

# FAA Heliport Design

The following information is for the preliminary planning of a public use, general aviation heliport only. FAA recommendations and standards for heliport design are found in Advisory Circular 150/5390-2C. While the Advisory Circular (AC) provides general design guidance, the AC is advisory only and doesn't mandate required practices. Flight Light recommends that anyone constructing or modifying a heliport should determine all site-specific requirements and consult with a local FAA representative.

## Basic Layout

A heliport should include at least one Touchdown and Liftoff (TLOF) area centered in a Final Approach and Takeoff (FATO) area, a peripheral safety area and two or more approach and departure paths. The TLOF must be at least as long and wide as the rotor diameter of the largest helicopter to use the heliport. The FATO must be at least 1.5 times the overall length of the helicopter. The width of the safety area must be at least 0.33 times the rotor diameter, but not less than 20 ft. (6 m). At least two approach/departure paths, with one aligned in the direction of the predominant wind, are required.

## Heliport Lighting

For night operations, the TLOF, FATO, taxiways, taxi routes, and windsock should be lighted. Other useful visual aids include: floodlights, landing direction lights, taxiway lights, a heliport identification beacon, and a heliport approach path indicator (CHAPI). Obstruction lights must be installed where required to mark objects in close proximity to the approach/departure path.

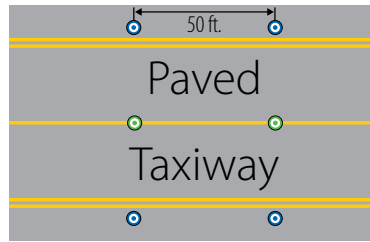
Please note: since the FAA AC does not contain intensity standards, perimeter lights can't be FAA certified or deemed compliant.

## Touchdown and Liftoff (TLOF) Lights

Flush green lights (meeting the standards of EB 87) should be used to define the TLOF perimeter. Use a minimum of four light fixtures per side of a square or rectangular TLOF. Locate a light at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. Define a circular TLOF using an even number of lights, with a minimum of eight, uniformly spaced. Space the lights at a maximum of 25 ft. (7.6 m). Locate flush lights within 1 ft. (30 cm) inside or outside of the TLOF perimeter. As an option, raised, omnidirectional

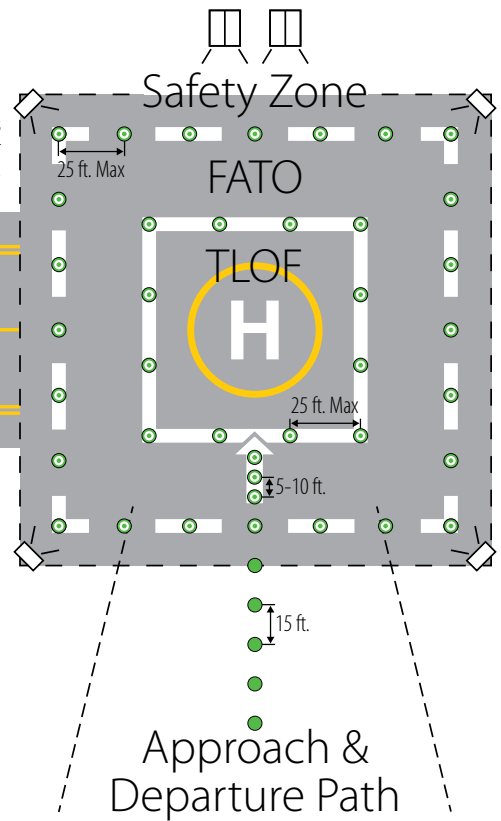


This drawing is not to scale and is for informational purposes only. All heliports must comply with FAA Advisory Circular 150/5390-2C. Contact your local FAA office with questions.



## Legend

- Flush Inset Light - Green
- Flush Inset Light - Blue
- Landing Direction Light - Green
- Floodlight
- Rotating Heliport Beacon or Flashing Morse Code "H" Beacon
- CHAPI - Approach Path Indicator
- Lighted Windsock



lights (meeting the requirements of EB 87) may be used to mark the TLOF perimeter. Locate the lights on the outside edge of the TLOF or the outer edge of the safety net. Make sure the raised lights do not penetrate a horizontal plane at the FATO elevation by more than 2 inches (5 cm).

