

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B60 VEHICLES IN GENERAL

(NOTE omitted)

B60Q ARRANGEMENT OF SIGNALLING OR LIGHTING DEVICES, THE MOUNTING OR SUPPORTING THEREOF OR CIRCUITS THEREFOR, FOR VEHICLES IN GENERAL

NOTES

1. This subclass also covers the operation and control of lighting devices, for example:
 - arrangement or adaptation of lighting switches or signal-initiating means for vehicles.
 - control of lighting devices in relation to the vehicle as a whole, e.g. for levelling, swivelling or aiming.
2. This subclass does not cover optical, mechanical, thermal or electrical arrangement of elements within lighting devices, which are covered by groups [F21S 41/00](#) – [F21S 45/00](#).
3. Attention is drawn to the Note following the title of class [B60](#).
4. Attention is drawn to the following places:
5. [B60K 28/00](#) Safety devices, e.g. sleeping driver
[B60R 25/00](#) Anti-theft
[B62D](#) Driving assistance
[B62D 15/02](#) Steering aids
[B60K 31/0008](#) Cruise control
[G01S](#) Infrared night vision
[G01S 13/931](#) Anti-collision
[G05D 1/00](#) Automatic pilot
[G06K 9/00](#) Pattern recognition
[G06T 3/00](#) Image transformation
[G06T 5/00](#) Image enhancement
[G06T 7/00](#) Image analysis
[G08B 21/00](#) Alarms in general
[G08G](#) Traffic control
[G08G 1/16](#) Anti-collision systems
[H04N](#) Television systems

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

B60Q 1/128	covered by	B60Q 1/124
B60Q 1/132	covered by	B60Q 1/124
B60Q 1/136	covered by	B60Q 1/124

1/00	Arrangements or adaptations of optical signalling or lighting devices (for lighting vehicle interior or lighting devices (for lighting vehicle interior B60Q 3/00 {; circuit arrangements for electric light sources in general H05B 47/00})	1/0017	. {Devices integrating an element dedicated to another function}
1/0005	. {Devices preventing the lights from becoming dirty or damaged (protecting lighting devices from damage in general F21V 15/00), e.g. protection grids (fastening of grids or protective cages in general F21V 17/00), cleaning by air flow (windshield wipers for cleaning optical devices of vehicles B60S 1/04)}	1/0023	. . {the element being a sensor, e.g. distance sensor, camera}
1/0011	. {with light guides for distributing the light between several lighting or signalling devices (using light guides inside a single device F21S 8/00, light guides per se G02B 6/0001)}	1/0029	. {Spatial arrangement}
		1/0035	. . {relative to the vehicle}
		1/0041	. . {of several lamps in relation to each other}
		1/0047	. . . {Signalling unit mounted on a headlamp unit}
		1/0052	. . . {concentric}
		1/0058	. . . {Stacked, i.e. one lamp located behind the other in the optical axis direction}

