C06B; fireworks F42B 4/00; photographic flash units G03B 15/03) **[1, 3, 5, 2006.01]**

5/04 • Plural charges, e.g. associated for sequential ignition (F21K 5/06, F21K 5/12 take precedence) **[5, 2006.01]**

5/06 • Charge containment **[5, 2006.01]**

5/08 • • Charge held in non-disrupting container, e.g. photo-flash bulb **[5, 2006.01]**

5/10 • • • bearing a coating **[5, 2006.01]**

5/12 • Charge ignition **[5, 2006.01]**

5/14 • • percussive **[5, 2006.01]**

5/16 • • electrical (circuit arrangements H05B 43/02) **[5, 2006.01]**

5/18 • • • Electrically-ignited primers **[5, 2006.01]**

5/20 • Charge feeding means **[5, 2006.01]**

5/22 • Protective light shields **[5, 2006.01]**

9/00 Light sources using semiconductor devices as light-generating elements, e.g. using light-emitting diodes [LED] or lasers [2016.01]

Note(s) [2016.01]

1. *In this group, the following expressions are used with the meaning indicated:*
   - *"light source" means a light-generating component intended for installation in a fitting or holder incorporated in a lighting device;*
   - *"retrofit light source" means a light source comprising substantially the same attachment means as those of incandescent lamps or fluorescent lamps. "Retrofit light sources" are specially adapted for replacing or substituting such lamps.*
2. *Semiconductor devices per se, or assemblies thereof, specially adapted for light emission, e.g. for use in light sources (in the sense of Note (1)) are covered by subclass H01L, e.g. H01L 33/00 or H01L 51/50, or by subclass H01S.*
3. *Lighting devices or systems in which light sources are used are covered by subclasses F21L or F21S.*
4. *When classifying in this group, classification is also made in subclass F21V if detail aspects covered by that subclass are of interest.*

*9/20 • Light sources comprising attachment means **[2016.01]***

9/23 • • *Retrofit light sources for lighting devices with a single fitting for each light source, e.g. for substitution of incandescent lamps with bayonet or threaded fittings* ***[2016.01]***

9/232 • • • *specially adapted for generating an essentially omnidirectional light distribution, e.g. with a glass bulb* ***[2016.01]***

9/233 • • • *specially adapted for generating a spot light distribution, e.g. for substitution of reflector lamps* ***[2016.01]***

9/235 • • • *Details of bases or caps, i.e. the parts that connect the light source to a fitting; Arrangement of components within bases or caps (F21K 9/238 takes precedence)* ***[2016.01]***

9/237 • • • *Details of housings or cases, i.e. the parts between the light-generating element and the bases; Arrangement of components within housings or cases (F21K 9/238 takes precedence)* ***[2016.01]***

9/238 • • • *Arrangement or mounting of circuit elements integrated in the light source* ***[2016.01]***

9/27 • • *Retrofit light sources for lighting devices with two fittings for each light source, e.g. for substitution of fluorescent tubes* ***[2016.01]***

9/272 • • • *Details of end parts, i.e. the parts that connect the light source to a fitting; Arrangement of components within end parts (F21K 9/278 takes precedence)* ***[2016.01]***

9/275 • • • *Details of bases or housings, i.e. the parts between the light-generating element and the end caps; Arrangement of components within bases or housings (F21K 9/278 takes precedence)* ***[2016.01]***

9/278 • • • *Arrangement or mounting of circuit elements integrated in the light source* ***[2016.01]***

9/60 • *Optical arrangements integrated in the light source, e.g. for improving the colour rendering index or the light extraction* ***[2016.01]***

9/61 • • *using light guides* ***[2016.01]***

9/62 • • *using mixing chambers, e.g. housings with reflective walls* ***[2016.01]***

9/64 • • *using wavelength conversion means distinct or spaced from the light-generating element, e.g. a remote phosphor layer* ***[2016.01]***

9/65 • • *specially adapted for changing the characteristics or the distribution of the light, e.g. by adjustment of parts* ***[2016.01]***

9/66 • • *Details of globes or covers forming part of the light source* ***[2016.01]***

9/68 • • *Details of reflectors forming part of the light source* ***[2016.01]***

9/69 • • *Details of refractors forming part of the light source* ***[2016.01]***

9/90 • *Methods of manufacture* ***[2016.01]***

99/00 ***Subject matter not provided for in other groups of this subclass [2010.01, 2016.01]***

F21L **LIGHTING DEVICES OR SYSTEMS THEREOF, BEING PORTABLE OR SPECIALLY ADAPTED FOR TRANSPORTATION** (burners F23D; electric aspects or elements, see section H, e.g. electric light sources H01J, H01K, H05B) **[1, 7]**

Note(s) [7, 2009.01]

1. This subclass covers devices or systems designed or specially adapted to be carried, e.g. by hand, or otherwise transported from place to place, e.g. on wheeled supports, in order to provide illumination as and where required.
2. This subclass does not cover devices or systems intended for fixed installation, e.g. vehicle lighting, or for use essentially at a permanent location, which are covered by subclass F21S.
3. Non-electric lighting devices are classified in groups F21L 17/00-F21L 26/00 only if a special adaptation related to the use of a non-electric light source is of interest.
4. In this subclass, it is desirable to add the indexing codes of subclasses F21W and F21Y.