## Final Approach and Takeoff (FATO) Lights

Green lights (meeting the standards of EB 87)(with the same candelas as the TLOF lights) MUST BE used to define the FATO perimeter. When a heliport on an airport is sited near a taxiway, yellow lights may be used to avoid pilots confusing the green taxiway centerline lights with the FATO perimeter lights. Do not light the FATO perimeter if any portion of the FATO is not a load-bearing surface. Use a minimum of four flush or raised light fixtures per side of a square or rectangular FATO. Locate a light at each corner, with additional lights uniformly spaced between the corner lights. Using an odd number of lights on each side will place lights along the centerline of the approach. To define a circular FATO, use an even number of lights, with a minimum of eight, uniformly spaced. Space lights at a maximum of 25 ft. (7.6 m). Locate flush lights within 1 ft. (30 cm) inside or outside of the FATO perimeter. As an option, locate raised FATO perimeter lights, no more than 8 inches (20 cm) high, 10 ft. (3 m) from the FATO perimeter.



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## Floodlights

If ambient light does not adequately illuminate markings for night operations, floodlights should be used to illuminate the TLOF, the FATO, and/or the parking area. Floodlights should be placed so they do not constitute an obstruction hazard. Aim floodlights down to provide adequate illumination on the surface. Make sure floodlights that might interfere with pilot vision during takeoff and landings are capable of being turned off by pilot control or at pilot request.

## Landing Direction Lights

To provide directional guidance, install landing direction lights - a configuration of five green, omnidirectional lights (meeting the standards of EB 87) on the centerline of the preferred approach/departure path. Space these lights at 15 ft. (5 m) intervals beginning at a point not less than 20 ft. (6 m) and not more than 60 ft. (18 m) from the TLOF perimeter and extending outward in the direction of the preferred approach/departure path.

## Flight Path Alignment Lights

You may indicate available approach and/or departure path directions by placing green lights (meeting the standards of EB 87) in a straight line along the direction of approach and/or departure flight paths. If necessary, extend the lights across the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area. Install three or more green lights spaced at 5 ft. (1.5 m) to 10 ft. (3.0 m).

## Visual Glide Path Indicator

The heliport approach path indicator (CHAPI) provides pilots with visual course and descent cues. The optimum location of a CHAPI is on the extended centerline of the approach path at a distance that brings the helicopter to a hover with the undercarriage between 3 and 8 ft. (0.9 to 2.5 m) above the TLOF.

## Lighted Wind Cone

To show the direction and magnitude of the wind, an FAA L-807 Size 1 (about 22 ft. overall height with an 8 ft., international orange windsock) is recommended; the L-806 (10 ft. tall) may be substituted. The L-807 has a hinged pole and a rigid base, the L-806 has a frangible base. The wind cone must be placed outside the safety zone and away from flight paths.