- 1/0064 . {with provision for maintenance, e.g. changing the light bulb (swivel arrangements [B60Q 1/0425](#); fastening of covers [F21S 41/50](#); changing light sources in general [F21V 19/04](#); fastening of light sources or lamp holders [F21S 41/19](#), [F21S 43/19](#))}
- 1/007 . . {via a removable cap (fastening of the light source by a cap holding the light source [F21S 41/19](#), [F21S 43/19](#))}
- 1/0076 . {Switches therefor ([B60Q 1/1446](#), [B60Q 1/343](#), [B60Q 1/40](#) take precedence, arrangements or fitting of control knobs on dashboard [B60K 37/06](#))}
- 1/0082 . . {mounted on the steering wheel}
- 1/0088 . {Details of electrical connections ([B60Q 1/305](#) takes precedence; electrical connectors in general [H01R](#); electrical connection of the light source itself [F21S 41/192](#), [F21S 43/195](#))}
- 1/0094 . . {Arrangement of electronic circuits separated from the light source (, e.g. mounting of housings for starter circuits for discharge lamps, circuits *per se* [H05B](#), arrangements being part of the light source holder [F21V 17/06](#), [F21S 41/192](#), [F21S 43/195](#))}
- 1/02 . the devices being primarily intended to illuminate the way ahead or to illuminate other areas of way or environments
- 1/04 . . the devices being headlights
- 1/0408 . . . {built into the vehicle body, e.g. details concerning the mounting of the headlamps on the vehicle body ([B60Q 1/0491](#), [B60Q 1/05](#) take precedence, integrated front ends [B62D 25/00](#))}
- 1/0416 {the housing being mounted on the vehicle body using rails}
- 1/0425 {the housing being swivel mounted on the vehicle body}
- 1/0433 {the housing being fastened onto the vehicle body using screws (adjustable headlamp by rotation of a screw [B60Q 1/0683](#))}
- 1/0441 {the housing being fastened onto the vehicle body using means other than screws}
- 1/045 {with provision for adjusting the alignment of the headlamp housing with respect to the vehicle body (adjusting the light beam [B60Q 1/06](#))}
- 1/0458 {the front cover being directly mounted onto the vehicle body (mounting the cover on the housing [F21S 41/50](#))}
- 1/0466 {with arrangement for sealing the headlamp with respect to the vehicle body, or for concealing gaps between the headlamp and the vehicle body}
- 1/0475 {with provisions for pre-mounting, for temporary holding the headlamp before or during final mounting}
- 1/0483 . . . {mounted on a bracket, e.g. details concerning the mounting of the lamps on the vehicle body}
- 1/0491 . . . {Shock absorbing devices therefor (resilient mounting of lighting devices in general [F21V 15/04](#); shock absorbing devices in general [F16F 15/04](#))}
- 1/05 . . . retractable
- 1/06 . . . adjustable, e.g. remotely controlled from inside vehicle ([B60Q 1/05](#) takes precedence ; controlling the distribution of the light emitted by adjustment of elements [F21V 14/00](#))}
- 1/064 by fluid means
- 1/068 by mechanical means
- 1/0683 {Adjustable by rotation of a screw}
- 1/0686 {using a position indicator mounted on the headlight and permanently attached thereto}
- 1/072 comprising a flexible element, e.g. chain
- 1/076 by electrical means {including means to transmit the movements, e.g. shafts or joints}
- 1/08 automatically
- 1/085 {due to special conditions, e.g. adverse weather, type of road, badly illuminated road signs or potential dangers ([B60Q 1/10](#), [B60Q 1/12](#), [B60Q 1/1423](#) take precedence)}
- 1/10 due to vehicle inclination, e.g. due to load distribution
- 1/105 by fluid means
- 1/11 by mechanical means
- 1/115 by electric means {(details of the electric drive components, e.g. motors, shafts, ball joints [B60Q 1/076](#))}
- 1/12 due to steering position
- 1/121 {with fluid actuating means}
- 1/122 {with electrical actuating means (details of the electric drive components, e.g. motors, shafts, ball joints [B60Q 1/076](#))}
- 1/124 by mechanical means
- 1/14 . . . having dimming means {(lighting power supply circuits in general [H05B](#))}
- 1/1407 {General lighting circuits comprising dimming circuits (dimming circuits *per se* [B60Q 1/1415](#))}
- 1/1415 {Dimming circuits}
- 1/1423 {Automatic dimming circuits, i.e. switching between high beam and low beam due to change of ambient light or light level in road traffic}
- 1/143 {combined with another condition, e.g. using vehicle recognition from camera images or activation of wipers}
- 1/1438 {Actuating means for dimming masks or screens (adjustable screens *per se* [F21V 11/04](#))}
- 1/1446 {controlled by mechanically actuated switches}
- 1/1453 {Hand actuated switches}
- 1/1461 {Multifunction switches for dimming headlights and controlling additional devices, e.g. for controlling direction indicating lights}
- 1/1469 {controlled by or attached to a single lever, e.g. steering column stalk switches}
- 1/1476 {comprising switch controlling means located near the free end of the lever, e.g. press buttons, rotatable rings}
- 1/1484 {mounted on the steering wheel}
- 1/1492 {Foot actuated switches}
- 1/16 . . . illuminating the way asymmetrically
- 1/18 . . . being additional front lights {(bracket mounted headlights [B60Q 1/0483](#))}
- 1/20 Fog lights