Subclass index

ELECTRIC DEVICES
Systems.....2/00
with self-contained batteries or cells.....4/00
with built-in generators.....13/00
without self-contained power source.....14/00
NON-ELECTRIC DEVICES
Torches, flares; lanterns.....17/00, 19/00
Pocket-lamps; miners' hand-lamps.....21/00, 23/00
Other portable lighting devices or systems thereof.....26/00
COMBINATIONS OF ELECTRIC AND NON-ELECTRIC DEVICES.....27/00

2/00 **Systems of electric lighting devices** (systems employing both electric and non-electric light sources or exchangeable light sources F21L 27/00) **[7, 2006.01]**

4/00 **Electric lighting devices with self-contained electric batteries or cells [7, 2006.01]**

4/02 • characterised by provision of two or more light sources **[7, 2006.01]**

4/04 • characterised by provision of a light source housing portion adjustably fixed to the remainder of the device **[7, 2006.01]**

4/06 • with light source coupled to the remainder of the device solely by cable **[7, 2006.01]**

4/08 • characterised by means for in situ recharging of the batteries or cells **[7, 2006.01]**

13/00 **Electric lighting devices with built-in electric generators** (with solar cells F21L 4/00) **[1, 7, 2006.01]**
13/02 • with fluid drive **[1, 2006.01]**
13/04 • • actuated by hand **[1, 2006.01]**
13/06 • with mechanical drive, e.g. spring **[1, 2006.01]**
13/08 • • by reciprocating pusher actuated by hand **[1, 2006.01]**

14/00 **Electric lighting devices without a self-contained power source, e.g. for mains connection [7, 2006.01]**
14/02 • capable of hand-held use, e.g. inspection lamps **[7, 2006.01]**
14/04 • carried on wheeled supports **[7, 2006.01]**

17/00 **Non-electric torches; Non-electric flares [1, 2006.01]**

19/00 **Lanterns, e.g. hurricane lamps or candle lamps** (candle holders F21V 35/00) **[1, 2006.01]**

21/00 **Non-electric pocket-lamps, e.g. lamps producing sparks [1, 2006.01]**

23/00 **Non-electric hand-lamps for miners [1, 2006.01]**

26/00 **Non-electric portable lighting devices, or systems thereof, not provided for in groups F21L 17/00-F21L 23/00 [2006.01]**

27/00 **Lighting devices or systems, employing combinations of electric and non-electric light sources; Replacing or exchanging electric light sources with non-electric light sources or vice versa in lighting devices or systems [1, 2006.01]**

F21S **NON-PORTABLE LIGHTING DEVICES OR SYSTEMS THEREOF** (burners F23D; electric aspects or elements, see section H, e.g. electric light sources H01J, H01K, H05B) **[1, 7]**

Note(s) [7, 2009.01]

1. This subclass covers devices or systems intended for fixed installation, e.g. vehicle lighting, or for use at a permanent location, e.g. free-standing floor- or table-lamps.
2. This subclass does not cover devices or systems specially adapted for transportation, which are covered by subclass F21L.
3. Non-electric lighting devices or systems are classified in groups F21S 11/00-F21S 15/00 only if a special adaptation related to the use of a non-electric light source is of interest.
4. In this subclass, it is desirable to add the indexing codes of subclasses F21W and F21Y.

Subclass index

ELECTRIC DEVICES
Systems....2/00
String or strip of light sources....4/00
Free-standing....6/00
Fixed installation....8/00
Built-in power supply....9/00
Producing varying lighting effects....10/00
NON-ELECTRIC DEVICES
Using daylight....11/00
Light source: Point-like or of unspecified shape....13/00
Other devices....15/00
COMBINATIONS OF ELECTRIC AND NON-ELECTRIC DEVICES....19/00

2/00 ***Systems of lighting devices, not provided for in main groups F21S 4/00-F21S 10/00 or F21S 19/00, e.g. of modular construction [7, 2006.01, 2016.01]***

4/00 ***Lighting devices or systems using a string or strip of light sources [7, 2006.01, 2016.01]***
4/10 • *with light sources attached to loose electric cables, e.g. Christmas tree lights* ***[2016.01]***
4/15 • • *the cables forming a grid, net or web structure* ***[2016.01]***
4/20 • *with light sources held by or within elongate supports* ***[2016.01]***
4/22 • • *flexible or deformable, e.g. into a curved shape* ***[2016.01]***
4/24 • • • *of ribbon or tape form, e.g. LED tapes* ***[2016.01]***
4/26 • • • *of rope form, e.g. LED lighting ropes, or of tubular form* ***[2016.01]***
4/28 • • *rigid, e.g. LED bars* ***[2016.01]***

