SECTION 26 55 39

HELIPAD LIGHTING AND CONTROL SYSTEMS

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\*\* NOTE TO SPECIFIER \*\* Point Lighting Corporation; helipad lighting and control systems.  
This section is based on the products of Point Lighting Corporation, which is located at:  
61 W. Dudley Town Rd.  
Bloomfield, CT 06002  
Toll Free Tel: 800 900 0433  
Tel: 860 243 0600  
Fax: 860 243 0665  
Email: [request info (info@pointlighting.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Point+Lighting+Corporation&coid=47076&rep=&fax=860)  
Web: <https://www.pointlighting.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos47/arc47076.html) ] for additional information.  
Point Lighting Corporation was founded in 1993 by a group of airfield lighting professionals dedicated to the values of service, quality and expertise in the fields of aviation obstruction lighting and airfield lighting. Point Lighting Corporation offers visual navigational aids and technical advice to consultants, industrial plants, airports and contractors with quality products sold through electrical distributors and representatives. Point Lighting uniquely combines in one company years of experience in aviation lighting manufacturing, marketing and international sales.  
The company has special expertise in application engineering for heliport and offshore helideck lighting projects including hospitals, oil rigs and marine vessels; also for aviation obstruction lighting systems for cell towers, wind turbines, tall buildings and major industrial sites. Point Lighting Corporation also manufactures airfield lighting products and exports 60 percent of its sales. Point Lighting Corporation products are Made in USA and certified to FAA, ICAO, ATEX, IECEx, CE, CSA and numerous other applicable standards of safety and quality. Upon request, reference lists of Point heliport lighting, offshore helideck lighting and obstruction lighting projects will be furnished.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project. Typical systems listed below.

* + 1. Helipad Lighting and Control Systems:
       1. Concrete landing surface where the TLOF and the FATO are both lighted.
       2. Concrete landing surface on 120 VAC current.
       3. Concrete landing surface on 24 VDC solar power.
       4. Fabricated metal landing surface where the TLOF and FATO are the same perimeter.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 13 30 00 - Special Structures.
    3. Division 16 - Electrical; provisions for and connection to supplied equipment.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Bureau of Shipping (ABS).
    2. Canadian Aviation Association (CAA).
    3. Canadian Aviation Regulations (CARs):
       1. Standard 325 - Heliports.
       2. Standard 325.31 - Visual Aids for Air Navigation.
    4. Civil Aviation Authority (CAP), UK: CAP 437 Standard for offshore helicopter landing areas.
    5. Civil Aviation Safety Authority (CASA), Australia: MOS Part 139, Section 9.6 Illuminated Wind Direction Indicator.
    6. CSA Group (CSA):
       1. CSA C22.2 No. 14 - Industrial Control Equipment.
       2. CSA C22.2 No. 94 - Special Purpose Enclosures Industrial Products.
       3. CSA C22.2 No. 137 - Electric luminaires for use in hazardous locations.
       4. CSA C22.2 No. 250.0 - Luminaires.
    7. Department of Defense (DOD), US:
       1. Military Standard MIL-C-25050 - Colors, Aeronautical Lights And Lighting Equipment, General Specification for.
       2. Military Standard MIL-DTL-5541 - Military Specification, Chemical Conversion Coatings on Aluminum and Aluminum Alloys.
       3. Military Standard MIL-PRF-24712A - Coatings, Powder.
       4. Military Standard MIL-STD-810F - Environmental Engineering Considerations and Laboratory Tests.
       5. Unified Facilities Criteria - UFC 3-535-01, Visual Air Navigation Systems.
    8. Federal Aviation Administration (FAA), US:
       1. AC 150/5390-2B - Heliport Design.
       2. AC 150/5390-2C - Heliport Design.
       3. AC 150/5345-27E - Specification For Wind Cone Assemblies.
       4. AC 150/5345-43H - Specification for Obstruction Lighting Equipment.
    9. General Services Administration (GSA), US:
       1. Federal Specification TT-C-490E - Chemical Conversion Coatings and Pretreatments for Ferrous Surfaces (Base For Organic Coatings).
       2. Federal Standard SAE AMS-STD-595 - Colors Used in Government Procurement.
    10. International Civil Aviation Organization (ICAO): ICAO Annex 14 - Aerodromes.
    11. International Electrotechnical Commission (IEC):
        1. EN 60529 - Degrees of protection provided by enclosures (IP Code).
        2. EN 61643 - Low-Voltage Surge Protective Devices.
        3. EN 62561 - Lightning protection system components
    12. International Maritime Organization (IMO): MODU Code - Code for the construction and equipment of mobile offshore drilling units
    13. International Organization for Standardization (ISO):
        1. ISO 3506 - Fasteners Package.
        2. ISO 9001 - Quality Management Systems.
    14. National Electrical Manufacturers Association (NEMA), US.
    15. Office of the Chief of Engineers, United States Army: TM 5-811-5 - Army Aviation Lighting.
    16. UL LLC (UL):
        1. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations.
        2. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations.
        3. UL 508A - Standard for Industrial Control Panels.
        4. UL 844 - Standard for Luminaires for Use in Hazardous (Classified) Locations.
        5. UL 1598 - Luminaires.
        6. UL 1598A - Standard for Supplemental Requirements for Luminaires for Installation on Marine Vessels.
  1. DEFINITIONS
     1. FATO: Final approach and takeoff.
     2. HAPI: Helicopter approach path indicator.
     3. MODU: Mobile offshore drilling units.
     4. TLOF: Touchdown and liftoff area.
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used; including but not limited to anti-corrosion paint specifications
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Typical installation methods.
     3. Shop Drawings: Including but not limited to details of materials, construction, finish, and relationship with adjacent construction.
  3. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Registered ISO 9001 company specializing in manufacturing products specified in this section with a minimum five years documented experience.
     2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
     3. Source Limitations: Each product type from single manufacturer to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
       1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
       2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
       3. Retain mock-up during construction as standard for comparison with completed work.
       4. Do not alter or remove mock-up until work is completed or removal is authorized.
  1. PRE-INSTALLATION CONFERENCE
     1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Store and handle in compliance with manufacturer's instructions and recommendations.
     2. Protect from damage due to weather, excessive temperature, and construction operations.
  3. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
  4. WARRANTY
     1. Manufacturer's Standard Limited Warranty: Against defects in materials and workmanship.
        1. Warranty Period: 3 years for products operating 24 hours per day.
        2. Warranty Period: 6 years.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Point Lighting Corporation, which is located at: 61 W. Dudley Town Rd.; Bloomfield, CT 06002; Toll Free Tel: 800 900 0433; Tel: 860 243 0600; Fax: 860 243 0665; Email: [request info (info@pointlighting.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Point+Lighting+Corporation&coid=47076&rep=&fax=860); Web: <https://www.pointlighting.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HELIPAD LIGHTING AND CONTROL SYSTEM (USA Paved Surface Layout)
     1. Description of Application for Helipad Lighting and Control Systems: Concrete landing surface, TLOF and FATO are both lighted.
        1. Configurations and Quantities: As scheduled and indicated on Drawings.
     2. Inset FATO Perimeter Lights: POINTSPEC Series Point Rollover LED Lights, Model PRL-97004-1C-G-PLS-NC-VB as manufactured by Point Lighting Corporation.
        1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
        2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
        3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
           1. FAA AC 150/5390-2C Heliport Design.
           2. Canadian Aviation Regulations Standard 325.
           3. ICAO Annex 14, Volume II.
           4. UK CAA CAP 437, Chapter 4 and Appendix C.
        4. Suitability for Use in Wet Locations:
           1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
           2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
        5. Marine Treatment: Bezel finished in standard, green color.
           1. Cleaning: Federal Specification TT-C-490 method III.
           2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
           3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.6.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Green: Type G.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Elevated FATO Perimeter Lights: POINTSPEC Series Point Elevated LED Lights, Model PEL-57005-1C-G-PLS-NC-VB as manufactured by Point Lighting Corporation.
       1. Application: Used for heliports to mark the FATO perimeter and mark the preferred direction of helicopter approach.
       2. Construction: Upper assembly mounts on pipe extension into die-cast aluminum FAA certified breakable coupling.
       3. Serviceability: Optical subassembly is permanently sealed, not serviceable.