## Heliport Identification Beacon

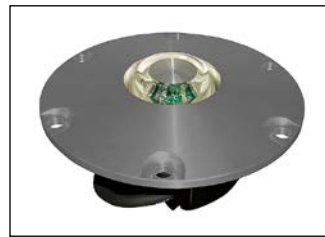
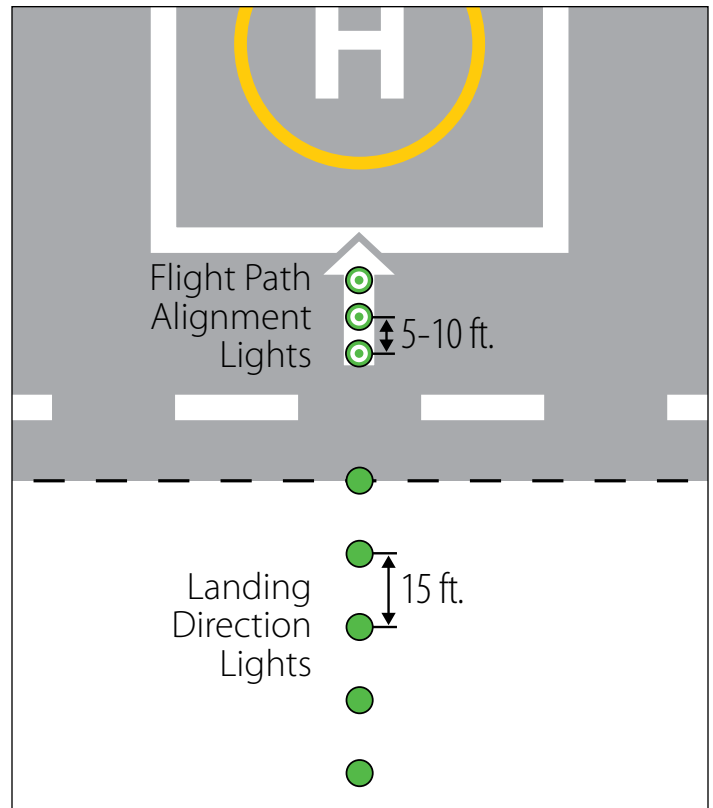
Located within 1/4 mi of the heliport, three sealed beam lights rotate at 10 to 15 rpm to produce 30 to 45 fpm in white, green and yellow. A beacon using Morse code signals is also available.

## Taxiway Lights

Taxiway centerlines are defined with flush L-852A and L-852B bi-directional green lights spaced at maximum 50 ft. (15 m) intervals. Blue lights set at the same intervals are used to define the edges of the taxi route.

## Obstruction Lights

Difficult-to-see objects should be marked with a red FAA approved obstruction light. Contact your local FAA office with questions.



TLOF & FATO Light Fixture



Floodlight



CHAPI: Approach Path Indicator



Heliport Identification Beacon



Wind Cone



Obstruction Light



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# Basic Heliport Lighting System Packages

Basic packages may be customized and expanded to fit your needs. Call to discuss your requirements.

## Package 1: Elevated, Incandescent

- Easy installation
- Easy maintenance
- Economical: uses off-the-shelf lamps

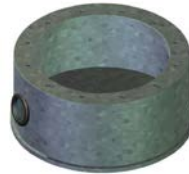
Qty:	Item #:	Description:
8	FL-860-G-69A-141	L-860: green, 69W, 14" height, A21 lamp, 1.5" frangible coupling, 120 VAC operation
8	BA-1935AA-25	Base plate for L-868AA base: 8.5" diameter, 7.25" bolt circle
8	BA-725-5-2P1	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	WCH-806-1-EX-120-N	Externally lit (halogen), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth), 120 VAC operation



FL-860



Base Plate



Base



Wind Cone

## Package 2: Elevated, LED

- Easy installation
- Lowered maintenance: LED life expectancy exceeds 50K hours
- Lowered operating costs: low power LED technology

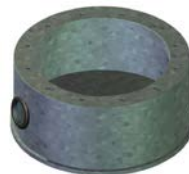
Qty:	Item #:	Description:
8	HL-860-GL-120-141	Elevated LED (5 watt) green perimeter light and 1.5" frangible coupling, 120V operation
8	BA-1935AA-25	Base plate for L-868AA base: 8.5" diameter, 7.25" bolt circle
8	BA-725-5-2P1	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	WCH-806-1-EX-120-5	Externally lit (LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 120 VAC operation



HL-860



Base Plate



Base



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### Package 3: Elevated, LED, Low Voltage

- Improved safety: low voltage DC operation
- Easy installation
- Lowered maintenance: LED life expectancy exceeds 50K hours
- Lowered operating costs: low power LED technology

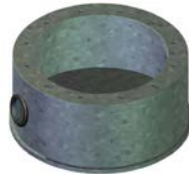
Qty:	Item #:	Description:
8	HL-860-GL-12-141	Elevated LED (5 watt) green perimeter light and 1.5" frangible coupling, 12 VDC operation
8	BA-1935AA-25	Base plate for L-868AA base: 8.5" diameter, 7.25" bolt circle
8	BA-725-5-2P1	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	HL-HSC-AC1-DC	Low Voltage System Controller with 12 VDC output, on/off switch, 150 watt power output capability (See Controller data sheet for ordering options: Solar, Timer, etc.)
1	WCH-806-1-EX-12-5	Externally lit (low voltage LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 12 VDC operation



HL-860



Base Plate



Base



Controller



Wind Cone

### Package 9: Elevated, Solar

- Solar powered, no AC power required.
- For fast, permanent and temporary installations.

