

CPC COOPERATIVE PATENT CLASSIFICATION

F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING (NOTE omitted)

LIGHTING; HEATING

F21 LIGHTING (NOTE omitted)

F21S NON-PORTABLE LIGHTING DEVICES; SYSTEMS THEREOF; VEHICLE LIGHTING DEVICES SPECIALLY ADAPTED FOR VEHICLE EXTERIORS

NOTES

- This subclass covers:
 - devices or systems intended for fixed installation or for use at a permanent location, e.g. free-standing floor- or table-lamps.
 - aspects related to the optical, mechanical, thermal or electrical arrangement of elements in vehicle illuminating devices specially adapted for vehicle exterior, e.g. headlamps.
 - aspects related to the optical, mechanical, thermal or electrical arrangement of elements in vehicle light signalling devices specially adapted for vehicle exterior, e.g. brake lamps or direction indicator lights.
- This subclass does not cover:
 - devices or systems specially adapted for transportation, which are covered by subclass [F21L](#).
 - aspects related to the vehicles in which lighting devices are arranged, e.g. the arrangement or operation of lighting devices on vehicles, which are covered by [B60Q](#).
 - control of vehicle lighting devices in relation to the vehicle as a whole, e.g. for levelling, swivelling or aiming. Such arrangements are covered by group [B60Q 1/06](#), even if the movement of the lighting device occurs inside the lamp housing.
- 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.
- In this subclass, it is desirable to add the indexing codes of subclasses [F21W](#) and [F21Y](#).

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.