\*\* NOTE TO SPECIFIER \*\* Delete height options not required.

* + - 1. Height: 10.8 inches (274 mm).
      2. Height: 14 inches (356 mm).
      3. Height: 24 inches (610 mm).
      4. Height: 30 inches (762 mm).
      5. Height: As scheduled and indicated on Drawings.
      6. Design Compliance: American Bureau of Shipping (ABS) type approved product.
         1. FAA AC 150/5390-2B Heliport Design.
         2. ICAO Annex 14, Volume II.
         3. UK CAA CAP 437, Chapter 4, paragraph 3.1.
      7. US Military Standard Testing: Passed; exceeding NEMA 4X and IP 66 requirements.
         1. Temperature: MIL-STD-810F, Method 501.3, Procedure II.

Constant High: 130 degrees F (55 degrees C).

Constant Low: Negative 67 degrees F (negative 55 degrees C).

* + - * 1. Wind-Blown Rain: US MIL-STD-810F, Method 506.3, Procedure I.
        2. Humidity: MIL-STD-810F, Method 507.3, Procedure I.
        3. Finish, Salt Fog: MIL-STD-810F, Method 509.4, Procedure I, paragraph 4.5.2.
      1. Suitability for Use in Wet Locations:
         1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66, NEMA 4X.
         2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
      2. Marine Treatment: Housing finished with standard yellow color.
         1. Cleaning: Federal Specification TT-C-490 method III.
         2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
         3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Photometric Performance: Meets or exceeds ICAO Annex 14, Volume II, Figure 5-9.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.5.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Green: Type G.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply: Sealed, watertight in fixture head assembly.
         2. Power Supply Boards: Include short circuit and open circuit protection.
         3. Line Surge Protector Type: Metal oxide varistors (MOVs).
         4. LED Boards: Treated with protective dielectric conformal coating.
         5. Controllers: Incorporate IEC approved surge suppressors and current limiting circuit breakers on each load output.
      2. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs; includes option for 4-way hubs.
      3. Baseplate: PL40301 baseplate powdercoat painted to match light fixture; affixed to base by three stainless steel screws.
      4. Outer Lens: Clear glass, smooth and rounded.
      5. Housing: Cast aluminum, secured by a gasket and permanently sealed.
    1. Surface Floodlights: Point Surface LED Floodlights Model PSF-53063-6-T-PLS-V as manufactured by Point Lighting Corporation.
       1. Application: Provides high intensity light ' washing' the landing surface to facilitate improved conspicuity and depth perception for pilots; suitable for hazardous areas.
       2. Adjustability:
          1. Beam Angle: Vertically adjustable to 15 degrees above and below level.
          2. Height: L-brackets adjust overall height from 2.0 to 2.6 inches (51 to 66 mm).
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50E, UL 844, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       5. Brightness: Continuous variability from 10 to 100 percent; unrelated to perimeter light.
       6. Power Consumption:
          1. Voltage: 277 VAC.
          2. Frequency: 50/60 Hz.
          3. Watts: 32.2.
          4. Volt-Amps: 34.1.
          5. Operating Range: 96 to 305 VAC input produces a controlled, stabilized constant current output to the LED board.
       7. Light Output:
          1. Intensity: 4,725 lumens.
          2. Peak: 14,175 candelas.
       8. Mounting: Type T, trunnion mount.
       9. Base: Type PLS, shallow base and gasket.
       10. Finish: Black anodized.
       11. Visor: Type V, required, projects 6 inches (152 mm) horizontally over LEDs.
       12. Wiring: Cable loop exits rear of floodlight.
       13. Castings: Aluminum, heat treated; less than 0.2 percent copper.
       14. External Hardware: Type 316 stainless steel, ISO 3506 Grade A4.
    2. Inset TLOF Perimeter Lights: POINTSPEC Series Point Rollover LED Lights Model PRL-97004-1C-G-PLS-NC-VB as manufactured by Point Lighting Corporation.
       1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
       2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design.
          2. Canadian Aviation Regulations Standard 325.
          3. ICAO Annex 14, Volume II.
          4. UK CAA CAP 437, Chapter 4 and Appendix C.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
       5. Marine Treatment: Bezel finished in standard, green color.
          1. Cleaning: Federal Specification TT-C-490 method III.
          2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
          3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.6.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Green: Type G.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Ground-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8071L-1-ON-HBA-B as manufactured by Point Lighting Corporation
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 807, rigid.
       4. Windsock: Size 1, 8 ft (2438 mm) length.
          1. Frame Diameter: 18 inches (457 mm).
          2. Color: Type ON, international aviation orange nylon, factory painted.
          3. Seams: Triple-sewn.
          4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
          5. Drainage: Two or more brass grommets to prevent water accumulation.
          6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
       5. Power Consumption: Type 1, universal AC voltage.
          1. Voltage: 120 VAC.
          2. Watts: 39.2.
          3. Volt-Amps: 43.2.
          4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
       6. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
       7. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
       8. Lighting Assembly: Type B.
          1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly:
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket.
      2. Pole Assembly: Type HBA, hinged base, round, tapered aluminum pole.
         1. Lowering: Pole fitted with an eyebolt for attachment of rope or chain.
         2. Vibration Damper: Inside pole, prevents harmonic resonance failure
         3. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         4. Collar: Machined stainless steel, installed at top of hinged base pole to prevent tilting of upper assembly due to wear.
         5. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based high gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Supplied with each unit from factory.
    1. Roof-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8061L-1-ON-FF-B-G-SM-T as manufactured by Point Lighting Corporation.
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 806, low height.
          1. Floor Flange: Type FF, PL10412A Floor Flange.

Finish: Orange powder coat painted.

Diameter: 8 inches (203 mm).

Mounting Holes: Four holes per flange, 0.56 inch (14 mm) diameter, 6 inches (152 mm) diameter bolt circle.

Center Hole: Threaded to accept coupling.

Wiring Compatibility: Through hole for wiring to enter the pole.