6/00 **Lighting devices intended to be free-standing** (F21S 9/00, F21S 10/00 take precedence) **[7, 2006.01]**

8/00 **Lighting devices intended for fixed installation** (F21S 9/00, F21S 10/00 take precedence; using a string or strip of light sources F21S 4/00) **[7, 2006.01]**
8/02 • of recess-mounted type, e.g. downlighters (F21S 8/10 takes precedence) **[7, 2006.01]**
8/04 • intended only for mounting on a ceiling or like overhead structure (F21S 8/02 takes precedence) **[7, 2006.01]**
8/06 • • by suspension **[7, 2006.01]**
8/08 • with a standard **[7, 2006.01]**
8/10 • specially adapted for vehicles **[7, 2006.01]**
8/12 • • providing a single shaped beam, e.g. asymmetric beam, e.g. for penetrating fog or for preventing glare **[7, 2006.01]**

9/00 **Lighting devices with a built-in power supply; Systems employing lighting devices with a built-in power supply [1, 2006.01]**

9/02 • the power supply being a battery or accumulator **[1, 2006.01]**
9/03 • • rechargeable by exposure to light **[7, 2006.01]**
9/04 • the power supply being a generator **[1, 2006.01]**

10/00 Lighting devices or systems producing a varying lighting effect [7, 2006.01]
10/02 • changing colours (F21S 10/04 takes precedence) **[7, 2006.01]**
10/04 • simulating flames **[7, 2006.01]**
10/06 • flashing, e.g. with rotating reflector or light source **[7, 2006.01]**

11/00 Non-electric lighting devices or systems using daylight [1, 2006.01]

13/00 Non-electric lighting devices or systems employing a point-like light source (candle holders F21V 35/00)**; Non-electric lighting devices or systems employing a light source of unspecified shape [1, 2006.01]**
13/02 • Devices intended to be fixed, e.g. ceiling lamp, wall lamp **[1, 2006.01]**
13/04 • • with a pendant **[1, 2006.01]**
13/06 • • • multi-branched, e.g. chandelier **[1, 2006.01]**
13/08 • • with suspension from a stretched wire **[1, 2006.01]**
13/10 • • with a standard, e.g. street lamp **[1, 2006.01]**
13/12 • Devices intended to be free-standing, e.g. table lamp, floor lamp **[1, 2006.01]**
13/14 • Lighting systems **[1, 2006.01]**

15/00 Non-electric lighting devices or systems employing light sources not covered by main groups F21S 11/00, F21S 13/00 or F21S 19/00 [1, 2006.01]

19/00 Lighting devices or systems employing combinations of electric and non-electric light sources; Replacing or exchanging electric light sources with non-electric light sources or vice versa [1, 2006.01]

F21V FUNCTIONAL FEATURES OR DETAILS OF LIGHTING DEVICES OR SYSTEMS THEREOF; STRUCTURAL COMBINATIONS OF LIGHTING DEVICES WITH OTHER ARTICLES, NOT OTHERWISE PROVIDED FOR [1, 7]

Note(s) [7, 2009.01]

1. Groups F21V 1/00-F21V 14/00 cover aspects related to light emission or distribution. Groups F21V 15/00-F21V 31/00 cover aspects not related to light emission or distribution.
2. Details of non-electric lighting devices or systems are classified in groups F21V 35/00-F21V 37/00 only if a special adaptation related to the use of a non-electric light source is of interest.
3. In this subclass, it is desirable to add the indexing codes of subclasses F21W and F21Y.

Subclass index

DETAILS OF PARTS INVOLVED IN LIGHT EMISSION OR DISTRIBUTION
Shades; globes; refractors; reflectors....1/00, 3/00, 5/00, 7/00
Light guides....8/00
Light filters....9/00
Other screens....11/00
Combinations of elements....13/00
Changing characteristics or distribution of the light....14/00
DETAILS OF PARTS NOT INVOLVED IN LIGHT EMISSION OR DISTRIBUTION
Fastening....17/00, 19/00
Arrangements for supporting or suspending....21/00
Arrangements of electric circuit elements....23/00
Cable stowing....27/00
Protection; safety; cooling; tightness....15/00, 25/00, 29/00, 31/00
Combinations with other articles....33/00
Candle holders....35/00
Arrangements of mantles or burners....36/00
Details of combustion lighting....37/00
SUBJECT MATTER NOT PROVIDED FOR IN OTHER GROUPS OF THIS SUBCLASS....99/00