- 1/22 . . for reverse drive
- 1/24 . . for lighting other areas than only the way ahead
- 1/245 . . . {using spotlights adjustable from within the vehicle (adjustable headlights [B60Q 1/06](#))}
- 1/26 . the devices being primarily intended to indicate the vehicle, or parts thereof, or to give signals, to other traffic {(means for the lighting or illuminating of aerials, e.g. for purpose of warning [H01Q 1/06](#))}
- 1/2603 . . {Attenuation of the light according to ambient luminosity, e.g. for braking or direction indicating lamps}
- 1/2607 . . {comprising at least two indicating lamps}
- 1/2611 . . {Indicating devices mounted on the roof of the vehicle (flashing light sources in general [F21S 10/06](#))}
- 1/2615 . . {mounted on the vehicle body, e.g. with magnets}
- 1/2619 . . {built in the vehicle body}
- 1/2623 . . . {Details of the fastening means}
- 1/2626 {Screw-nut fasteners}
- 1/263 {Snap-in fasteners}
- 1/2634 {Fastening by rotating the device housing about its longitudinal axis, e.g. bayonet fasteners}
- 1/2638 . . . {Positioning the device housing by indexing means separate from the fastening means, e.g. pins, rails}
- 1/2642 . . . {with provision for adjusting the alignment of the device housing with respect to the vehicle body}
- 1/2646 {using dowels or expansible elements}
- 1/2649 . . . {with provision for pre-mounting or temporary holding the device before or during final mounting}
- 1/2653 . . . {with arrangement for sealing the device with respect to the vehicle body, or for concealing gaps between the device and the vehicle body}
- 1/2657 . . {mounted on a shaft, e.g. telescopic (lamps on antennas or powerlines [F21S 8/085](#))}
- 1/2661 . . {mounted on parts having other functions (on wheels [B60Q 1/323](#))}
- 1/2665 . . . {on rear-view mirrors (lighting devices for vehicle interior on or for rear-view mirrors [B60Q 3/258](#); rear-view mirror arrangements [B60R 1/02](#); mirror assemblies combined with lamps [B60R 1/1207](#); adaptations or arrangements of mirrors for use on cycles [B62J 29/00](#))}
- 1/2669 . . . {on door or boot handles (lighting devices for vehicle interior on door handles [B60Q 3/267](#); vehicle doors [B60J 5/00](#); illuminating devices on or for locks or keys [E05B 17/10](#); keyhole finders [E05B 15/08](#))}
- 1/2673 . . . {on parts worn by the driver, e.g. clothes (professional or sporting clothes with reflecting or luminous means [A41D 13/01](#)), gloves (protective gloves with reflecting or luminous means [A41D 19/0157](#)), or bags, specially adapted to provide auxiliary vehicle signalling}
- 1/2676 {Helmets (helmets in general [A42B 3/00](#); helmets with signalling or lighting devices [A42B 3/0433](#))}
- 1/268 . . . {on windcreens or windows ([B60Q 1/302](#) takes precedence; lighting devices for vehicle interior on or for windows [B60Q 3/208](#); windows or windcreens in general [B60J 1/00](#))}
- 1/2684 . . . {on wipers or windscreen washers (vehicle wipers [B60S 1/04](#); windscreen washers [B60S 1/46](#))}
- 1/2688 . . . {on exhaust pipes (exhaust or silencing apparatuses in general [F01N](#))}
- 1/2692 . . {retractable lights (retractable headlights [B60Q 1/05](#))}
- 1/2696 . . {Mounting of devices using LEDs (fastening of LEDs on printed circuits [F21V 19/001](#))}
- 1/28 . . for indicating front of vehicle
- 1/30 . . for indicating rear of vehicle, e.g. by means of reflecting surfaces
- 1/302 . . . {mounted in the vicinity, e.g. in the middle, of a rear window}
- 1/305 . . . {Indicating devices for towed vehicles}
- 1/307 . . . {mounted on loading platforms (warning signals on loading platforms [B60P 1/4464](#))}
- 1/32 . . for indicating vehicle sides {, e.g. clearance lights}
- 1/323 . . . {on or for doors or running boards, e.g. to facilitate access to the vehicle (illumination of door locks [E05B 17/10](#))}
- 1/326 . . . {on or for wheels}
- 1/34 . . for indicating change of drive direction ([B60Q 1/22](#) takes precedence)
- 1/343 . . . {Manually actuated switching arrangements therefor (hand actuated multifunction switches [B60Q 1/1461](#); [B60Q 1/40](#) takes precedence)}
- 1/346 . . . {with automatic actuation}
- 1/36 . . . using movable members, e.g. arms with built-in flashing lamps
- 1/38 . . . using immovably-mounted light sources, e.g. fixed flashing lamps
- 1/382 {Electronic temporisation with semiconductor amplification}
- 1/385 {Electronic temporisation with relay amplification}
- 1/387 {Mechanical temporisation}
- 1/40 . . . having {mechanical, electric or electronic} automatic return to inoperative position
- 1/42 {having mechanical automatic return to inoperative position} due to steering-wheel position {, e.g. with roller wheel control}
- 1/425 {using a latching element for resetting a switching element (hand actuated multifunction switches [B60Q 1/1461](#))}
- 1/44 . . for indicating braking action or preparation for braking, {e.g. by detection of the foot approaching the brake pedal}
- 1/441 . . . {Electric switches operable by the driver's pedals (electric switches in general [H01H](#))}
- 1/442 . . . {visible on the front side of the vehicle, e.g. for pedestrians}
- 1/444 . . . {with indication of the braking strength or speed changes, e.g. by changing shape or intensity of the indication ([B60Q 1/1407](#), [B60Q 1/442](#), [B60Q 1/447](#) take precedence)}
- 1/445 . . . {controlled by inertial devices}

1/447	. . . {with indication of the braking strength or speed changes, e.g. by changing the shape or intensity of the indication}	3/35	. . Portable lighting devices
1/448	. . . {specially adapted for vehicles with ABS}	3/40	. specially adapted for specific vehicle types
1/46	. . for giving flashing caution signals during drive, other than signalling change of direction, e.g. flashing the headlights {, hazard lights (flashing lights in general F21S 10/06)}	3/41	. . for mass transit vehicles, e.g. buses
1/48	. . for parking purposes {(warning arrangements in garages E04H 6/42)}	3/43	. . . General lighting
1/482	. . . {for locating vehicle in parking lot}	3/44	. . . Spotlighting, e.g. reading lamps
1/484	. . . {for showing outline of vehicle}	3/46	. . . Emergency lighting, e.g. for escape routes
1/486	. . . {for indicating that vehicle is in a parked state}	3/47	. . . Circuits; Control arrangements
1/488	. . . {for indicating intention to park}	3/49	. . for vehicles with non-fixed roofs, e.g. convertibles
1/50	. . for indicating other intentions or conditions, e.g. request for waiting or overtaking	3/50	. Mounting arrangements (for compartments other than passenger or driving compartments B60Q 3/30; specially adapted for specific vehicle types B60Q 3/40)
1/503	. . . {using luminous text displays}	3/51	. . for mounting lighting devices onto vehicle interior, e.g. onto ceiling or floor
1/506	. . . {for signaling silent vehicles, e.g. for warning that a hybrid or electric vehicle is approaching}	3/53	. . . Modular mounting systems, e.g. using tracks, rails or multiple plugs
1/52	. . . for indicating emergencies {(braking indicating devices B60Q 1/44, portable emergency signal devices B60Q 7/00)}	3/54	. . Lighting devices embedded in interior trim, e.g. in roof liners
1/525 {indicating risk of collision between vehicles or with pedestrians (using video cameras B62D 1/00; radars designed for anti-collision purposes between land vehicles or between land vehicle and fixed obstacles G01S 13/931; control of position or course in two dimensions for land vehicles G05D 1/021; anti-collision systems for road vehicles G08G 1/16)}	3/56	. . Lighting devices mounted on elongate supports, e.g. on flexible arms
1/54	. . . for indicating speed {outside of the vehicle (automatic vehicle speed controlling fittings including unintended speed signalling devices to the vehicle driver B60K 31/18)}	3/57	. . Retractable or concealable lighting devices
1/56	. . for illuminating registrations or the like {, e.g. for licence plates (license plates B60R 13/10)}	3/59	. . Lighting devices mounted in the vehicle interior and adapted for portability
3/00	Arrangement of lighting devices for vehicle interiors; Lighting devices specially adapted for vehicle interiors	3/60	. characterised by optical aspects
3/10	. for dashboards	3/62	. . using light guides
3/12	. . lighting onto the surface to be illuminated	3/64	. . . for a single lighting device
3/14	. . lighting through the surface to be illuminated	3/66	. . . for distributing light among several lighting devices
3/16	. . Circuits; Control arrangements	3/68	. . using ultra-violet light
3/18	. . . for varying the light intensity	3/70	. characterised by the purpose
3/20	. for lighting specific fittings of passenger or driving compartments; mounted on specific fittings of passenger or driving compartments (lighting for dashboards B60Q 3/10)	3/72	. . for preventing the driver from being dazzled
3/208	. . Sun roofs; Windows	3/74	. . for overall compartment lighting; for overall compartment lighting in combination with specific lighting, e.g. room lamps with reading lamps (general lighting mounted on specific fittings B60Q 3/20; general lighting for mass transit vehicles B60Q 3/43)
3/217	. . Doors, e.g. door sills; Steps	3/745	. . . {using lighting panels or mats, e.g. electro-luminescent panels, LED mats}
3/225	. . Small compartments, e.g. glove compartments	3/76	. . for spotlighting, e.g. reading lamps (spotlighting on or for specific fittings B60Q 3/20; spotlighting in mass transit vehicles B60Q 3/44)
3/233	. . Seats; Arm rests; Head rests	3/78	. . for generating luminous strips, e.g. for marking trim component edges
3/242	. . Safety belts; Body harnesses	3/80	. Circuits; Control arrangements (for dashboards B60Q 3/16; for mass transit vehicles B60Q 3/47)
3/252	. . Sun visors	3/82	. . Switches specially adapted for vehicle interior lighting, e.g. switching by tilting the lens
3/258	. . Rear-view mirrors	3/85	. . for manual control of the light, e.g. of colour, orientation or intensity
3/267	. . Door handles; Hand grips	3/88	. . Means for plugging to the electrical power supply of the vehicle, e.g. by using cigarette lighter sockets
3/275	. . Smoking-related fittings, e.g. cigarette lighters or ashtrays	5/00	Arrangements or adaptations of acoustic signal devices {(sound producing devices in general G10K)}
3/283	. . Steering wheels; Gear levers	5/001	. {Switches therefor}
3/292	. . Ignition locks	5/003	. . {mounted on the steering wheel}
3/30	. for compartments other than passenger or driving compartments, e.g. luggage or engine compartments	5/005	. {automatically actuated}