* + - * 1. Coupling: Type G, rigid machined coupling provided with unit in lieu of standard frangible coupling.
        2. Stand Mount: Type SM, pre-drilled standoff bracket with junction box and cable fitting.
      1. Windsock: Size 1, 8 ft (2438 mm) length.
         1. Frame Diameter: 18 inches (457 mm).
         2. Color: Type ON, international aviation orange nylon, factory painted.
         3. Seams: Triple-sewn.
         4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
         5. Drainage: Two or more brass grommets to prevent water accumulation.
         6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
      2. Power Consumption: Type 1, universal AC voltage.
         1. Voltage: 120 VAC.
         2. Watts: 39.2.
         3. Volt-Amps: 43.2.
         4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
      3. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
      4. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
      5. Lighting Assembly: Type B.
         1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly: Type T, stainless steel tether to pad.
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket; 36 inches (914 mm) horizontal extension.
      2. Pole Assembly:
         1. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         2. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Not supplied with each unit from factory.
    1. Approach Path Indicators: Point Heliport LED Lights Model HAPI-89001-1-F-PLS and System Programmer PL11248-HAPI as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual slope guidance; installed on the side opposite the approach, facing across the landing area.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the HAPI system; plugs into rear of HAPI unit.
       3. Aiming: If the HAPI system is installed with a VAGS system, both systems should be aimed at the same vertical angle; HAPI angle must be set so the transition line to flashing red allows the aircraft to clear any obstacles in the approach path.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design, paragraphs 219, 318 and 418.
          2. ICAO Annex 14, Volume II, Chapter 5.
          3. UK CAA CAP 437, Chapter 4 and Appendix C.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Flashing Green: Too high, above slope.
          2. Steady Green: On slope.
          3. Steady Red: Slightly below slope.
          4. Flashing Red: Too low, below slope.
          5. Alarms: Flasher failure, LED array failure and alignment.
          6. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       12. Leg Assembly: Beveled washers for positive mechanical contact.
    2. Vertical Alignment Guidance Systems: Point Heliport LED Lights Model VAGS-89021-1-F-PLS and System Programmer Model PL11248-VAGS as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual horizontal alignment; two units are installed facing the approach and arranged for left and right signals.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the VAGS system; plugs into rear of VAGS unit.
       3. Aiming: If the VAGS system is installed with a HAPI system, both systems should be aimed at the same vertical angle.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: ICAO Annex 14, Volume II, Chapter 5.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Steady White: On azimuth.
          2. Steady Red: Off azimuth.
          3. Alarms: LED array failure and alignment.
          4. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current for each of two units in system.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Light Emitting Diodes: Board mounted.
       12. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       13. Leg Assembly: Beveled washers for positive mechanical contact.
    3. Heliport Beacons, 3-Color: Point Heliport LED Beacons Model PHB-37002-WGY-1-H as manufactured by Point Lighting Corporation.
       1. Application: Used at privately owned heliports where an optional visual aid is desired to enhance marking the heliport site location as noted in FAA Advisory Circular 150/5390-2B, paragraph 210.f; no plastics used in structural construction of beacon.
       2. Serviceability: Beacon is permanently sealed.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43H.
          2. FAA Advisory Circular 150/5390-2B, para. 210.f, 310.h, 410.f.
          3. ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5.
          4. ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.8 to 14.
          5. Army TM 5-811-5, para. 7-5.b. Station Identification.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A, IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 250.0 Canada.
       5. System Controls: Type H, 3-color flash control.
          1. Colors: Type WGY, beacon flashes alternately white (clear), yellow and green.
          2. Flash Rate: FAA compliant, 36 flashes per minute; 12 flashes per minute for each color.
       6. Light Emitting Diodes:
          1. Intensity: 2,000 candelas.
          2. Rating: 100,000 hours average life.
       7. Power Consumption: Type 1, AC current.
          1. Frequency: 50/60 Hz.
          2. Wattage:

Peak: 51.1 watts.

Average: 30.0 watts.

* + - * 1. Volt-Amps: 74.
        2. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
      1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
      2. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) SOW 600-volt cable loop and gland from factory.
      3. Temperature Rating: Negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Finish on Exterior Metal Components: Aviation yellow that meets US Military Standard Salt Fog Test conducted per MIL-STD-810F, Method 509.4, Procedure I.
      5. Mounting: 4 holes on 10.5 inches (267 mm) circle.
      6. Castings: Aluminum.
      7. Lens: Clear soda-lime glass.
      8. Hardware: Type 316L stainless steel.
    1. Lighting System Controllers: Point Heliport Lighting Controller with Touchscreen Advanced Model PHC-66002-AC-BC-HC-HWC-VC as manufactured by Point Lighting Corporation.
       1. Application: Provides manual and automatic operation of the heliport lighting system.
       2. Design Compliance: UL 508A and CSA C22.2 No. 14.
       3. Transient Event Monitoring: Via DIN-rail mounted, IEC/EN 62561-6 compliant transient event monitor with LCD screen.
       4. Brightness Control:
          1. Floodlights: Type BC.
          2. HAPI Lights: Type HC, for one approach light; on-off, 3-step brightness control and alarm indication.
          3. VAGS-SAGA Lights: Type VC, for one approach light; on-off, 3-step brightness control and alarm indication.
       5. Web Control: Type HWC, direct control of lighting system by mobile device or computer workstation.
          1. Password Protection: Enables user level security to protect unauthorized system activation and configuration settings changes.
          2. Connection: Ethernet cable not included with unit.
       6. Touchscreen: High brightness, color TFT touch panel display with LED backlighting that controls all system operations.
          1. Compliance: IP65, NEMA 4, UL Type 4x rated.
          2. Brightness: Minimum backlight brightness of 450 cd/m2.
          3. Rated Life: 30,000 hours.
       7. Enclosure:
          1. Compliance: Certified to IEC 529, CSA, KEMA and UL 508A Type 4X and 12, IP66 watertight and dust tight.
          2. Materials: Fiberglass reinforced polyester.
          3. Color: Gray, RAL 7036.
          4. Door Hinge: Stainless steel piano hinge and seamless gasket.
          5. Internal Components: Panel mounted.
          6. The enclosure shall be.
       8. Power Consumption: Type AC, AC current.
          1. Frequency: 50/60 Hz.
          2. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       9. Electrical Protection: Breakers are resettable; status is color coded
          1. Controller and Lighting Circuits: Protected from transient voltage spikes by a DIN-rail mounted 50kA interrupting IEC 61643-1 approved surge suppressor.
          2. Outputs: Each of six load output circuits are protected by a current limiting 15-amp circuit breaker.
       10. Wiring: US National Electric Code compliant internal wiring and component spacing, all components prewired to IEC terminal blocks.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HELIPAD LIGHTING AND CONTROL SYSTEM (Canada Paved Surface Layout)
     1. Description of Application for Helipad Lighting and Control Systems: Concrete landing surface, 120 VAC current.
        1. Configurations and Quantities: As scheduled and indicated on Drawings.
     2. FATO Perimeter Lights: POINTSPEC Series Point Rollover LED Lights, Model PRL-97004-1C-W-PLS-NC-VB as manufactured by Point Lighting Corporation.
        1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
        2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
        3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
           1. FAA AC 150/5390-2C Heliport Design.
           2. Canadian Aviation Regulations Standard 325.
           3. ICAO Annex 14, Volume II.
           4. UK CAA CAP 437, Chapter 4 and Appendix C.
        4. Suitability for Use in Wet Locations:
           1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
           2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
        5. Marine Treatment: Bezel finished in standard, green color.
           1. Cleaning: Federal Specification TT-C-490 method III.
           2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
           3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.6.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