Qty:	Item #:	Description:
8	AV70-G	Green, omni-directional, LED, solar elevated light
1	WCH-806-1-EX-12-5 Solar Power Supply	Externally lit (low voltage LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 12 VDC operation with Solar Power Supply



AV70



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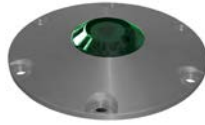
#### Package 4: Inset, Halogen, 8" Diameter

- Knockdown proof: low profile, used in high traffic areas
- Easy installation
- Easy maintenance
- Economical: uses off-the-shelf lamps

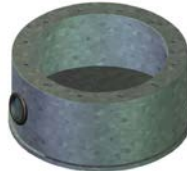
Qty:	Item #:	Description:
8	HL-292-G50 or HL-392-G50	Green omni-directional inset light: anodized aluminum construction, 8" diameter, 7.25" bolt circle, 50W, 120 VAC operation
8	BA-725-5-2	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	WCH-806-1-EX-120-N	Externally lit (halogen), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth), 120 VAC operation



HL-292



HL-392



Base



Wind Cone

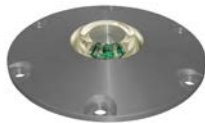
#### Package 5: Inset, LED, 8" Diameter

- Knockdown proof: low profile, used in high traffic areas
- Easy installation
- Low maintenance: LED life expectancy exceeds 50K hours
- Low operating costs: low power LED technology

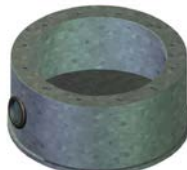
Qty:	Item #:	Description:
8	HL-292-GLP or HL-392-GLP	Green omni-directional LED (8 watt) inset light: anodized aluminum construction, 8" diameter, 7.25" bolt circle, 120V/240V operation
8	BA-725-5-2	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	WCH-806-1-EX-120-5	Externally lit (LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 120 VAC operation



HL-292



HL-392



Base



Wind Cone



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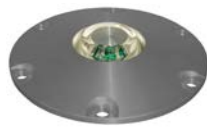
**Package 6: Inset, LED, Low Voltage, 8" Diam.**

- Safety: low voltage DC operation
- Knockdown proof: low profile, used in high traffic areas
- Easy installation
- Low maintenance: LED life expectancy exceeds 50K hours
- Low operating costs: low power LED technology

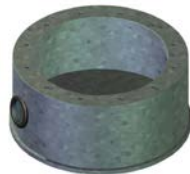
Qty:	Item #:	Description:
8	HL-292-GLV or HL-392-GLV	Green omni-directional LED (8 watt) inset light: anodized aluminum construction, 8" diameter, 7.25" bolt circle, 12 VDC operation
8	BA-725-5-2	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	HL-HSC-AC1-DC	Low Voltage System Controller with 12 VDC output, on/off switch, 150 watt power output capability (See Controller data sheet for ordering options: Solar, Timer, etc.)
1	WCH-806-1-EX-12-5	Externally lit (low voltage LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 12 VDC operation



HL-292



HL-392



Base



Controller



Wind Cone

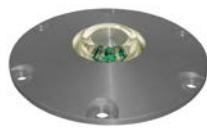
**Package 7: Inset, LED, Low Voltage, Dimming, 8" Diam.**

- Safety: low voltage DC operation
- Knockdown proof: low profile, used in high traffic areas
- Dim lights at night to reduce glare - select from three brightness levels
- Low maintenance: LED life expectancy exceeds 50K hours
- Low operating costs: low power LED technology