5/006	. . {indicating risk of collision between vehicles or with pedestrians (using video cameras B62D 1/00 ; radars designed for anti-collision purposes between land vehicles or between land vehicle and fixed obstacles G01S 13/931 ; control of position or course in two dimensions for land vehicles G05D 1/021 ; anti-collision systems for road vehicles G08G 1/16)}	2300/05	. Special features for controlling or switching of the light beam
5/008	. . {for signaling silent vehicles, e.g. for warning that a hybrid or electric vehicle is approaching}	2300/052	. . Switching delay, i.e. the beam is not switched or changed instantaneously upon occurrence of a condition change
7/00	Arrangement or adaptation of portable emergency signal devices on vehicles	2300/054	. . Variable non-standard intensity, i.e. emission of various beam intensities different from standard intensities, e.g. continuous or stepped transitions of intensity
7/005	. {Devices without lamps}	2300/056	. . Special anti-blinding beams, e.g. a standard beam is chopped or moved in order not to blind
7/02	. to be attached to overhanging loads or extending parts of vehicle	2300/10	. Indexing codes relating to particular vehicle conditions
9/00	Arrangements or adaptations of signal devices not provided for in one of the preceding main groups, {e.g. haptic signalling}	2300/11	. . Linear movements of the vehicle
9/001	. {Alarm devices when the motor is stopped and the lights are on}	2300/112	. . . Vehicle speed
9/002	. {for parking purposes, e.g. for warning the driver that his vehicle has contacted or is about to contact an obstacle (warning arrangements in garages E04H 6/42)}	2300/114	. . . Vehicle acceleration or deceleration
9/003	. . {using physical contactors, e.g. arms that trigger alarm upon contact with obstacle}	2300/116	. . . Vehicle at a stop
9/004	. . {using wave sensors (radar designed for anti-collision purposes between land vehicles or between land vehicles and fixed obstacles G01S 13/931)}	2300/12	. . Steering parameters
9/005	. . . {using a video camera}	2300/122	. . . Steering angle
9/006	. . . {using a distance sensor}	2300/124	. . . Steering speed
9/007	. . {providing information about the distance to an obstacle, e.g. varying sound}	2300/126	. . . Hysteresis behavior based on steering
9/008	. {for anti-collision purposes}	2300/128	. . . Steering dead zone
11/00	Arrangements of monitoring devices for devices provided for in groups B60Q 1/00 - B60Q 9/00 {(testing of electric installations on road vehicle G01R 31/00)}	2300/13	. . Attitude of the vehicle body
11/002	. {Emergency driving lights in the event of failure of the principal lighting circuit}	2300/132	. . . Pitch
11/005	. {for lighting devices, e.g. indicating if lamps are burning or not}	2300/134	. . . Yaw
11/007	. . {the lighting devices indicating change of drive direction (change of drive direction indicators B60Q 1/34)}	2300/136	. . . Roll
2200/00	Special features or arrangements of vehicle headlamps	2300/14	. . Other vehicle conditions
2200/30	. Special arrangements for adjusting headlamps, e.g. means for transmitting the movements for adjusting the lamps	2300/142	. . . Turn signal actuation
2200/32	. . Ball-joints	2300/144	. . . Rearward ratio actuation
2200/34	. . Deformable parts, i.e. the adjustment is performed by bending or stretching a part	2300/146	. . . Abnormalities, e.g. fail-safe
2200/36	. . Conjoint adjustments, i.e. a mechanical link allows conjoint adjustment of several units	2300/20	. Indexing codes relating to the driver or the passengers
2200/38	. . Automatic calibration of motor-driven means for adjusting headlamps, i.e. when switching on the headlamps, not during mounting at factories	2300/21	. . Manual control
2300/00	Indexing codes for automatically adjustable headlamps or automatically dimmable headlamps	2300/22	. . Seat occupation
		2300/23	. . Driver's line of sight
		2300/30	. Indexing codes relating to the vehicle environment
		2300/305	. . Calendar date or clock time
		2300/31	. . Atmospheric conditions
		2300/312	. . . Adverse weather
		2300/314	. . . Ambient light
		2300/32	. . Road surface or travel path
		2300/322	. . . Road curvature
		2300/324	. . . Road inclination, e.g. uphill or downhill
		2300/33	. . Driving situation
		2300/331	. . . characterised by the driving side, e.g. on the left or right hand side
		2300/332	. . . on city roads
		2300/3321 Detection of streetlights
		2300/333	. . . on suburban or country roads
		2300/334	. . . on motorways
		2300/335	. . . Number or size of road lanes
		2300/336	. . . Crossings
		2300/337	. . . Tunnels or bridges
		2300/338	. . . Overtaking
		2300/40	. Indexing codes relating to other road users or special conditions
		2300/41	. . preceding vehicle
		2300/42	. . oncoming vehicle
		2300/43	. . following vehicle
		2300/45	. . Special conditions, e.g. pedestrians, road signs or potential dangers

B60Q

- 2300/47 . . Direct command from other road users, i.e. the command for switching or changing the beam is sent by other vehicles or road devices

2400/00 Special features or arrangements of exterior signal lamps for vehicles

- 2400/10 . Electroluminescent surfaces, i.e. signalling by way of electroluminescent strips or panels
- 2400/20 . Multi-color single source or LED matrix, e.g. yellow blinker and red brake lamp generated by single lamp
- 2400/30 . Daytime running lights [DRL], e.g. circuits or arrangements therefor
- 2400/40 . Welcome lights, i.e. specific or existing exterior lamps to assist leaving or approaching the vehicle
- 2400/50 . Projected signs, i.e. symbol or information is projected onto the road

2500/00 Special features or arrangements of vehicle interior lamps

- 2500/10 . embedded in interior trim, e.g. integrated in headliner layers
- 2500/20 . associated with air conditioning arrangements

2900/00 Features of lamps not covered by other groups in [B60Q](#)

- 2900/10 . Retrofit arrangements
- 2900/20 . Arrangements for easy recycling, e.g. for easy dismantling or use of special materials
- 2900/30 . Lamps commanded by wireless transmissions