White: Type W.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Surface Floodlights: Point Surface LED Floodlights Model PSF-53063-6-T-PLS-V as manufactured by Point Lighting Corporation.
       1. Application: Provides high intensity light ' washing' the landing surface to facilitate improved conspicuity and depth perception for pilots; suitable for hazardous areas.
       2. Adjustability:
          1. Beam Angle: Vertically adjustable to 15 degrees above and below level.
          2. Height: L-brackets adjust overall height from 2.0 to 2.6 inches (51 to 66 mm).
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50E, UL 844, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       5. Brightness: Continuous variability from 10 to 100 percent; unrelated to perimeter light.
       6. Power Consumption:
          1. Voltage: 277 VAC.
          2. Frequency: 50/60 Hz.
          3. Watts: 32.2.
          4. Volt-Amps: 34.1.
          5. Operating Range: 96 to 305 VAC input produces a controlled, stabilized constant current output to the LED board.
       7. Light Output:
          1. Intensity: 4,725 lumens.
          2. Peak: 14,175 candelas.
       8. Mounting: Type T, trunnion mount.
       9. Base: Type PLS, shallow base and gasket.
       10. Finish: Black anodized.
       11. Visor: Type V, required, projects 6 inches (152 mm) horizontally over LEDs.
       12. Wiring: Cable loop exits rear of floodlight.
       13. Castings: Aluminum, heat treated; less than 0.2 percent copper.
       14. External Hardware: Type 316 stainless steel, ISO 3506 Grade A4.
    2. Inset TLOF Perimeter Lights: POINTSPEC Series Point Rollover LED Lights Model PRL-97004-1C-Y-PLS-NC-VB as manufactured by Point Lighting Corporation.
       1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
       2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design.
          2. Canadian Aviation Regulations Standard 325.
          3. ICAO Annex 14, Volume II.
          4. UK CAA CAP 437, Chapter 4 and Appendix C.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
       5. Marine Treatment: Bezel finished in standard, green color.
          1. Cleaning: Federal Specification TT-C-490 method III.
          2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
          3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.6.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Yellow: Type Y.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Ground-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8075L-1-ON-HBA-B-JB as manufactured by Point Lighting Corporation
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 807, rigid.
       4. Junction Box: Type JB, type PLB with blank coverplate.
       5. Windsock: Size 5, 8 ft (2438 mm) length.
          1. Frame Diameter: 24 inches (610 mm).
          2. Color: Type ON, international aviation orange nylon, factory painted.
          3. Seams: Triple-sewn.
          4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
          5. Drainage: Two or more brass grommets to prevent water accumulation.
          6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
       6. Power Consumption: Type 1, universal AC voltage.
          1. Voltage: 120 VAC.
          2. Watts: 39.2.
          3. Volt-Amps: 43.2.
          4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
       7. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
       8. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
       9. Lighting Assembly: Type B.
          1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly:
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket.
      2. Pole Assembly: Type HBA, hinged base, round, tapered aluminum pole.
         1. Lowering: Pole fitted with an eyebolt for attachment of rope or chain.
         2. Vibration Damper: Inside pole, prevents harmonic resonance failure
         3. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         4. Collar: Machined stainless steel, installed at top of hinged base pole to prevent tilting of upper assembly due to wear.
         5. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based high gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Supplied with each unit from factory.
    1. Roof-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8065L-1-ON-FF-B-G-SM-T as manufactured by Point Lighting Corporation.
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 806, low height.
          1. Floor Flange: Type FF, PL10412A Floor Flange.

Finish: Orange powder coat painted.

Diameter: 8 inches (203 mm).

Mounting Holes: Four holes per flange, 0.56 inch (14 mm) diameter, 6 inches (152 mm) diameter bolt circle.

Center Hole: Threaded to accept coupling.

Wiring Compatibility: Through hole for wiring to enter the pole.

* + - * 1. Coupling: Type G, rigid machined coupling provided with unit in lieu of standard frangible coupling.
        2. Stand Mount: Type SM, pre-drilled standoff bracket with junction box and cable fitting.
      1. Windsock: Size 5, 8 ft (2438 mm) length.
         1. Frame Diameter: 24 inches (610 mm).
         2. Color: Type ON, international aviation orange nylon, factory painted.
         3. Seams: Triple-sewn.
         4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
         5. Drainage: Two or more brass grommets to prevent water accumulation.
         6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
      2. Power Consumption: Type 1, universal AC voltage.
         1. Voltage: 120 VAC.
         2. Watts: 39.2.
         3. Volt-Amps: 43.2.
         4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
      3. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
      4. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
      5. Lighting Assembly: Type B.
         1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly: Type T, stainless steel tether to pad.
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket; 36 inches (914 mm) horizontal extension.
      2. Pole Assembly:
         1. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         2. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Not supplied with each unit from factory.
    1. Approach Path Indicators: Point Heliport LED Lights Model HAPI-89001-1-F-PLS and System Programmer PL11248-HAPI as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual slope guidance; installed on the side opposite the approach, facing across the landing area.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the HAPI system; plugs into rear of HAPI unit.
       3. Aiming: If the HAPI system is installed with a VAGS system, both systems should be aimed at the same vertical angle; HAPI angle must be set so the transition line to flashing red allows the aircraft to clear any obstacles in the approach path.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design, paragraphs 219, 318 and 418.
          2. ICAO Annex 14, Volume II, Chapter 5.
          3. UK CAA CAP 437, Chapter 4 and Appendix C.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Flashing Green: Too high, above slope.
          2. Steady Green: On slope.
          3. Steady Red: Slightly below slope.
          4. Flashing Red: Too low, below slope.
          5. Alarms: Flasher failure, LED array failure and alignment.
          6. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       12. Leg Assembly: Beveled washers for positive mechanical contact.
    2. Vertical Alignment Guidance Systems: Point Heliport LED Lights Model VAGS-89021-1-F-PLS and System Programmer Model PL11248-VAGS as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual horizontal alignment; two units are installed facing the approach and arranged for left and right signals.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the VAGS system; plugs into rear of VAGS unit.
       3. Aiming: If the VAGS system is installed with a HAPI system, both systems should be aimed at the same vertical angle.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: ICAO Annex 14, Volume II, Chapter 5.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Steady White: On azimuth.
          2. Steady Red: Off azimuth.
          3. Alarms: LED array failure and alignment.
          4. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current for each of two units in system.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Light Emitting Diodes: Board mounted.
       12. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       13. Leg Assembly: Beveled washers for positive mechanical contact.
    3. Heliport Identification Beacons: Point Heliport LED Beacons Model PHB-37002- W-1-MA-C066-NC as manufactured by Point Lighting Corporation.
       1. Application: Used at privately owned heliports where an optional visual aid is desired to enhance marking the heliport site location as noted in FAA Advisory Circular 150/5390-2B, paragraph 210.f; no plastics used in structural construction of beacon.
       2. Serviceability: Beacon is permanently sealed.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43H.
          2. FAA Advisory Circular 150/5390-2B, para. 210.f, 310.h, 410.f.
          3. ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5.
          4. ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.8 to 14.
          5. Army TM 5-811-5, para. 7-5.b. Station Identification.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A, IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 250.0 Canada.
       5. System Controls: Separate control unit in NEMA 4X, IP66 wall-mounted enclosure.
          1. Brightness: Type C066, 3 step brightness control; 100, 60 and 30 percent.
          2. Signaling: Type MA, Morse code with alarms.

Compliance: ICAO Annex 14, Volume II, paragraph 5.3.2 and Transport Canada CAR 325.33.

Description: A line powered alarm line for LED array failure alarm and flasher failure alarm.

* + - 1. Light Emitting Diodes: Type NC, night vision goggles compatible.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

White: Type W, 2,500 candelas intensity.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