Electric lighting

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| <p>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</p> <p>2/005 . {of modular construction}</p> <p>4/00 Lighting devices or systems using a string or strip of light sources</p> <p>4/10 . with light sources attached to loose electric cables, e.g. Christmas tree lights</p> <p>4/15 . . the cables forming a grid, net or web structure</p> <p>4/20 . with light sources held by or within elongate supports</p> <p>4/22 . . flexible or deformable, e.g. into a curved shape</p> <p>4/24 . . . of ribbon or tape form, e.g. LED tapes</p> <p>4/26 . . . of rope form, e.g. LED lighting ropes, or of tubular form</p> <p>4/28 . . rigid, e.g. LED bars</p> <p>6/00 Lighting devices intended to be free-standing (F21S 9/00, F21S 10/00, {F21S 13/12} take precedence {lighting devices specially adapted to be transported from place to place, e.g. lighting devices carried on wheeled supports F21L; details of supports for lighting devices F21V 21/00})</p> | <p>6/001 . {being candle-shaped (with varying lighting effect of simulating flames F21S 10/04; string of light sources F21S 4/00)}</p> <p>6/002 . {Table lamps, e.g. for ambient lighting}</p> <p>6/003 . . {for task lighting, e.g. for reading or desk work, e.g. angle poise lamps}</p> <p>6/004 . {with a lamp housing in direct contact with the floor or ground}</p> <p>6/005 . {with a lamp housing maintained at a distance from the floor or ground via a support, e.g. standing lamp for ambient lighting}</p> <p>6/006 . . {for direct lighting only, e.g. task lighting}</p> <p>6/007 . . {for indirect lighting only, e.g. torchiere with reflector bowl directed towards ceiling}</p> <p>6/008 . . {with a combination of direct and indirect lighting}</p> <p>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)</p> <p>8/003 . {Searchlights, i.e. outdoor lighting device producing powerful beam of parallel rays, e.g. for military or attraction purposes (searchlights mounted on a vehicle B60Q 1/245)}</p> |
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- 8/006 . {Solar simulators, e.g. for testing photovoltaic panels}
- 8/02 . of recess-mounted type, e.g. downlighters (specially adapted for vehicle exteriors [F21S 41/00-F21S 45/00](#))
- 8/022 . . {intended to be recessed in a floor or like ground surface, e.g. pavement or false floor}
- 8/024 . . {intended to be recessed in a wall or like vertical structure, e.g. building facade}
- 8/026 . . {intended to be recessed in a ceiling or like overhead structure, e.g. suspended ceiling}
- 8/028 . . {being retractable, i.e. having two fixed positions, one recessed, e.g. in a wall, floor or ceiling, and one extended when in use}
- 8/03 . {of surface-mounted type ([F21S 8/02](#), [F21S 8/04](#) take precedence; details of wall or floor bases [F21V 21/02](#))}
- 8/031 . . {the device consisting essentially only of a light source holder with an exposed light source, e.g. a fluorescent tube}
- 8/032 . . {the surface being a floor or like ground surface, e.g. pavement}
- 8/033 . . {the surface being a wall or like vertical structure, e.g. building facade}
- 8/035 . . . {by means of plugging into a wall outlet, e.g. night light}
- 8/036 . . . {by means of a rigid support, e.g. bracket or arm}
- 8/037 . . . {for mounting in a corner, i.e. between adjacent walls or wall and ceiling}
- 8/038 . . {intended to be mounted on a light track (suspended from a light track [F21S 8/066](#); details of supporting elements displaceable along a guiding element [F21V 21/34](#))}
- 8/04 . intended only for mounting on a ceiling or the like overhead structures ([F21S 8/02](#) takes precedence; {details of ceiling bases [F21V 21/03](#))}
- 8/043 . . {mounted by means of a rigid support, e.g. bracket or arm}
- 8/046 . . {having multiple lighting devices, e.g. connected to a common ceiling base}
- 8/06 . . by suspension
- 8/061 . . . {with a non-rigid pendant, i.e. a cable, wire or chain}
- 8/063 . . . {with a rigid pendant, i.e. a pipe or rod}
- 8/065 . . . {multi-branched, e.g. a chandelier}
- 8/066 . . . {from a light track (details of supporting elements displaceable along a guiding element [F21V 21/34](#))}
- 8/068 . . . {from a stretched wire}
- 8/08 . . with a standard {([F21S 6/00](#) takes precedence)}
- 8/081 . . {of low-built type, e.g. landscape light}
- 8/083 . . . {of bollard type, i.e. with lighting fixture integrated into the standard or mounted on top of it and having substantially the same diameter}
- 8/085 . . {of high-built type, e.g. street light}
- 8/086 . . . {with lighting device attached sideways of the standard, e.g. for roads and highways}
- 8/088 . . . {with lighting device mounted on top of the standard, e.g. for pedestrian zones}
- 9/00 **Lighting devices with a built-in power supply; Systems employing lighting devices with a built-in power supply**
- 9/02 . the power supply being a battery or accumulator
- 9/022 . . {Emergency lighting devices}
- 9/024 . . . {using a supplementary light source for emergency lighting}
- 9/026 . . {rechargeable by using wind power, e.g. using wind turbines}
- 9/028 . . {rechargeable by using hydropower, e.g. using water powered turbines}
- 9/03 . . rechargeable by exposure to light
- 9/032 . . . {the solar unit being separate from the lighting unit}
- 9/035 . . . {the solar unit being integrated within the support for the lighting unit, e.g. within or on a pole}
- 9/037 . . . {the solar unit and the lighting unit being located within or on the same housing}
- 9/04 . the power supply being a generator
- 9/043 . . {driven by wind power, e.g. by wind turbines}
- 9/046 . . {driven by hydropower, e.g. by water powered turbines}
- 10/00 **Lighting devices or systems producing a varying lighting effect**
- 10/002 . {using liquids, e.g. water}
- 10/005 . {using light guides (light guides specially adapted for lighting devices [G02B 6/0001](#))}
- 10/007 . {using rotating transparent or colored disks, e.g. gobo wheels}
- 10/02 . changing colors {([F21S 10/002](#) - [F21S 10/007](#), [F21S 10/04](#) take precedence)}
- 10/023 . . {by selectively switching fixed light sources}
- 10/026 . . {by movement of parts, e.g. by movement of reflectors or light sources ([F21S 10/007](#) takes precedence)}
- 10/04 . simulating flames
- 10/043 . . {by selectively switching fixed light sources}
- 10/046 . . {by movement of parts, e.g. by movement of reflectors or light sources}
- 10/06 . flashing, e.g. with rotating reflector or light source {(signalling lighting devices mounted on vehicles [B60Q 1/26](#))}
- 10/063 . . {for providing a rotating light effect}
- 10/066 . . . {by selectively switching fixed light sources}
- Non-electric lighting**
- 11/00 **Non-electric lighting devices or systems using daylight** {(roofs with sky-light opening [E04D 13/03](#); sun blinds for windows with means for redirecting light onto ceiling of a room [E06B 9/00](#); hybrid lighting devices combining artificial and natural light [F21S 19/00](#); solar heat collectors [F24S](#); solar cells or solar cell modules [H01L 31/00](#))}
- 11/002 . {characterised by the means for collecting or concentrating the sunlight, e.g. parabolic reflectors or Fresnel lenses}
- 11/005 . . {with tracking means for following the position of the sun}
- 11/007 . {characterised by the means for transmitting light into the interior of a building}
- 13/00 **Non-electric lighting devices or systems employing a point-like light source; Non-electric lighting devices or systems employing a light source of unspecified shape**

13/02	. Devices intended to be fixed, e.g. ceiling lamp, wall lamp	41/176	. . . Light sources where the light is generated by photoluminescent material spaced from a primary light generating element
13/04	. . with a pendant		
13/06	. . . multi-branched, e.g. chandelier	41/18	. . . {Combination of light sources of different types or shapes}
13/08	. . with suspension from a stretched wire		
13/10	. . with a standard, e.g. street lamp	41/19	. . Attachment of light sources or lamp holders (achieving variable light distribution by movable light sources F21S 41/657)
13/12	. Devices intended to be free-standing, e.g. table lamp, floor lamp		
13/14	. Lighting systems	41/192	. . . {Details of lamp holders, terminals or connectors}
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	41/194	. . . {Bayonet attachments}
		41/196	. . . {Wire spring attachments}
		41/198	. . . {Snap-fit attachments}
		41/20	. characterised by refractors, transparent cover plates, light guides or filters
		41/24	. . Light guides
		41/25	. . Projection lenses
2017/00	Details solely applicable to the devices covered by groups F21S 13/00 and F21S 15/00	41/255	. . . Lenses with a front view of circular or truncated circular outline
2017/02	. Fastening and lifting of the lamp-glass		
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	41/26	. . . Elongated lenses
		41/265	. . . Composite lenses; Lenses with a patch-like shape
		41/27	. . . Thick lenses
19/005	. {Combining sunlight and electric light sources for indoor illumination}	41/275	. . . Lens surfaces, e.g. coatings or surface structures
		41/28	. . {Cover glass}
		41/285	. . {Refractors, transparent cover plates, light guides or filters not provided in groups F21S 41/24 - F21S 41/28 }
Vehicle lighting devices specially adapted for vehicle exteriors			
41/00	Illuminating devices specially adapted for vehicle exteriors, e.g. headlamps (reversing lights F21S 43/00)	41/29	. . Attachment thereof (for achieving variable light distribution F21S 41/63)
41/10	. characterised by the light source	41/295	. . . {specially adapted to projection lenses}
41/12	. . characterised by the type of emitted light	41/30	. characterised by reflectors
41/125	. . . Coloured light	41/32	. . Optical layout thereof
41/13	. . . Ultraviolet light; Infrared light	41/321	. . . {the reflector being a surface of revolution or a planar surface, e.g. truncated}
41/135	. . . Polarised		
41/14	. . characterised by the type of light source	41/322	. . . {the reflector using total internal reflection}
41/141	. . . Light emitting diodes [LED]	41/323	. . . {the reflector having two perpendicular cross sections having regular geometrical curves of a distinct nature}
41/143	. . . . the main emission direction of the LED being parallel to the optical axis of the illuminating device	41/33	. . . Multi-surface reflectors, e.g. reflectors with facets or reflectors with portions of different curvature
41/145	. . . . . the main emission direction of the LED being opposite to the main emission direction of the illuminating device	41/331	. . . . {the reflector consisting of complete annular areas}
41/147	. . . . . the main emission direction of the LED being angled to the optical axis of the illuminating device	41/332	. . . . . {with continuity at the junction between adjacent areas}
41/148	. . . . . the main emission direction of the LED being perpendicular to the optical axis	41/333	. . . . . {with discontinuity at the junction between adjacent areas}
41/151	. . . . . arranged in one or more lines	41/334	. . . . . {the reflector consisting of patch like sectors}
41/153	. . . . . arranged in a matrix		
41/155	. . . . . Surface emitters, e.g. organic light emitting diodes [OLED]	41/335	. . . . . {with continuity at the junction between adjacent areas}
41/16	. . . Laser light sources	41/336	. . . . . {with discontinuity at the junction between adjacent areas}
41/162	. . . Incandescent light sources, e.g. filament or halogen lamps	41/337	. . . . . {the reflector having a structured surface, e.g. with facets or corrugations}
41/164	. . . . having two or more filaments	41/338	. . . . . {the reflector having surface portions added to its general concavity}
41/166	. . . . characterised by the shape of the filament		
41/168	. . . . having a filament arranged transversally to the optical axis of the illuminating device	41/36	. . . Combinations of two or more separate reflectors
41/17	. . . Discharge light sources		
41/172	. . . . High-intensity discharge light sources	41/365	. . . . successively reflecting the light
41/173	. . . . Fluorescent light sources	41/37	. . characterised by their material, surface treatment or coatings

41/39	. . Attachment thereof (achieving variable light distribution by movable reflectors F21S 41/675)	43/241	. . . . of complex shape
41/395	. . . { specially adapted to extension reflectors }	43/242	. . . characterised by the emission area
41/40	. characterised by screens, non-reflecting members, light-shielding members or fixed shades	43/243	. . . . emitting light from one or more of its extremities
41/43	. . characterised by the shape thereof	43/245	. . . . emitting light from one or more of its major surfaces
41/435	. . . { Hoods or cap-shaped }	43/247	. . . with a single light source being coupled into the light guide
41/47	. . Attachment thereof (achieving variable light distribution by movable screens F21S 41/683)	43/249	. . . with two or more light sources being coupled into the light guide
41/50	. characterised by aesthetic components not otherwise provided for, e.g. decorative trim, partition walls or covers	43/251	. . . the light guides being used to transmit light from remote light sources
41/55	. . Attachment thereof	43/255	. . { Filters }
41/60	. characterised by a variable light distribution	43/26	. . { Refractors, transparent cover plates, light guides or filters not provided in groups F21S 43/235 - F21S 43/255 }
41/62	. . for adaptation between right-hand and left-hand traffic	43/27	. . Attachment thereof
41/63	. . by acting on refractors, filters or transparent cover plates	43/30	. characterised by reflectors
41/635	. . . { by moving refractors, filters or transparent cover plates }	43/31	. . Optical layout thereof
41/64	. . . by changing their light transmissivity, e.g. by liquid crystal or electrochromic devices	43/315	. . . { using total internal reflection }
41/645	. . . . {by electro-optic means, e.g. liquid crystal or electrochromic devices }	43/33	. . characterised by their material, surface treatment or coatings
41/65	. . by acting on light sources	43/37	. . Attachment thereof
41/657	. . . by moving light sources	43/40	. characterised by the combination of reflectors and refractors
41/663	. . . by switching light sources (by switching incandescent light sources F21S 41/162)	43/50	. characterised by aesthetic components not otherwise provided for, e.g. decorative trim, partition walls or covers
41/67	. . by acting on reflectors	43/51	. . { Attachment thereof }
41/675	. . . by moving reflectors	45/00	Arrangements within vehicle lighting devices specially adapted for vehicle exteriors, for purposes other than emission or distribution of light
41/68	. . by acting on screens	45/10	. Protection of lighting devices (cooling of lighting devices F21S 45/40 ; waterproofing of lighting devices F21S 45/50)
41/683	. . . by moving screens	45/20	. Promoting gas flow in lighting devices, e.g. directing flow toward the cover glass for demisting (ventilation F21S 45/30 ; forced cooling F21S 45/42)
41/686	. . . . Blades, i.e. screens moving in a vertical plane	45/30	. Ventilation or drainage of lighting devices
41/689	. . . . Flaps, i.e. screens pivoting around one of their edges	45/33	. . specially adapted for headlamps
41/692	. . . . Shields, i.e. screens not creating an image meant to be projected	45/37	. . specially adapted for signal lamps
41/695	. . . . Screens rotating around a vertical axis (rotating flaps F21S 41/689)	45/40	. Cooling of lighting devices
41/698	. . . . Shaft-shaped screens rotating along its longitudinal axis	45/42	. . Forced cooling
43/00	Signalling devices specially adapted for vehicle exteriors, e.g. brake lamps, direction indicator lights or reversing lights	45/43	. . . using gas
43/10	. characterised by the light source	45/435	. . . . circulating the gas within a closed system
43/13	. . characterised by the type of light source	45/46	. . . using liquid
43/14	. . . Light emitting diodes [LED]	45/465	. . . . from other vehicle cooling systems, e.g. from air-conditioning or engine cooling systems
43/145	. . . . Surface emitters, e.g. organic light emitting diodes [OLED]	45/47	. . Passive cooling, e.g. using fins, thermal conductive elements or openings
43/15	. . . Strips of light sources	45/48	. . . with means for conducting heat from the inside to the outside of the lighting devices, e.g. with fins on the outer surface of the lighting device
43/16	. . . Light sources where the light is generated by photoluminescent material spaced from a primary light generating element	45/49	. . Attachment of the cooling means
43/19	. . Attachment of light sources or lamp holders	45/50	. Waterproofing
43/195	. . . { Details of lamp holders, terminals or connectors }	45/60	. Heating of lighting devices, e.g. for demisting
43/20	. characterised by refractors, transparent cover plates, light guides or filters	45/70	. Prevention of harmful light leakage
43/235	. . Light guides		
43/236	. . . characterised by the shape of the light guide		
43/237	. . . . rod-shaped		
43/239	. . . . plate-shaped		