1/00 Shades for light sources [1, 2006.01]
1/02 • Frames **[1, 2006.01]**
1/04 • • rigid (F21V 1/08 takes precedence) **[1, 2006.01]**
1/06 • • foldable or collapsible **[1, 2006.01]**
1/08 • • adjustable **[1, 2006.01]**
1/10 • Rotating shades **[1, 2006.01]**
1/12 • Composite shades **[1, 2006.01]**
1/14 • Covers for frames; Frameless shades **[1, 2006.01]**
1/16 • • characterised by the material **[1, 2006.01]**
1/18 • • • the material being paper **[1, 2006.01]**
1/20 • • • the material being glass **[1, 2006.01]**
1/22 • • • the material being plastics **[1, 2006.01]**
1/24 • • • the material being metal **[1, 2006.01]**
1/26 • Manufacturing shades **[1, 2006.01]**

3/00 Globes; Bowls; Cover glasses (with refracting properties F21V 5/00; with reflecting properties F21V 7/00; characterised by cooling arrangements F21V 29/506) **[1, 2006.01, 2015.01]**
3/02 • characterised by the shape **[1, 2006.01]**
3/04 • characterised by the material; characterised by surface treatments or coatings **[1, 2006.01]**

5/00 Refractors for light sources (characterised by cooling arrangements F21V 29/504) **[1, 2006.01, 2015.01]**

5/02 • of prismatic shape (F21V 5/04 takes precedence) **[1, 2006.01]**
5/04 • of lens shape **[1, 2006.01]**
5/06 • Hanging lustres for chandeliers **[1, 2006.01]**
5/08 • producing an asymmetric light distribution **[1, 7, 2006.01]**

7/00 Reflectors for light sources (characterised by cooling arrangements F21V 29/505) **[1, 2006.01]**
7/04 • Optical design **[1, 7, 2006.01]**
7/05 • • plane **[1, 7, 2006.01]**
7/06 • • with parabolic curvature **[1, 7, 2006.01]**
7/07 • • with hyperbolic curvature **[1, 7, 2006.01]**
7/08 • • with elliptical curvature **[1, 7, 2006.01]**
7/09 • • with a combination of different curvatures **[1, 7, 2006.01]**
7/10 • Construction **[1, 7, 2006.01]**
7/16 • • with provision for adjusting the curvature **[1, 7, 2006.01]**
7/18 • • with provision for folding or collapsing **[1, 7, 2006.01]**
7/22 • characterised by the material; characterised by surface treatments or coatings **[1, 2006.01]**

8/00 Use of light guides, e.g. fibre optic devices, in lighting devices or systems [4, 2006.01]

9/00 Light filters (coloured shades F21V 1/00; characterised by cooling arrangements F21V 29/502)**; Selection of luminescent materials for light screens [1, 2006.01, 2015.01]**
9/02 • for simulating daylight (F21V 9/04, F21V 9/06, F21V 9/16 take precedence) **[1, 2006.01]**
9/04 • for filtering out infra-red radiation (using liquid-filled chambers F21V 9/12) **[1, 2006.01]**
9/06 • for filtering out ultra-violet radiation (F21V 9/16 takes precedence) **[1, 2006.01]**
9/08 • for producing coloured light, e.g. monochromatic; for reducing intensity of light (F21V 9/16 takes precedence) **[1, 2006.01]**
9/10 • • with provision for variation of the colour or intensity (F21V 9/12 takes precedence) **[1, 2006.01]**
9/12 • • with liquid-filled chambers **[1, 2006.01]**
9/14 • for producing polarised light **[1, 2006.01]**
9/16 • Selection of luminescent materials for light screens **[1, 2006.01]**

11/00 Screens not covered by groups F21V 1/00, F21V 3/00, F21V 7/00 or F21V 9/00 (characterised by cooling arrangements F21V 29/502) **[1, 2006.01, 2015.01]**
11/02 • using parallel laminae or strips, e.g. of Venetian-blind type (F21V 11/06 takes precedence) **[1, 2006.01]**
11/04 • • adjustable **[1, 2006.01]**
11/06 • using crossed laminae or strips; using lattices or honeycombs **[1, 2006.01]**
11/08 • using diaphragms containing one or more apertures **[1, 2006.01]**
11/10 • • of iris type **[1, 2006.01]**
11/12 • • of slot type **[1, 2006.01]**
11/14 • • with many small apertures **[1, 2006.01]**
11/16 • using sheets without apertures, e.g. fixed **[1, 2006.01]**
11/18 • • movable, e.g. flaps, slides **[1, 2006.01]**