* + - 1. Power Consumption: Type 1, AC current.
         1. Frequency: 50/60 Hz.
         2. Average Wattage: 36.0.
         3. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
      2. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
      3. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) SOW 600-volt cable loop and gland from factory.
      4. Temperature Rating: Negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      5. Finish on Exterior Metal Components: Aviation yellow that meets US Military Standard Salt Fog Test conducted per MIL-STD-810F, Method 509.4, Procedure I.
      6. Mounting: 4 holes on 10.5 inches (267 mm) circle.
      7. Castings: Aluminum.
      8. Lens: Clear soda-lime glass.
      9. Hardware: Type 316L stainless steel.
    1. Lighting System Controllers: Point Heliport Lighting Controller with Touchscreen Advanced Model PHC-66002-AC-BC-HC-HWC-VC as manufactured by Point Lighting Corporation.
       1. Application: Provides manual and automatic operation of the heliport lighting system.
       2. Design Compliance: UL 508A and CSA C22.2 No. 14.
       3. Transient Event Monitoring: Via DIN-rail mounted, IEC/EN 62561-6 compliant transient event monitor with LCD screen.
       4. Brightness Control:
          1. Floodlights: Type BC.
          2. HAPI Lights: Type HC, for one approach light; on-off, 3-step brightness control and alarm indication.
          3. VAGS-SAGA Lights: Type VC, for one approach light; on-off, 3-step brightness control and alarm indication.
       5. Web Control: Type HWC, direct control of lighting system by mobile device or computer workstation.
          1. Password Protection: Enables user level security to protect unauthorized system activation and configuration settings changes.
          2. Connection: Ethernet cable not included with unit.
       6. Touchscreen: High brightness, color TFT touch panel display with LED backlighting that controls all system operations.
          1. Compliance: IP65, NEMA 4, UL Type 4x rated.
          2. Brightness: Minimum backlight brightness of 450 cd/m2.
          3. Rated Life: 30,000 hours.
       7. Enclosure:
          1. Compliance: Certified to IEC 529, CSA, KEMA and UL 508A Type 4X and 12, IP66 watertight and dust tight.
          2. Materials: Fiberglass reinforced polyester.
          3. Color: Gray, RAL 7036.
          4. Door Hinge: Stainless steel piano hinge and seamless gasket.
          5. Internal Components: Panel mounted.
          6. The enclosure shall be.
       8. Power Consumption: Type AC, AC current.
          1. Frequency: 50/60 Hz.
          2. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       9. Electrical Protection: Breakers are resettable; status is color coded
          1. Controller and Lighting Circuits: Protected from transient voltage spikes by a DIN-rail mounted 50kA interrupting IEC 61643-1 approved surge suppressor.
          2. Outputs: Each of six load output circuits are protected by a current limiting 15-amp circuit breaker.
       10. Wiring: US National Electric Code compliant internal wiring and component spacing, all components prewired to IEC terminal blocks.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HELIPAD LIGHTING AND CONTROL SYSTEM (Canada Solar Layout)
     1. Helipad Lighting and Control System Description: Concrete landing surface; 24 VDC current.
     2. FATO Perimeter Lights: POINTSPEC Series Point Rollover LED Lights, Model PRL-97004-4C-W-PLS-NC-VB as manufactured by Point Lighting Corporation.
        1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
        2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
        3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
           1. FAA AC 150/5390-2C Heliport Design.
           2. Canadian Aviation Regulations Standard 325.
           3. ICAO Annex 14, Volume II.
           4. UK CAA CAP 437, Chapter 4 and Appendix C.
        4. Suitability for Use in Wet Locations:
           1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
           2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
        5. Marine Treatment: Bezel finished in standard, green color.
           1. Cleaning: Federal Specification TT-C-490 method III.
           2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
           3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 4.
         1. Voltage: 24 VDC.
         2. Watts: 3.5.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

White: Type W.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Surface Floodlights: Point Surface LED Floodlights Model PSF-53062-3-T-PLS-V as manufactured by Point Lighting Corporation.
       1. Application: Provides medium intensity light ' washing' the landing surface to facilitate improved conspicuity and depth perception for pilots; suitable for hazardous areas.
       2. Adjustability:
          1. Beam Angle: Vertically adjustable to 15 degrees above and below level.
          2. Height: L-brackets adjust overall height from 2.0 to 2.6 inches (51 to 66 mm).
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50E, UL 844, UL 1598 and UL 1598A at negative 40 to positive 122 degrees F (negative 40 to positive 50 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       5. Power Consumption: DC current.
          1. Watts: 21.3.
          2. Volt-Amps: 34.1.
          3. Operating Range: 10.8 to 26.4 VDC input produces a controlled, stabilized constant current output to the LED board.
       6. Light Output:
          1. Intensity: 2,052 lumens.
          2. Peak: 6,997 candelas.
       7. Mounting: Type T, trunnion mount.
       8. Base: Type PLS, shallow base and gasket.
       9. Finish: Black anodized.
       10. Visor: Type V, required; projects 6 inches (152 mm) horizontally over LEDs.
       11. Wiring: Cable loop exits rear of floodlight.
       12. Castings: Aluminum, heat treated; less than 0.2 percent copper.
       13. External Hardware: Type 316 stainless steel, ISO 3506 Grade A4.
    2. TLOF Perimeter Lights: POINTSPEC Series Point Rollover LED Lights Model PRL-97004-4C-Y-PLS-NC-VB as manufactured by Point Lighting Corporation.
       1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
       2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design.
          2. Canadian Aviation Regulations Standard 325.
          3. ICAO Annex 14, Volume II.
          4. UK CAA CAP 437, Chapter 4 and Appendix C.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
       5. Marine Treatment: Bezel finished in standard, green color.
          1. Cleaning: Federal Specification TT-C-490 method III.
          2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
          3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type PLS, shallow base and gasket, internal ground lug in base.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 4.
         1. Voltage: 24 VDC.
         2. Watts: 3.5.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Yellow: Type Y.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware:
         1. Materials: Type 316 stainless steel, ISO 3506 Grade A4.
         2. Recessed: Does not protrude above fixture surface.
      8. Installation Accessories: Provided with each unit.
         1. Disposable Plywood Cover: To set base at proper depth for recessing the light.
         2. Spacer Rings: PL10701-X, for adjusting height of light to match grade.
    1. Ground-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8075L-1-ON-HBA-B-JB as manufactured by Point Lighting Corporation
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 807, rigid.
       4. Junction Box: Type JB, type PLB with blank coverplate.
       5. Windsock: Size 5, 8 ft (2438 mm) length.
          1. Frame Diameter: 24 inches (610 mm).
          2. Color: Type ON, international aviation orange nylon, factory painted.
          3. Seams: Triple-sewn.
          4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
          5. Drainage: Two or more brass grommets to prevent water accumulation.
          6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
       6. Power Consumption: Type 1, universal AC voltage.
          1. Voltage: 120 VAC.
          2. Watts: 39.2.
          3. Volt-Amps: 43.2.
          4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
       7. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
       8. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
       9. Lighting Assembly: Type B.
          1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly:
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket.
      2. Pole Assembly: Type HBA, hinged base, round, tapered aluminum pole.
         1. Lowering: Pole fitted with an eyebolt for attachment of rope or chain.
         2. Vibration Damper: Inside pole, prevents harmonic resonance failure
         3. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         4. Collar: Machined stainless steel, installed at top of hinged base pole to prevent tilting of upper assembly due to wear.
         5. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based high gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Supplied with each unit from factory.
    1. Roof-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8065L-1-ON-FF-B-G-SM-T as manufactured by Point Lighting Corporation.
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 806, low height.
          1. Floor Flange: Type FF, PL10412A Floor Flange.

Finish: Orange powder coat painted.

Diameter: 8 inches (203 mm).

Mounting Holes: Four holes per flange, 0.56 inch (14 mm) diameter, 6 inches (152 mm) diameter bolt circle.

Center Hole: Threaded to accept coupling.

Wiring Compatibility: Through hole for wiring to enter the pole.