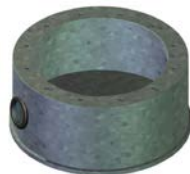
Qty:	Item #:	Description:
8	HL-292-GLVD or HL-392-GLVD	Green omni-directional dimming LED (8 watt) inset light: anodized aluminum construction, 8" diameter, 7.25" bolt circle, 12 VDC operation
8	BA-725-5-2	L-868AA base: 9" x 5" deep, 1" grm @ 0°, 180° with 2" drain, 7.25" BC
1	HL-HSC-AC1-DC-D	Low Voltage Dimming System Controller with 12 VDC output, on/off switch, dimming option, 150 watt power output capability (See Controller data sheet for ordering options: Solar, Timer, etc.)
1	WCH-806-1-EX-12-5	Externally lit (low voltage LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 12 VDC operation



HL-292



HL-392



Base



Controller



Wind Cone

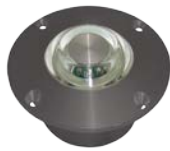


**Package 8: Inset, LED, Low Voltage, 6" Diam.\***

- Safety: low voltage DC operation
- 6" recessed, semi-flush mounted fixture
- Knockdown proof: low profile, used in high traffic areas
- Easy installation
- Low maintenance: LED life expectancy exceeds 50K hours
- Low operating costs: low power LED technology

Qty:	Item #:	Description:
8	HL-492-GLV	Green omni-directional LED (8 watt) inset light: anodized aluminum construction, 6" diameter, 5.25" bolt circle, 12 VDC operation
8	BA-525-6	Base: 6.5" x 6" deep, 1" grm @ 0°, 180°, 5.25" BC
1	HL-HSC-AC1-DC	Low Voltage System Controller with 12 VDC output, on/off switch, 150 watt power output capability (See Controller data sheet for ordering options: Solar, Timer, etc.)
1	WCH-806-1-EX-12-5	Externally lit (low voltage LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 12 VDC operation

\* The HL-492 is also available in 120 VAC LED and Low Voltage Dimming LED packages.



HL-492



Base



Controller



Wind Cone

**Package 10: Inset, LED, 6" Diam., "Drone Heliport"**

- 6" recessed, semi-flush mounted fixture
- Knockdown proof: low profile, used in high traffic areas
- Easy installation
- Low maintenance: LED life expectancy exceeds 50K hours
- Low operating costs: low power LED technology

Qty:	Item #:	Description:
4	HL-492-GLP	Green omni-directional LED (8 watt) inset light: anodized aluminum construction, 6" diameter, 5.25" bolt circle, 120V/240V operation
4	BA-525-6	Base: 6.5" x 6" deep, 1" grm @ 0°, 180°, 5.25" BC



HL-492



Base



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### Package 11: Surface Mount, LED, Stainless Steel

- Low-profile.
- Easy installation.
- Easy maintenance.
- Corrosive resistant stainless steel construction.

Qty:	Item #:	Description:
8	HL-590L-G	Green omni-directional LED (8 watt) surface mount light: stainless steel construction, 4.175" height, 120V/240V operation
1	WCH-806-1-EX-120-5	Externally lit (LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 120 VAC operation



HL-590L

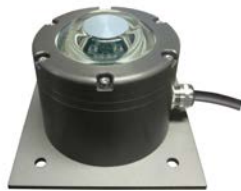


Wind Cone

### Package 12: Surface Mount, LED, Machined Aluminum

- Low-profile.
- Easy installation.
- Easy maintenance.
- Sturdy aluminum construction.

Qty:	Item #:	Description:
8	HL-592L-G	Green omni-directional LED (8 watt) surface mount light: machined aluminum construction, 4.175" height, 120V/240V operation
1	WCH-806-1-EX-120-5	Externally lit (LED), L-806 wind cone with orange nylon wind sock (8 ft. long by 18 in. diameter at the mouth) and L-810 LED obstruction light, 120 VAC operation



HL-592L



Wind Cone



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