13/00 Producing particular characteristics or distribution of the light emitted by means of a combination of elements specified in two or more of main groups F21V 1/00-F21V 11/00 (changing the characteristics or distribution of the light emitted by adjustment of parts F21V 14/00) **[1, 7, 2006.01]**
13/02 • Combinations of only two kinds of elements **[1, 2006.01]**
13/04 • • the elements being reflectors and refractors **[1, 2006.01]**
13/06 • • • a reflector being rotatable **[1, 2006.01]**
13/08 • • the elements being reflectors and filters **[1, 2006.01]**
13/10 • • the elements being reflectors and screens **[1, 2006.01]**
13/12 • Combinations of only three kinds of elements **[1, 2006.01]**
13/14 • • the elements being reflectors, refractors, and filters **[1, 2006.01]**

14/00 Changing the characteristics or distribution of the light emitted by adjustment of parts (reflectors with provision for adjusting the curvature F21V 7/16; light filters with provision for variation of colour or intensity F21V 9/10; screens using adjustable parallel laminae or strips, e.g. of Venetian-blind type, F21V 11/04; screens using iris-type diaphragms F21V 11/10; screens using movable sheets without apertures, e.g. flaps or slides, F21V 11/18; adjustable mountings for lighting devices F21V 21/14) **[7, 2006.01]**
14/02 • by movement of light sources **[7, 2006.01]**
14/04 • by movement of reflectors **[7, 2006.01]**
14/06 • by movement of refractors **[7, 2006.01]**
14/08 • by movement of screens **[7, 2006.01]**

15/00 Protecting lighting devices from damage (protection from thermal damage F21V 29/00; gas-tight or water-tight arrangements F21V 31/00) **[1, 2006.01, 2015.01]**
15/01 • Housings, e.g. material or assembling of housing parts (F21V 15/02 takes precedence) **[7, 2006.01]**
15/015 • • Devices for covering joints between adjacent lighting devices; End coverings **[7, 2006.01]**
15/02 • Cages **[1, 2006.01]**
15/04 • Resilient mountings, e.g. shock-absorbers **[1, 2006.01]**

17/00 Fastening of component parts of lighting devices, e.g. shades, globes, refractors, reflectors, filters, screens, grids or protective cages (of light sources or light holders F21V 19/00) **[1, 2006.01]**
17/02 • with provision for adjustment (F21V 17/04-F21V 17/08 take precedence) **[1, 7, 2006.01]**
17/04 • onto or by the light source **[1, 2006.01]**
17/06 • onto or by the lamp holder **[1, 2006.01]**
17/08 • onto the supporting or suspending arrangements of the lighting device, e.g. power cords, standards **[7, 2006.01]**
17/10 • characterised by specific fastening means or way of fastening (F21V 17/02-F21V 17/08 take precedence) **[7, 2006.01]**
17/12 • • by screwing **[7, 2006.01]**
17/14 • • Bayonet-type fastening **[7, 2006.01]**
17/16 • • by deformation of parts of the lighting device; Snap action mounting **[7, 2006.01]**
17/18 • • Latch-type fastening, e.g. with rotary action **[7, 2006.01]**
17/20 • • by toggle-action levers **[7, 2006.01]**

19/00 **Fastening of light sources or lamp holders** (fastening electric light source solely by the coupling device H01R 33/00) **[1, 2006.01]**

19/02 • with provision for adjustment, e.g. for focusing **[1, 7, 2006.01]**

19/04 • with provision for changing light source, e.g. turret **[1, 2006.01]**

19/06 • Fastening incandescent mantles or other incandescent bodies to lamp parts; Suspension devices for incandescent mantles or other incandescent bodies (arrangements of mantles or other incandescent bodies on burners F21V 36/00) **[1, 7, 2006.01]**

21/00 **Supporting, suspending, or attaching arrangements for lighting devices** (F21V 17/00, F21V 19/00 take precedence)**; Hand grips [1, 7, 2006.01]**

21/002 • making direct electrical contact, e.g. by piercing (F21V 21/35 takes precedence) **[7, 2006.01]**

21/005 • for several lighting devices in an end-to-end arrangement, i.e. light tracks **[7, 2006.01]**

21/008 • Suspending from a cable or suspension line **[7, 2006.01]**

21/02 • Wall, ceiling, or floor bases; Fixing pendants or arms to the bases (F21V 21/08 takes precedence; bases for movable standing lamps F21V 21/06) **[1, 2006.01]**

21/03 • • Ceiling bases, e.g. ceiling roses (F21V 21/04 takes precedence) **[7, 2006.01]**

21/04 • • Recessed bases **[1, 2006.01]**

21/06 • Bases for movable standing lamps; Fixing standards to the bases (F21V 21/08 takes precedence) **[1, 2006.01]**

21/08 • Devices for easy attachment to a desired place **[1, 2006.01]**

21/084 • • Head fittings **[7, 2006.01]**

21/088 • • Clips; Clamps **[7, 2006.01]**

21/092 • • Suction devices **[7, 2006.01]**

21/096 • • Magnetic devices **[7, 2006.01]**

21/10 • Pendants, arms or standards; Fixing lighting devices to pendants, arms or standards (adjustable mounting F21V 21/14) **[1, 2006.01]**

21/104 • • Pendants **[7, 2006.01]**

21/108 • • Arms **[7, 2006.01]**

21/112 • • Fixing lighting devices to pendants (F21V 21/002 takes precedence) **[7, 2006.01]**

21/116 • • Fixing lighting devices to arms or standards (F21V 21/002 takes precedence) **[7, 2006.01]**

21/12 • • capable of being elongated or shortened by the insertion or removal of intermediate pieces **[1, 2006.01]**

21/13 • Spring-loaded poles fixed at both ends **[7, 2006.01]**

21/14 • Adjustable mountings **[1, 2006.01]**

21/15 • • specially adapted for power operation, e.g. by remote control **[7, 2006.01]**

21/16 • • using wires or cords **[1, 2006.01]**

21/18 • • • operated by springs **[1, 2006.01]**

21/20 • • • operated by weights **[1, 2006.01]**

21/22 • • telescopic **[1, 2006.01]**

21/24 • • Lazy-tongs **[1, 2006.01]**

21/26 • • Pivoted arms **[1, 2006.01]**

21/28 • • • adjustable in more than one plane **[1, 2006.01]**

21/29 • • • • employing universal joints **[1, 2006.01]**

21/30 • • Pivoted housings or frames **[1, 2006.01]**

21/32 • • Flexible tubes **[1, 2006.01]**

21/34 • Supporting elements displaceable along a guiding element **[1, 2006.01]**

21/35 • • with direct electrical contact between the supporting element and electric conductors running along the guiding element **[7, 2006.01]**

21/36 • Hoisting or lowering devices, e.g. for maintenance **[1, 2006.01]**

21/38 • • with a cable **[1, 2006.01]**

21/40 • Hand grips **[7, 2006.01]**

23/00 **Arrangement of electric circuit elements in or on lighting devices** (protecting lighting devices from thermal damage F21V 29/00) **[1, 2006.01, 2015.01]**

23/02 • the elements being transformers or impedances **[1, 2006.01]**

23/04 • the elements being switches (safety devices F21V 25/00) **[1, 2006.01]**

23/06 • the elements being coupling devices **[1, 2006.01]**

25/00 **Safety devices structurally associated with lighting devices** (gas-tight or water-tight arrangements F21V 31/00) **[1, 2006.01]**

25/02 • coming into action when lighting device is disturbed, dismounted, or broken **[1, 2006.01]**

25/04 • • breaking the electric circuit **[1, 2006.01]**

25/06 • • feeding a quenching fluid to the light source **[1, 2006.01]**

25/08 • • cutting the incandescent filament **[1, 2006.01]**

25/10 • coming into action when lighting device is over-loaded, e.g. thermal switch **[1, 2006.01]**

25/12 • Flameproof or explosion-proof arrangements **[1, 2006.01]**

27/00 **Cable-stowing arrangements structurally associated with lighting devices, e.g. reels [1, 2006.01]**

27/02 • Cable inlets **[7, 2006.01]**

29/00 **Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems** (lighting fixtures combined with outlets for air-treatment systems F24F 13/078) **[1, 7, 2006.01, 2015.01]**

29/10 • Arrangement of heat-generating components to reduce thermal damage, e.g. by distancing heat-generating components from other components to be protected **[2015.01]**

29/15 • Thermal insulation **[2015.01]**

29/50 • Cooling arrangements (air-treatment systems dissipating or using the heat of lighting fixtures F24F 3/056) **[2015.01]**

29/502 • • characterised by the adaptation for cooling of specific components **[2015.01]**

29/503 • • • of light sources (cooling arrangements structurally associated with gas-discharge or vapour-discharge lamps H01J 61/52; cooling arrangements structurally associated with electric incandescent lamps H01K 1/58; cooling arrangements structurally associated with light-emitting diodes H01L 33/64) **[2015.01]**

29/504 • • • of refractors **[2015.01]**

29/505 • • • of reflectors **[2015.01]**

29/506 • • • of globes, bowls or cover glasses **[2015.01]**

29/507 • • • of means for protecting lighting devices from damage, e.g. housings **[2015.01]**

29/508 • • • of electrical circuits **[2015.01]**

29/51 • • using condensation or evaporation of a fluid, e.g. heat pipes **[2015.01]**

29/52 • • • electrically powered, e.g. refrigeration systems **[2015.01]**

29/54 • • using thermoelectric means, e.g. Peltier elements **[2015.01]**
29/56 • • using liquid coolants (F21V 29/51 takes precedence) **[2015.01]**
29/57 • • • characterised by control arrangements **[2015.01]**
29/58 • • • characterised by the coolants **[2015.01]**
29/60 • • characterised by the use of a forced flow of gas, e.g. air **[2015.01]**
29/61 • • • characterised by control arrangements **[2015.01]**
29/63 • • • using electrically-powered vibrating means; using ionic wind **[2015.01]**
29/65 • • • the gas flowing in a closed circuit **[2015.01]**
29/67 • • • characterised by the arrangement of fans **[2015.01]**
29/70 • • characterised by passive heat-dissipating elements, e.g. heat-sinks **[2015.01]**
29/71 • • • using a combination of separate elements interconnected by heat-conducting means, e.g. with heat pipes or thermally conductive bars between separate heat-sink elements **[2015.01]**
29/73 • • • the elements being adjustable with respect to each other, e.g. hinged **[2015.01]**
29/74 • • • with fins or blades **[2015.01]**
29/75 • • • • with fins or blades having different shapes, thicknesses or spacing **[2015.01]**
29/76 • • • • with essentially identical parallel planar fins or blades, e.g. with comb-like cross-section **[2015.01]**
29/77 • • • • with essentially identical diverging planar fins or blades, e.g. with fan-like or star-like cross-section **[2015.01]**
29/78 • • • • with helically or spirally arranged fins or blades **[2015.01]**
29/80 • • • with pins or wires **[2015.01]**
29/81 • • • • with pins or wires having different shapes, lengths or spacing **[2015.01]**
29/83 • • • the elements having apertures, ducts or channels, e.g. heat radiation holes **[2015.01]**
29/85 • characterised by the material (liquid coolants F21V 29/56) **[2015.01]**
29/87 • • Organic material, e.g. filled polymer composites; Thermo-conductive additives or coatings therefor **[2015.01]**
29/89 • • Metals **[2015.01]**
29/90 • Heating arrangements **[2015.01]**

31/00 Gas-tight or water-tight arrangements [1, 2006.01]
31/03 • with provision for venting **[7, 2006.01]**
31/04 • Provision of filling media **[1, 2006.01]**

33/00 Structural combinations of lighting devices with other articles, not otherwise provided for [1, 7, 2006.01]

35/00 Candle holders [1, 2006.01]

36/00 Arrangements of mantles or other incandescent bodies on burners [1, 2006.01]
36/02 • in ceiling lamps **[1, 2006.01]**

37/00 Details of lighting devices employing combustion as light source, not otherwise provided for [1, 7, 2006.01]
37/02 • Special adaptation for protection against draughts **[7, 2006.01]**

99/00 Subject matter not provided for in other groups of this subclass [2006.01]

F21W INDEXING SCHEME ASSOCIATED WITH SUBCLASSES F21K, F21L, F21S and F21V, RELATING TO USES OR APPLICATIONS OF LIGHTING DEVICES OR SYSTEMS [7]

Note(s) [7]

This subclass constitutes an indexing scheme associated with subclasses F21K, F21L, F21S and F21V, relating to uses or applications of lighting devices or systems.

101/00 Use or application of lighting devices on or in vehicles [7, 2006.01]
101/02 • for land vehicles **[7, 2006.01]**
101/023 • • for cycles **[7, 2006.01]**
101/027 • • • for motorcycles **[7, 2006.01]**
101/04 • for water vehicles **[7, 2006.01]**
101/06 • for aircraft **[7, 2006.01]**
101/08 • Interior lights **[7, 2006.01]**
101/10 • Head-, spot- or fog-lights **[7, 2006.01]**
101/12 • Direction indicator lights **[7, 2006.01]**
101/14 • Rear or stop lights **[7, 2006.01]**

111/00 Use or application of lighting devices or systems for signalling, marking or indicating, not provided for in group F21W 101/00 [7, 2006.01]
111/02 • for roads, paths or the like **[7, 2006.01]**
111/023 • • for pedestrian walkways **[7, 2006.01]**
111/027 • • for indicating kerbs, steps or stairs **[7, 2006.01]**
111/04 • for waterways **[7, 2006.01]**
111/043 • • for lighthouses or lightships **[7, 2006.01]**
111/047 • • for light-buoys **[7, 2006.01]**
111/06 • for aircraft runways or the like **[7, 2006.01]**
111/08 • for handles or handrails **[7, 2006.01]**
111/10 • for personal use, e.g. hand-held **[7, 2006.01]**

121/00 Use or application of lighting devices or systems for decorative purposes [7, 2006.01]
121/02 • for fountains **[7, 2006.01]**
121/04 • for Christmas trees **[7, 2006.01]**
121/06 • for personal wear **[7, 2006.01]**

131/00 Uses or applications of lighting devices or systems not provided for in groups F21W 101/00-F21W 121/00 [7, 2006.01]
131/10 • Outdoor lighting **[7, 2006.01]**
131/101 • • of tunnels or the like, e.g. under bridges **[7, 2006.01]**
131/103 • • of streets or roads **[7, 2006.01]**
131/105 • • of arenas or the like **[7, 2006.01]**
131/107 • • of the exterior of buildings **[7, 2006.01]**
131/109 • • of gardens **[7, 2006.01]**

131/20 • Lighting for medical use **[7, 2006.01]**
131/202 • • for dentistry **[7, 2006.01]**
131/205 • • for operating theatres **[7, 2006.01]**
131/208 • • for hospital wards **[7, 2006.01]**
131/30 • Lighting for domestic or personal use **[7, 2006.01]**
131/301 • • for furniture **[7, 2006.01]**
131/302 • • for mirrors **[7, 2006.01]**
131/304 • • for pictures **[7, 2006.01]**
131/305 • • for refrigerators **[7, 2006.01]**
131/307 • • for ovens **[7, 2006.01]**
131/308 • • for aquaria **[7, 2006.01]**
131/40 • Lighting for industrial, commercial, recreational or military use **[7, 2006.01]**
131/401 • • for swimming pools **[7, 2006.01]**
131/402 • • for working places **[7, 2006.01]**
131/403 • • for machines **[7, 2006.01]**
131/4035 • • • for sewing machines **[7, 2006.01]**
131/405 • • for shop-windows or displays **[7, 2006.01]**
131/406 • • for theatres, stages or film studios **[7, 2006.01]**
131/407 • • for indoor arenas **[7, 2006.01]**
131/409 • • for furnaces or kilns **[7, 2006.01]**
131/411 • • for inspection of the interior of hollow structures, e.g. vessels, tubes **[7, 2006.01]**

F21Y INDEXING SCHEME ASSOCIATED WITH SUBCLASSES F21K, F21L, F21S and F21V, RELATING TO THE FORM OR THE KIND OF THE LIGHT SOURCES OR OF THE COLOUR OF THE LIGHT EMITTED [7]

Note(s) [7]

This subclass constitutes an indexing scheme associated with subclasses F21K, F21L, F21S and F21V, relating to the form or the kind of the light sources, or of the colour of the light emitted.

101/00 Point-like light sources [7, 2006.01, 2016.01]

103/00 Elongate light sources, e.g. fluorescent tubes [7, 2006.01, 2016.01]
*103/10 • comprising a linear array of point-like light-generating elements **[2016.01]***
*103/20 • of polygonal shape, e.g. square or rectangular **[2016.01]***
*103/30 • curved **[2016.01]***
*103/33 • • annular **[2016.01]***
*103/37 • • U-shaped **[2016.01]***

105/00 Planar light sources [7, 2006.01, 2016.01]
*105/10 • comprising a two-dimensional array of point-like light-generating elements **[2016.01]***
*105/12 • • characterised by the geometrical disposition of the light-generating elements, e.g. arranging light-generating elements in differing patterns or densities **[2016.01]***
*105/14 • • characterised by the overall shape of the two-dimensional array **[2016.01]***
*105/16 • • • square or rectangular, e.g. for light panels **[2016.01]***
*105/18 • • • annular; polygonal other than square or rectangular, e.g. for spotlights or for generating an axially symmetrical light beam **[2016.01]***

107/00 Light sources with three-dimensionally disposed light-generating elements [2016.01]
*107/10 • on concave supports or substrates, e.g. on the inner side of bowl-shaped supports **[2016.01]***
*107/20 • on convex supports or substrates, e.g. on the outer surface of spheres **[2016.01]***
*107/30 • on the outer surface of cylindrical surfaces, e.g. rod-shaped supports having a circular or a polygonal cross section **[2016.01]***
*107/40 • on the sides of polyhedrons, e.g. cubes or pyramids **[2016.01]***
*107/50 • on planar substrates or supports, but arranged in different planes or with differing orientation, e.g. on plate-shaped supports with steps on which light-generating elements are mounted **[2016.01]***
*107/60 • on stacked substrates **[2016.01]***
*107/70 • on flexible or deformable supports or substrates, e.g. for changing the light source into a desired form **[2016.01]***
*107/80 • on articulated supports or substrates **[2016.01]***
*107/90 • on two opposite sides of supports or substrates **[2016.01]***

109/00 Light sources with light-generating elements disposed on transparent or translucent supports or substrates [2016.01]

111/00 Light sources of a form not covered by groups F21Y 101/00-F21Y 107/00 [7, 2006.01, 2016.01]

113/00 Combination of light sources [7, 2006.01, 2016.01]
*113/10 • of different colours **[2016.01]***
*113/13 • • comprising an assembly of point-like light sources **[2016.01]***
*113/17 • • • forming a single encapsulated light source **[2016.01]***
*113/20 • of different form **[2016.01]***

115/00 Light-generating elements of semiconductor light sources [2016.01]
*115/10 • Light-emitting diodes [LED] **[2016.01]***
*115/15 • • Organic light-emitting diodes [OLED] **[2016.01]***
*115/20 • Electroluminescent [EL] light sources **[2016.01]***
*115/30 • Semiconductor lasers **[2016.01]***