* + - * 1. Coupling: Type G, rigid machined coupling provided with unit in lieu of standard frangible coupling.
        2. Stand Mount: Type SM, pre-drilled standoff bracket with junction box and cable fitting.
      1. Windsock: Size 5, 8 ft (2438 mm) length.
         1. Frame Diameter: 24 inches (610 mm).
         2. Color: Type ON, international aviation orange nylon, factory painted.
         3. Seams: Triple-sewn.
         4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
         5. Drainage: Two or more brass grommets to prevent water accumulation.
         6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
      2. Power Consumption: Type 1, universal AC voltage.
         1. Voltage: 120 VAC.
         2. Watts: 39.2.
         3. Volt-Amps: 43.2.
         4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
      3. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
      4. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
      5. Lighting Assembly: Type B.
         1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly: Type T, stainless steel tether to pad.
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Rigid lightweight aluminum frame basket; 36 inches (914 mm) horizontal extension.
      2. Pole Assembly:
         1. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         2. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Not supplied with each unit from factory.
    1. Approach Path Indicators: Point Heliport LED Lights Model HAPI-89001-3-F-PLS and System Programmer PL11248-HAPI as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual slope guidance; installed on the side opposite the approach, facing across the landing area.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the HAPI system; plugs into rear of HAPI unit.
       3. Aiming: If the HAPI system is installed with a VAGS system, both systems should be aimed at the same vertical angle; HAPI angle must be set so the transition line to flashing red allows the aircraft to clear any obstacles in the approach path.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design, paragraphs 219, 318 and 418.
          2. ICAO Annex 14, Volume II, Chapter 5.
          3. UK CAA CAP 437, Chapter 4 and Appendix C.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Flashing Green: Too high, above slope.
          2. Steady Green: On slope.
          3. Steady Red: Slightly below slope.
          4. Flashing Red: Too low, below slope.
          5. Alarms: Flasher failure, LED array failure and alignment.
          6. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 3, 24 VDC current.
       11. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       12. Leg Assembly: Beveled washers for positive mechanical contact.
    2. Vertical Alignment Guidance Systems: Point Heliport LED Lights Model VAGS-89021-1-F-PLS and System Programmer Model PL11248-VAGS as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual horizontal alignment; two units are installed facing the approach and arranged for left and right signals.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the VAGS system; plugs into rear of VAGS unit.
       3. Aiming: If the VAGS system is installed with a HAPI system, both systems should be aimed at the same vertical angle.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: ICAO Annex 14, Volume II, Chapter 5.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Mounting:
          1. Base: Type PLS, PLS-40304 shallow wiring junction box.
          2. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall.
       9. Signals:
          1. Steady White: On azimuth.
          2. Steady Red: Off azimuth.
          3. Alarms: LED array failure and alignment.
          4. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current for each of two units in system.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Light Emitting Diodes: Board mounted.
       12. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       13. Leg Assembly: Beveled washers for positive mechanical contact.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two options for heliport identification beacons.

* + 1. Heliport Identification Beacons: Point Heliport LED Beacons Model PHB-37002-W-3-M-NC-SOL as manufactured by Point Lighting Corporation.
       1. Application: Used at privately owned heliports where an optional visual aid is desired to enhance marking the heliport site location as noted in FAA Advisory Circular 150/5390-2B, paragraph 210.f; no plastics used in structural construction of beacon.
       2. Serviceability: Beacon is permanently sealed.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43H.
          2. FAA Advisory Circular 150/5390-2B, para. 210.f, 310.h, 410.f.
          3. ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5.
          4. ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.8 to 14.
          5. Army TM 5-811-5, para. 7-5.b. Station Identification.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A, IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 250.0 Canada.
       5. System Controls: Separate control unit in NEMA 4X, IP66 wall-mounted enclosure.
          1. Signaling: Type M, Morse code, flash control compliant with ICAO Annex 14, Volume II, paragraph 5.3.2 and Transport Canada CAR 325.33.
       6. Light Emitting Diodes: Type NC, night vision goggles compatible.
          1. Service Life: Rated for 100,000 hours.
          2. Light Colors:

White: Type W, 2,500 candelas intensity.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

* + - 1. Power Source: Type SOL, solar power system, NEMA 4X enclosure.
      2. Power Consumption: Type 3.
         1. Voltage: 12 and 24 VDC.
         2. Operating Range: 10.8 to 26.4 VDC input produces a controlled, stabilized constant current output to the LED board.
      3. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
      4. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) SOW 600-volt cable loop and gland from factory.
      5. Temperature Rating: Negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      6. Finish on Exterior Metal Components: Aviation yellow that meets US Military Standard Salt Fog Test conducted per MIL-STD-810F, Method 509.4, Procedure I.
      7. Mounting: 4 holes on 10.5 inches (267 mm) circle.
      8. Castings: Aluminum.
      9. Lens: Clear soda-lime glass.
      10. Hardware: Type 316L stainless steel.
    1. Heliport Identification Beacons: Point Heliport LED Beacons Model PHB-37002-W-1-M-NC-P as manufactured by Point Lighting Corporation.
       1. Application: Used at privately owned heliports where an optional visual aid is desired to enhance marking the heliport site location as noted in FAA Advisory Circular 150/5390-2B, paragraph 210.f; no plastics used in structural construction of beacon.
       2. Serviceability: Beacon is permanently sealed.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43H.
          2. FAA Advisory Circular 150/5390-2B, para. 210.f, 310.h, 410.f.
          3. ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5.
          4. ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.8 to 14.
          5. Army TM 5-811-5, para. 7-5.b. Station Identification.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A, IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 250.0 Canada.
       5. System Controls: Separate control unit in NEMA 4X, IP66 wall-mounted enclosure.
          1. Signaling: Type M, Morse code, flash control compliant with ICAO Annex 14, Volume II, paragraph 5.3.2 and Transport Canada CAR 325.33.
       6. Light Emitting Diodes: Type NC, night vision goggles compatible.
          1. Service Life: Rated for 100,000 hours.
          2. Light Colors:

White: Type W, 2,500 candelas intensity.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

* + - 1. Power Consumption: Type 1, 120 VAC.
         1. Frequency: 50/60 Hz.
         2. Average Wattage: 36.0.
         3. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
      2. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
      3. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) SOW 600-volt cable loop and gland from factory.
      4. Temperature Rating: Negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      5. Finish on Exterior Metal Components: Aviation yellow that meets US Military Standard Salt Fog Test conducted per MIL-STD-810F, Method 509.4, Procedure I.
      6. Mounting: 4 holes on 10.5 inches (267 mm) circle.
      7. Castings: Aluminum.
      8. Lens: Clear soda-lime glass.
      9. Hardware: Type 316L stainless steel.

\*\* NOTE TO SPECIFIER \*\* Fill in blanks below with job number to complete model number.

* + 1. Solar Lighting System Controllers with Radio Controllers: Solar Heliport Lighting Systems Model HSOL-HC-\_\_\_\_\_\_\_\_ and Radio Controller PRC-65001-DC-\_\_\_\_\_\_\_\_ as manufactured by Point Lighting Corporation.
       1. Application: Remote sites where commercial or generator power is not practical and for unattended marine offshore helidecks; provides 24 VDC power to one lighting circuit which operates upon activation of radio controller.
       2. Radio Controller: DC powered.
       3. Solar Control Unit: Output to load ratio exceeds 1-1 year round.
       4. Photovoltaic Array: High quality crystalline silicon cells.
       5. Batteries: Marine grade Absorbent Glass Mat (AGM) deep discharge batteries.
       6. Enclosures: NEMA 4X solar and radio controller enclosures.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. HELIPAD LIGHTING AND CONTROL SYSTEMS (USA Metal Surface Layout)
     1. Description of Application for Helipad Lighting and Control Systems: Fabricated metal landing surface; TLOF and FATO are the same perimeter.
     2. FATO-TLOF Perimeter Lights: POINTSPEC Series Point Rollover LED Lights, Model PRL-97004-1C-G-LSM-NC-VB as manufactured by Point Lighting Corporation.
        1. Application: Used for heliports where an omnidirectional inset semi-flush light is required to provide visibility and circling guidance.
        2. Serviceability: Does not require removal of fixture ring from mounting base, disturbing pavement or disturbing flexible epoxy sealant for moisture seal in gap around fixture.
        3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
           1. FAA AC 150/5390-2B Heliport Design.
           2. Canadian Aviation Regulations Standard 325.
           3. ICAO Annex 14, Volume II.
           4. UK CAA CAP 437, Chapter 4 and Appendix C.
        4. Suitability for Use in Wet Locations:
           1. ETL Listed to UL 50, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
           2. ETL Listed to CSA C22.2 No. 94, No. 137-M and No. 250.0 Canada.
        5. Marine Treatment: Bezel finished in standard, green color.
           1. Cleaning: Federal Specification TT-C-490 method III.
           2. Pretreating: MIL-C- 5541 type II, chrome-free aluminum conversion coating.
           3. Powder Coating: MIL-PRF-24712A type VI, oven cured.

Primer: Epoxy powder base coat primer.

Finish Coating: Glossy polyester powder coat finish in color RAL 6003, FED-STD-595 color No. 14097, dark green.

* + - 1. Array: Heliport, Type C.
      2. Mounting: Type LSM, low surface mount base; ground lug and stainless steel screws included with each unit from factory.
      3. Brightness: Type VB, variable; remotely dimmable by means of heliport controller designed and produced by lighting manufacturer.
      4. Perimeter Lights: IMO MODU Code, paragraph 13.5.20.
      5. Power Consumption: Type 1.
         1. Voltage: 120 VAC.
         2. Frequency: 50/60 Hz.
         3. Watts: 3.2.
         4. Volt-Amps: 4.6.
         5. Operating Range: 93 to 144 VAC input produces a controlled, stabilized constant current output to the LED board.
      6. Light Emitting Diodes: Type NC, night vision goggles compatible, factory-soldered set position; wire mounted raised LEDs that can be bent out of position are unacceptable.
         1. Service Life: Rated for 100,000 hours.
         2. Light Colors:

Green: Type G.

Visibility Range as Tested: Greater than 8 miles (12.9 km).

Chromaticity: Meets requirements of MIL-C-25050.

Infrared: Type IR, 855 nm wavelength, for night vision goggles.

Visibility Range as Tested: Greater than 3 miles (4.8 km).

Radiant Power: 137 mW/sr.

* + - 1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
         3. LED Boards: Treated with protective dielectric conformal coating.
      2. Wiring: Factory prewired with three conductors for line, neutral and ground.
         1. Connectors: Silicone-filled wire nut connectors, included with unit from factory.
         2. Fittings: Watertight cable compression fittings for entry to light housing.
         3. Base: Standard, two threaded entries at 0 and 180 degrees, 1 inch (25 mm) National Pipe Taper (NPT) hubs.
      3. Ambient Temperature: Units warranted to withstand range of negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Optical Assembly: Sealed mechanically without use of chemical sealants.
      5. Outer Lens: Clear glass, smooth and rounded, with highest point not exceeding 0.75 inch (19 mm) above finished grade.
      6. Castings: Aluminum; less than 0.25 percent copper.
      7. External Hardware: Type 316 stainless steel, ISO 3506 Grade A4.
    1. Surface Floodlights: Point Surface LED Floodlights Model PSF-53063-6-T-PLS-V as manufactured by Point Lighting Corporation.
       1. Application: Provides high intensity light ' washing' the landing surface to facilitate improved conspicuity and depth perception for pilots; suitable for hazardous areas.
       2. Adjustability:
          1. Beam Angle: Vertically adjustable to 15 degrees above and below level.
          2. Height: L-brackets adjust overall height from 2.0 to 2.6 inches (51 to 66 mm).
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 50E, UL 844, UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       5. Brightness: Continuous variability from 10 to 100 percent; unrelated to perimeter light.
       6. Power Consumption:
          1. Voltage: 277 VAC.
          2. Frequency: 50/60 Hz.
          3. Watts: 32.2.
          4. Volt-Amps: 34.1.
          5. Operating Range: 96 to 305 VAC input produces a controlled, stabilized constant current output to the LED board.
       7. Light Output:
          1. Intensity: 4,725 lumens.
          2. Peak: 14,175 candelas.
       8. Mounting: Type T, trunnion mount.
       9. Base: Type PLS, shallow base and gasket.
       10. Finish: Black anodized.
       11. Visor: Type V, required, projects 6 inches (152 mm) horizontally over LEDs.
       12. Wiring: Cable loop exits rear of floodlight.
       13. Castings: Aluminum, heat treated; less than 0.2 percent copper.
       14. External Hardware: Type 316 stainless steel, ISO 3506 Grade A4.
    2. Roof-Mounted Wind Cones, Internally Lighted: Point Wind Cones Model PWC-8061L-1-ON-FF-B-G-SM-T as manufactured by Point Lighting Corporation.
       1. Application: Used to visually indicate wind direction at heliports.
       2. Design Compliance: Mercury-free electrical couplings.
          1. ETL Verified FAA Advisory Circular AC 150/5345-27E.
          2. Meets or exceeds ICAO Annex 14, Volume II, paragraph 5.1.
          3. Canadian Aviation Regulations Standard 325.31.
          4. Australia CASA MOS Part 139, Section 9.6.
          5. UK CAA CAP 437.
       3. Mounting: FAA Style 806, low height.
          1. Floor Flange: Type FF, PL10412A Floor Flange.

Finish: Orange powder coat painted.

Diameter: 8 inches (203 mm).

Mounting Holes: Four holes per flange, 0.56 inch (14 mm) diameter, 6 inches (152 mm) diameter bolt circle.

Center Hole: Threaded to accept coupling.

Wiring Compatibility: Through hole for wiring to enter the pole.

* + - * 1. Coupling: Type G, rigid machined coupling provided with unit in lieu of standard frangible coupling.
        2. Stand Mount: Type SM, pre-drilled standoff bracket with junction box and cable fitting.
      1. Windsock: Size 1, 8 ft (2438 mm) length.
         1. Frame Diameter: 18 inches (457 mm).
         2. Color: Type ON, international aviation orange nylon, factory painted.
         3. Seams: Triple-sewn.
         4. Abrasion Resistance: Reinforced at key points including but not limited to the end of frame basket.
         5. Drainage: Two or more brass grommets to prevent water accumulation.
         6. Attachment to Frame Basket: Stainless steel twist-lock marine grade hardware.
      2. Power Consumption: Type 1, universal AC voltage.
         1. Voltage: 120 VAC.
         2. Watts: 39.2.
         3. Volt-Amps: 43.2.
         4. Operating Range: 96 to 250 VAC input produces a controlled, stabilized constant current output to the LED board.
      3. Wiring: Each unit factory-supplied with sufficient length of 3-wire SO cable with strain relief to extend from lighting to base of pole and connectors as required for field connection of lights to cables.
      4. Lighting Type: Type L, internally lit with LED floodlight and obstruction light.
      5. Lighting Assembly: Type B.
         1. Internal Light: PSF-53062 LED Floodlight, IP66 listed.

Intensity: 3,076 lumens.

Peak: 10,458 candelas.

Mounting: Allows free rotation.

* + - * 1. Top Mounted Light: Certified FAA L-810 red LED obstruction light.
      1. Upper Assembly: Type T, stainless steel tether to pad.
         1. Bearings: Two high quality nylon coated corrosion resistant sealed ball bearings with grease fittings.
         2. Hardware: Stainless steel.
         3. Windsock Mount: Aluminum frame basket; 36 inches (914 mm) extension.
      2. Pole Assembly:
         1. Slipfit Adapter: Accepts the upper bearing assembly to prevent moment stress and possible failure of 1 inch (25 mm) threaded interface.
         2. Finish: Factory applied, FAA certified paint process.

Primer: Brush painted water based stainless steel pigmented paint rated for 30 years life in corrosive atmospheres.

Finish Coat: Water based gloss acrylic paint in aviation orange color according to Federal Standard 595 color No. 12197.

* + - * 1. Touch-Up Paint: One can supplied with each unit from factory.
      1. Anchor Bolts: Not supplied with each unit from factory.
    1. Approach Path Indicators: Point Heliport LED Lights Model HAPI-89001-1-F and System Programmer PL11248-HAPI as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual slope guidance; installed on the side opposite the approach, facing across the landing area.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the HAPI system; plugs into rear of HAPI unit.
       3. Aiming: If the HAPI system is installed with a VAGS system, both systems should be aimed at the same vertical angle; HAPI angle must be set so the transition line to flashing red allows the aircraft to clear any obstacles in the approach path.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. FAA AC 150/5390-2C Heliport Design, paragraphs 219, 318 and 418.
          2. ICAO Annex 14, Volume II, Chapter 5.
          3. UK CAA CAP 437, Chapter 4 and Appendix C.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall installed.
       9. Signals:
          1. Flashing Green: Too high, above slope.
          2. Steady Green: On slope.
          3. Steady Red: Slightly below slope.
          4. Flashing Red: Too low, below slope.
          5. Alarms: Flasher failure, LED array failure and alignment.
          6. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       12. Leg Assembly: Beveled washers for positive mechanical contact.
    2. Vertical Alignment Guidance Systems: Point Heliport LED Lights Model VAGS-89021-1-F-PLS and Model PL11248-VAGS Controller as manufactured by Point Lighting Corporation.
       1. Application: Used in non-hazardous area as visual horizontal alignment; two units are installed facing the approach and arranged for left and right signals.
       2. System Programmer: Digital leveling and aiming by means of a handheld device; required to install and maintain the VAGS system; plugs into rear of VAGS unit.
       3. Aiming: If the VAGS system is installed with a HAPI system, both systems should be aimed at the same vertical angle.
       4. Adjustment: 0 to 15 degrees vertical angle.
       5. Brightness Control: Three steps.
       6. Design Compliance: ICAO Annex 14, Volume II, Chapter 5.
       7. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A at negative 40 to positive 130 degrees F (negative 40 to positive 55 degrees C), IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 137-M and No. 250.0 Canada.
       8. Universal Mount: Type F, frangible, includes mounting plate, anchor bolts and four threaded legs with frangible couplings; under 9-27/32 inches (250 mm) tall installed.
       9. Signals:
          1. Steady White: On azimuth.
          2. Steady Red: Off azimuth.
          3. Alarms: LED array failure and alignment.
          4. Alarm Tolerances: Programmed via handheld controller.
       10. Power Consumption: Type 1, AC current for each of two units in system.
           1. Frequency: 50/60 Hz.
           2. Watts: 70.
           3. Volt-Amps: 75.
           4. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       11. Light Emitting Diodes: Board mounted.
       12. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) cable loop from factory.
       13. Leg Assembly: Beveled washers for positive mechanical contact.
    3. Heliport Beacons, 3-Color: Point Heliport LED Beacons Model PHB-37002-WGY-1-H as manufactured by Point Lighting Corporation.
       1. Application: Used at privately owned heliports where an optional visual aid is desired to enhance marking the heliport site location as noted in FAA Advisory Circular 150/5390-2B, paragraph 210.f; no plastics used in structural construction of beacon.
       2. Serviceability: Beacon is permanently sealed.
       3. Design Compliance: American Bureau of Shipping (ABS) type approved product.
          1. ETL Verified FAA L-864 to FAA Advisory Circular 150/5345-43H.
          2. FAA Advisory Circular 150/5390-2B, para. 210.f, 310.h, 410.f.
          3. ICAO Annex 14 Heliports, Volume II, para. 5.3.2. 1 to 5.
          4. ICAO Annex 14 Aerodromes, Volume I, para. 5.3.3.8 to 14.
          5. Army TM 5-811-5, para. 7-5.b. Station Identification.
       4. Suitability for Use in Wet Locations:
          1. ETL Listed to UL 1598 and UL 1598A, IP66 and IP67.
          2. ETL Listed to CSA C22.2 No. 250.0 Canada.
       5. System Controls: Type H, 3-color flash control.
          1. Colors: Type WGY, beacon flashes alternately white (clear), yellow and green.
          2. Flash Rate: FAA compliant, 36 flashes per minute; 12 flashes per minute for each color.
       6. Light Emitting Diodes:
          1. Intensity: 2,000 candelas.
          2. Rating: 100,000 hours average life.
       7. Power Consumption: Type 1, AC current.
          1. Frequency: 50/60 Hz.
          2. Wattage:

Peak: 51.1 watts.

Average: 30.0 watts.

* + - * 1. Volt-Amps: 74.
        2. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
      1. Electrical Protection:
         1. Power Supply Boards: Include short circuit and open circuit protection.
         2. Line Surge Protector Type: Metal oxide varistors (MOVs).
      2. Wiring: Each unit supplied with 118-1/8 inches (3000 mm) SOW 600-volt cable loop and gland from factory.
      3. Temperature Rating: Negative 67 to 130 degrees F (negative 55 to 55 degrees C).
      4. Finish on Exterior Metal Components: Aviation yellow that meets US Military Standard Salt Fog Test conducted per MIL-STD-810F, Method 509.4, Procedure I.
      5. Mounting: 4 holes on 10.5 inches (267 mm) circle.
      6. Castings: Aluminum.
      7. Lens: Clear soda-lime glass.
      8. Hardware: Type 316L stainless steel.
    1. Lighting System Controllers: Point Heliport Lighting Controller with Touchscreen Advanced Model PHC-66002-AC-BC-HC-HWC-VC as manufactured by Point Lighting Corporation.
       1. Application: Provides manual and automatic operation of the heliport lighting system.
       2. Design Compliance: UL 508A and CSA C22.2 No. 14.
       3. Transient Event Monitoring: Via DIN-rail mounted, IEC/EN 62561-6 compliant transient event monitor with LCD screen.
       4. Brightness Control:
          1. Floodlights: Type BC.
          2. HAPI Lights: Type HC, for one approach light; on-off, 3-step brightness control and alarm indication.
          3. VAGS-SAGA Lights: Type VC, for one approach light; on-off, 3-step brightness control and alarm indication.
       5. Web Control: Type HWC, direct control of lighting system by mobile device or computer workstation.
          1. Password Protection: Enables user level security to protect unauthorized system activation and configuration settings changes.
          2. Connection: Ethernet cable not included with unit.
       6. Touchscreen: High brightness, color TFT touch panel display with LED backlighting that controls all system operations.
          1. Compliance: IP65, NEMA 4, UL Type 4x rated.
          2. Brightness: Minimum backlight brightness of 450 cd/m2.
          3. Rated Life: 30,000 hours.
       7. Enclosure:
          1. Compliance: Certified to IEC 529, CSA, KEMA and UL 508A Type 4X and 12, IP66 watertight and dust tight.
          2. Materials: Fiberglass reinforced polyester.
          3. Color: Gray, RAL 7036.
          4. Door Hinge: Stainless steel piano hinge and seamless gasket.
          5. Internal Components: Panel mounted.
          6. The enclosure shall be.
       8. Power Consumption: Type AC, AC current.
          1. Frequency: 50/60 Hz.
          2. Operating Range: 96 to 264 VAC input produces a controlled, stabilized constant current output to the LED board.
       9. Electrical Protection: Breakers are resettable; status is color coded
          1. Controller and Lighting Circuits: Protected from transient voltage spikes by a DIN-rail mounted 50kA interrupting IEC 61643-1 approved surge suppressor.
          2. Outputs: Six load output circuits protected by current limiting 15-amp breaker.
       10. Wiring: US National Electric Code compliant internal wiring and component spacing, all components prewired to IEC terminal blocks.

1. EXECUTION
   1. EXAMINATION AND PREPARATION
      1. Prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
      2. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
      3. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   2. INSTALLATION
      1. Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction; test for proper operation
   3. FIELD QUALITY CONTROL
      1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
   4. CLEANING AND PROTECTION
      1. Clean and protect products in accordance with the manufacturer's recommendations.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION