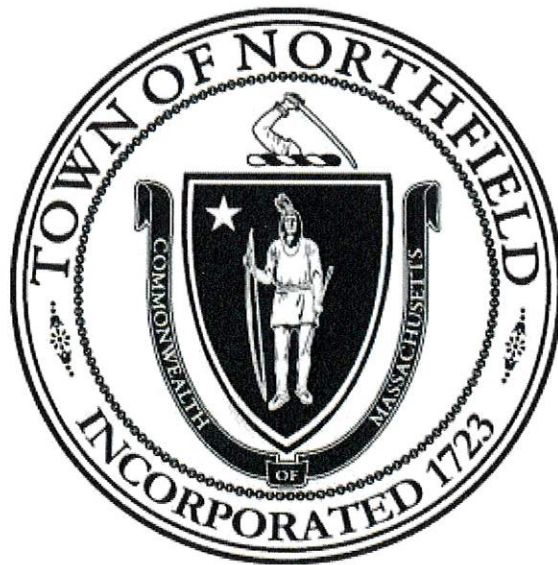


**APPLICATION FOR
SITE PLAN REVIEW
FOR THE
NORTHFIELD PUBLIC SAFETY
HEADQUARTERS**



February 27, 2023

Cover Letter



February 27, 2023

Northfield Planning Board
c/o Town Clerk
Northfield Town Hall
69 Main Street
Northfield, MA 01360

By Hand Delivery

Re: Site Plan Application – Northfield Public Safety Facility
121 Main Street, Northfield, MA
Assessor's Map: 17, Parcel a portion of parcel 2
Places Associates Project No. 5587

Dear Members of the Board;

On behalf of and at the request of the Town of Northfield Emergency Services Facility Committee, we herewith make a Site Plan application for the construction of a new public safety facility to be located off Main Street, on a vacant parcel of land which was recently acquired by the Town of Northfield for this facility.

The proposed use is for a municipal facility for a combined Police, Fire and EMS services facility. The use is allowed under the provisions of the zoning bylaws, Section 5.4, Table 1,B, Municipal Use, It is noted as a "Y", which is a use "Permitted by right" in the Recreation Tourism Zoning District.

A Site Plan Application is required under Section 3.5, B Applicability, items 1 & 2 of the Zoning Bylaws. Included in this application is a project narrative which outlines and describes the proposed project. We also note that the Zoning Bylaws provide specific exemptions for the review of some items. In particular, we believe that Site Lighting is exempt under the provisions of 8.1.3, C Applicability, 2, Exemptions, h. lighting for public safety purposes. Additionally, the project signage appears to be exempt as well as provided for in 8.2.2, Exempt Signs, items 7 & 8. Regardless of the exemptions, it is the applicant's belief that the intent of these regulations are being adhered to as part of the facilities' overall design. See additional information in the attached project narrative.

Further, as the Planning Board is likely aware, the Town of Northfield undertook an extensive search of properties that were assessed for suitability to support this facility. This facility is unlike a commercial or retail development, its siting requires assessment of a multitude of factors, high among that list is accessibility and location. Unlike Police, who principally respond to calls while on-the-road, Fire and EMS departments respond using the vehicles and equipment stored at the facility. So a central location with good accessibility is a requirement. The need for a new public safety facility has been well documented in town over the years. The need is listed on the Town's most recent Masterplan as being a significant requirement to provide for modern, safe facilities for the three departments.

The Town of Northfield Emergency Services Facility Committee has worked diligently to undertake appropriate site selection, facilities planning and public outreach to present this plan to the Planning Board. It is the intent of the Facilities' Committee to ensure that the best, most cost-effective and safe facility is provided to the Town.

This application is one of many that will be needed to permit the project. In addition to this Site Plan, we will be submitting for the following additional permits:

1. Front offset Variance from the Northfield Zoning Board of Appeals (submitted)
2. Notice of Intent with the Northfield Conservation Commission
3. State Highway Access Permit with MA DOT (50% material submitted)
4. Sewer Connection Permit with Northfield Sewer District
5. Water Connection Permit with Northfield Water District
6. Building Permit (after grant of items 1-5) with the Building Inspector

Included as part of this application are four (4) copies of the following, which together form the overall application:

1. This cover letter
2. Completed Application Form
3. Project locus map
4. Site Plan Application Narrative
5. Drainage System Design Executive Summary
6. Town of Northfield Property Search Matrix Report
7. Light Fixture Product Sheets

8. Attachments (under separate cover):
 - a. Architectural Plans (11" x 17")
 - b. Copy of ANR Plan creating the new lot (from Registry of Deeds)
 - c. Site Plans including:
 - i. Cover Sheet
 - ii. Existing Conditions and Site Demolition Plan
 - iii. Site Plan
 - iv. Layout & Materials Plan
 - v. Grading Plan
 - vi. Construction Details
 - vii. Landscape Plan and Details
 - viii. Photometric Plan
9. Flash Drive containing electronic copies of above (items 1 to 8,viii).

On behalf of the applicant, Town of Northfield Emergency Services Facility Committee we appreciate the Board and Town Department's consideration of this application. If prior to the public meeting, additional information is needed, please do not hesitate to contact the undersigned.

Sincerely,
Places Associates, Inc.

By:



William E. Murray, RLA
Project Manager

Enc: as noted

Cc: Town Clerk, Town of Northfield
Northfield Building Inspector

The following copied by electronic means:
Andrea Llamas, Town Administrator
Northfield Emergency Services Facility Committee
Caolo & Bieneck Associates, Inc. – Architects
Colliers Project Leaders

Application Form

PLANNING BOARD
TOWN OF NORTHFIELD

www.northfieldma.gov
69 MAIN STREET
NORTHFIELD, MASSACHUSETTS 01360-1017

APPLICATION FOR SITE PLAN APPROVAL Fee: \$30.00

Municipal Project Waiver of Fee Requested.

If the Planning Board determines that professional consultations are necessary to review the application before the Board, due to the complexity of the application, the cost and expense of the consultations will be billed to the applicant. All amounts owed must be paid before any permits will be issued.

The undersigned submits original and 4 accompanying site plans of property located in the Town of Northfield for study, discussion, and approval under Protective Regulations By-law Article X. All requirements of this by-law must be complied with before a planning board review can be scheduled. Copies of Northfield's Protective Regulations may be purchased from the town secretary. It is strongly recommended that the applicant come before the Planning Board with preliminary plans before submitting the official site plan review application.

Town of Northfield, c/o Andrea Llamas, Town Admini
Name of Applicant

69 Main St, Northfield, MA 01360
Address

(413) 498-2901, ext. 115
Phone

Owner is Applicant
Name of Landowner (if not applicant):

Address:

Phone:

Places Associates, Inc.
Name of Surveyor:

256 Great Road, Suite 4, Littleton, MA 01460
Address:

(978) 486-0334
Phone:

What authority referred you to the Planning Board for site plan review? Zoning Requirements & Bldg Insp.

Deeds of Property recorded in Franklin County Registry of Deeds:


Book 8104 Page 294

Book _____ Page _____

Zone property is located 121 Main Street, Northfield, MA

List liens or restrictions, if any on the property, and/or state, county, or town protective zones in which the property is located:

The property has a Sewer District easement running diagonally from southeasterly corner to north westerly corner, generally parallel to Mill Brook.



Signature of Owner

Owner is Applicant

Signature of Applicant

Brief description of Project and what action in by-laws triggered a site plan approval

Construction of a 18,000 gsf one story house and apparatus bay to rear, public safety facility to house, fire, police and EMS departments. The proposed project will allow the public safety departments to be fully and safely housed in a code compliant and modern facility. See attached project narrative for additional details.

The submittal to the Planning Board is as required by Zoning, Section 3.5, Site Plan Review, B. Applicability, items 1 & 2. Where new construction and parking areas are proposed.

The project is located in the Recreation/Tourism Zoning District and is an allowed use in that district per 5.4, Table 1, Schedule of Uses, Public Service Category, Municipal Use - Permitted in all districts by right.

How will the flowing be addressed: preservation of landscape, open space, circulation, surface water drainage, and compliance with other by-laws?

See attached project narrative which is part of the overall application package.

OWNER RESPONSIBILITY:

Copy of Site Plan or notification of submission where required to:

	Date Delivered
Building Inspector	_____
Board of Health	_____
Town Clerk Notification	_____
Conservation Commission (if wetlands involved)	_____



Required advertising costs, including notice to abutters
To be determined \$ _____

Costs for any necessary review costs
To be determined \$ _____

Date received by Planning Board _____

65 days from receipt _____

PLANNING BOARD RECORD

Application, Site plan (original & _____
Date received

4 copies) & thumb drive with pdf
copies

Acknowledgement of receipt by _____
Town Clerk Date received

Reviews made by town officials and /or consultants if required or recommended (comments attached)

Building Inspector _____
Date Action

Board of Health _____
Date Action

Fire Department _____
Date Action

Conservation Commission _____
Date Action

Engineering Consultant _____
Date Action

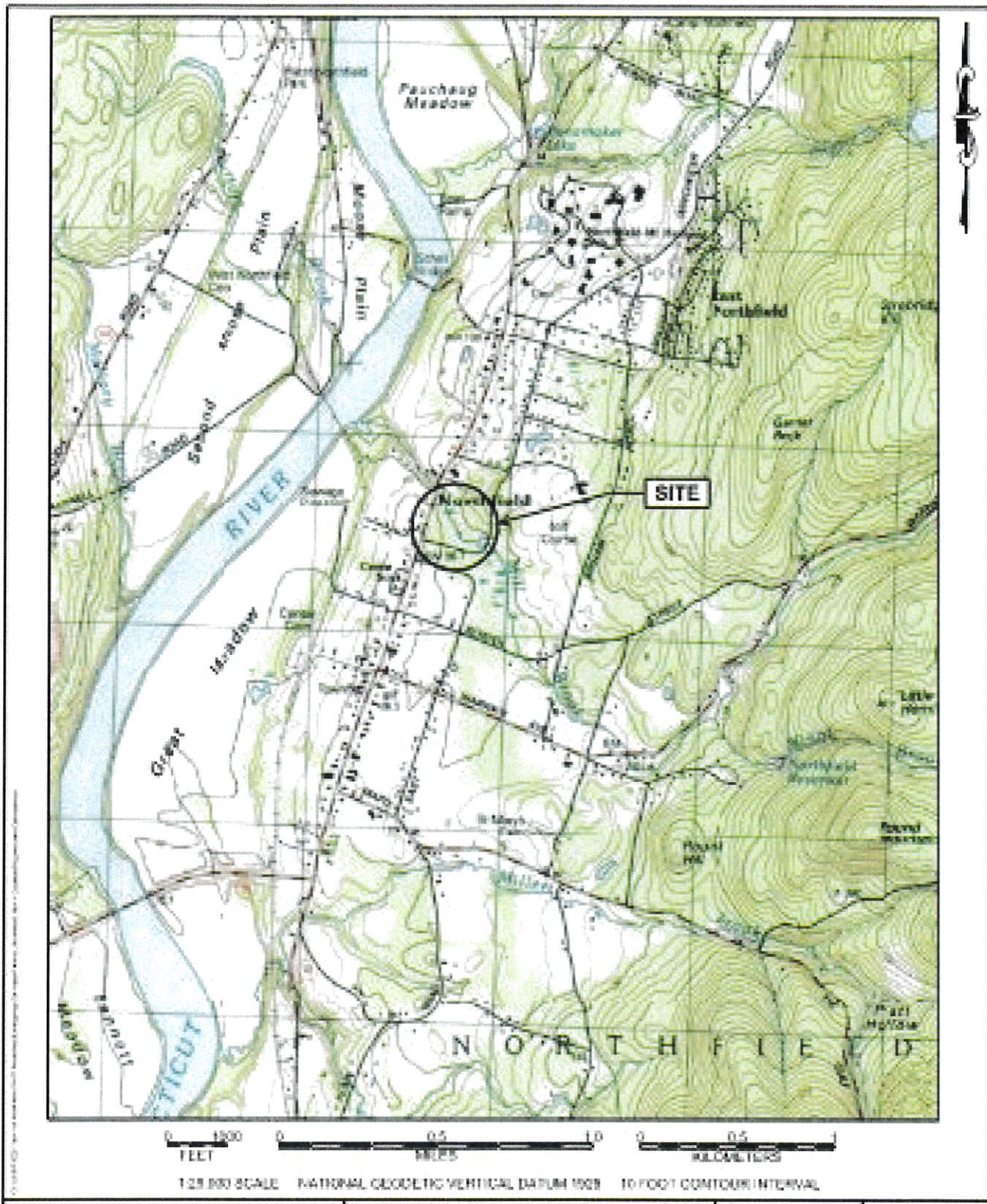
Other _____
Date Action

Planning Board Action _____
Date

(meeting minutes attached)

- Approved
- Modified & Approved
- Disapproved

Reproducible plan signed & returned to applicant _____
Date



Locus Map for

Northfield Public Safety Headquarters, 212 Main Street, Northfield, MA

Project Narrative

PROJECT NARRATIVE:

The following information is intended to address the narrative requirements of the site plan submittal as defined in the Town of Northfield's Zoning Bylaw, Sections 3.5 Site Plan Review and Section 8 -General Regulations. The first part of this narrative outlines the general intent of the project and some relevant facts about the project. The second part of this narrative follows the format of the zoning bylaw (Section 8) and utilizes that sections headings and numbering format for ease of reference and completeness.

General:

This application is made for the development and construction of a combined 18,000± gross sq. ft., Public Safety Headquarters for the joint use of the facility by the Northfield Police, Fire and EMS Departments. The facility is intended to replace two existing structures (Fire and EMS garages) and to relocate the Police Department from the Town Hall's lower level to a new facility. The intent of this facility is to provide to the residents of the Town enhanced public safety services and the Department's with compliant facility meeting modern public safety requirements for the storage of apparatus, the disposition and handling of police detainees and increased operational efficiency overall for all departments.

Building Design: The Emergency Services Facility consists of approximately 18,000 gross sq. ft enclosed in a one-story structure. The building's exterior design has been developed to compliment the local traditional architecture, so as to blend into the neighborhood, but also project its public facility purpose and be obvious that it is a public safety facility. It is important that the structure be identifiable as a public safety facility and that its access points and entries are clearly defined. The building structure is located to allow the existing walking path used by the library to remain undisturbed. The structure has also been moved as close to the street for the improved visibility reasons noted, but also to avoid the existing wetlands to rear of the site and place the majority of the building on the only flat upland that exists nearest to the roadway.

As noted above, the site currently has public water, sewer and electric/communications/cabled utilities off the lines in Main Street. An on-site drainage system will act to capture, treat and attenuate stormwater prior to its discharge.

Site Selection: The site for this facility was selected after an extensive, multi-year search via the Massachusetts public procurement process (MGL Ch 30B) to find a site meeting the multiple requirements of the three departments being served. Multiple sites along Main Street and other portions of the town were assessed for compatibility to the Town's requirements, but this site was chosen as it met those requirements and other peripheral needs of the town as well. The site is served by public water and sewer, as well as having suitable soils for on site construction and drainage mitigation.

Permits:

1. **Municipal Use:** The site is in the Recreation-Tourism Zoning District. A "Municipal Use" is an allowed use "Y" in this district.¹
2. **Site Plan Review:** Under the provisions of zoning, § 3.5 SITE PLAN REVIEW, item B, Applicability, this project is subject to Site Plan Review under criteria 1, 2, and 4.
3. **Zoning Board of Appeals:** We are making an application to the Northfield Zoning Board of Appeals for a variance to the front offset, to allow the building to be 12' off of the front property line for multiple reasons.
4. **Notice of Intent:** A Notice of Intent will be filed with the Northfield Conservation Commission to permit work in the 100' buffer zone and Riverfront Areas.

¹ Northfield Zoning Bylaw, Table 1, B. Public Service, Municipal use is "Y" in RT column chart, indicating a use Permitted By-Right.

5. MassDOT: A State Highway Access Permit (SHAPS) application will be filed for the construction of the two project driveways along Main Street (State Routes 10 & 63).

Compliance with Section 8 of the Zoning Bylaws. Section 8.1 Site Development Regulations are referred to as the applicable design standards for projects subject to site plan review. We address each of these requirements in the project narrative which is part of this application. It is our belief that the signage needed for this project is exempt from regulation pursuant to Section 8.2, D Exempt Signs, items 7 & 8.

8.1.1 Principals of Rural Design:

- A. *Wherever feasible retain and re-use existing old farm or forestry woods roads...*

In this case a path exists on the southerly end of the site. It is used by the library as part of a story trail and gains access to other trails interior to the property. This path is purposefully not being disturbed or re-used to maintain the access to the rear of the lot and adjacent open space. This woodland foot path is also immediately adjacent to the neighbor, and it is the project's intent to remove the access driveways away from the closest abutter.

The project requires two driveways as the fire department apparatus bay has exits on the northerly and southerly side. The southernmost driveway allows public access to the front of the building and restricted access (with posted "Authorized Access Only" signs) to the Fire/Emergency Medical Services (EMS) apparatus bays on a lower level.

The northerly driveway will be posted as "Authorized Access Only" via signage at the junction of the driveway and Main Street. This driveway serves the Police Department's exterior areas and the Fire/EMS apparatus bays on the northerly side of the building. Also on this side of the building is a "staff only parking area" for police, fire and EMS personnel. The number of spaces in this area was defined by the Chiefs of each department to support anticipated maximum parking requirements.

- B. *Preserve stonewalls and hedgerows..*

The site is a moderately wooded lot with second growth hardwoods predominating in the area of proposed construction. No stonewalls or hedgerows exist in the areas proposed for the construction of the public safety facility.

- C. *Avoid placing buildings in the middle of open fields..*

As noted above, the site is a moderately wooded lot with second growth hardwoods predominating in the area of proposed construction. No open fields exist on this site.

- D. *Use existing vegetation and topography to buffer and screen new buildings if possible, unless they are designed and located close to the road in the manner historically found in the Town.*

Both of the above-described conditions exist. The building is designed and planned to be close to the road as is in keeping with historic precedent. The building design is intended to compliment the historic architecture of Main Street. As the building is a public safety facility, it is intended to be visible to the public as a public building and an identifiable police, fire and EMS facility.

The apparatus bay is placed at the rear of the site as it is the most "industrial" portion of the building, housing fire and EMS apparatus, with garage doors on the northerly and southerly faces. The placement of the this area at the rear of the site is deliberate. The fact that it is lower than the front building, decreases the height of the apparatus bay in appearance and simultaneously uses the drop in grade to fit the structure to the site.

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

E. *Minimize clearing of vegetation at the edge of the road....*

As noted above, the building is purposefully located close to the road for the reasons noted. Clearing in front of the building is needed for grading as well as overall visibility of the facility.

On the southerly side, clearing for the access drive and associated parking is minimized to the extent practicable. In the northerly parking lot, shade trees are proposed along the site's frontage.

F. *Site buildings so that they do not protrude above treetops and crestlines of hills.. Use vegetation as a backdrop to reduce the prominence of the structure.....*

The building is designed as a single story structure for the front, street-facing "house" portion of the facility, such that the peak of the rear apparatus bay is both behind and lower than the front portion of the building. The roofs are designed with mansard hip roofs to minimize the exterior building wall height associated with gable-end roofs. As noted above, the building is purposefully located close to the road for the reasons noted. Vegetation is being maintained site-wide to the extent practicable. Additional evergreen plantings are being added to screen the abutters to the south and break-up the appearance of the filled, downhill slopes.

G. *Minimize crossing of steep slopes with roads and driveways...*

The building has been designed into the existing hillside to minimize the need for extensive earthworks and to take advantage of the existing level areas along Main Street. Driveways have been designed "tight" to the building to reduce the overall footprint of disturbance. Parking areas are also located adjacent to Main Street on the generally level portions of the site adjacent to Main Street.

H. *Where feasible, site buildings and other areas to be developed in a manner that does not block trails or paths that have traditionally provided access to back land...*

As noted in the response to item A above, the existing footpath that access the rear portions of the lot and is currently used by the library as a story trail is being maintained and protected. No site alterations are proposed that will impact the path as it exists currently. Other paths located on the property follow the existing sewer easement. Except for a temporary disturbance to connect to the sewer line, this path will also not be permanently affected by the proposed construction of the facility.

8.1.2 Off-Street parking and Loading:

Sections A to E principally address need for parking, applicability and the number of parking spaces required.

The number of spaces required by Table 3, page 33 of the Zoning Bylaws notes that Business, professional or governmental office require 1 space per 300 sf (net). The table also provides for "Other uses not specified herein" as being the number of spaces as determined by the Building Inspector.

1. Governmental Use: In the case of this facility, it is clearly a "governmental use", but it is not similar to other more office like uses, as spaces like apparatus bays, sally port and prisoner processing, etc.. areas do not generate uses that require parking. Likewise, on-call staff for fire and EMS are not accommodated in the standard office space use requirements.

We have calculated the "net floor space" of the house portion of the building to be ~ 6,500 sf (exclusive of sally port, fleet garage, garage storage areas and apparatus bays. Using the 1 space per 300 sf. Standard a total of 21.67 spaces or 22 spaces are required. The proposed plan provides for 40 striped spaces. These 40 spaces do not include spaces available inside the sally port/fleet garage (2).

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

2. **Other Uses:** The total number of spaces proposed, 40, is based on an estimate of the maximum number of spaces that will be required for the facility's maximum usage as determined by the Chiefs. There are 13 spaces available in the public parking area, 23 for staff only, another 4 spaces are to be designated for police vehicles only. Additional un-marked spaces exist along the edges of the apparatus bay driveways, where on-call responders could park without obstructing access/egress to the bays, if needed. (See below item 8.1.2 J – Reduced Parking, where 6 spaces are requested to be reduced from the above total.)
 3. **Dimensional Standards:** All parking spaces, except accessible ones, are provided as 9' wide by 18' long with 24' wide access aisles. All parking spaces are proposed to be provided on asphalt paved surfaces that can be maintained in all weather conditions.
 4. **Summary:** The number of parking spaces provided exceed the pragmatic standard of the zoning bylaw as well as meet the requirements of the Police, Fire and EMS Department's requirements for simultaneous use of the facility. The design of the parking meets the dimensional requirements of the bylaws.
- F. **Parking Area Design:**
1. **Surface:** All parking and access areas of the site are proposed to be asphalt paved with curbing. The parking areas will be drained and the runoff treated prior to discharge.
 2. No portion of the parking areas require the backing into a public way to enter or exit the parking spaces or lot.
- G. **Location of Parking:** The parking for the facility is to be located to the northerly and southerly side of the facility, as that is where the level areas exist currently. The locations for the parking also correspond to the design of the building, where the southerly side is the public access and entrance to the building. The northerly side of the site is restricted to those that need to gain access to the police and apparatus bay areas. A single accessible space projects along the same line as the front of the building, as that is where the existing grade is at its flattest in relation to the rest of the site and driveway. Accessible spaces must be level to comply with regulatory and practical requirements. On the southerly side, clearing for the access drive and associated parking is minimized to the extent practicable. The northerly parking lot (staff lot) will maintain a screen of natural vegetation between it and Main Street.
- A dense row of evergreen shrubs are proposed at the southerly parking lot opposite of the building to screen the neighbor to the south. This row of evergreens will also provide physical and site line separation between the site and the Mill Brook Trail. The only portion of the Mill Brook Trail to be altered will occur in the Main Street right-of-way, where a new sidewalk will connect to the existing sidewalk and extend to the new facility. No portion of the naturalized trail will be impacted by this development.
- H. **Safety of Off-street Parking Areas:** The parking areas have been designed using standard parking lot and accessibility standards. Where the proposed sidewalk will cross the southerly access driveway, ramps will be provided from the sidewalk to the asphalt driveway surface. The area of crossing will be contained within a striped crosswalk. Likewise, the accessible parking space will have a designated unloading area that directly connects to the sidewalk via an accessible ramp. Sidewalks provide

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

access to the front door for the public. Other portions of the site are considered “restricted areas” for staff and emergency personnel only and are noted as such by signage.

As part of the site survey, a sight distance measurement of each of the driveways was conducted to ensure that clear line of sight exists for emergency apparatus exiting the site. More than 500’ of clear sight lines exist for both driveways in the northerly and southerly directions. This is sufficient for oncoming traffic to see an emergency vehicle exiting the site and for the driver of the emergency vehicle to safely exit the site onto Main Street.

- I. **Bicycle Parking:** A bicycle rack is provided adjacent to the southerly parking lot’s public access sidewalk, see the site plans.
- J. **Reduced Parking:** There are six (6) parking spaces on the upper parking lot, located on the southerly (public) area of the station. It is proposed that these are not built as part of the initial project, but the space reserved for future parking if needed. The drainage system design will assume that they are built, so that if the parking is determined to be needed, it can simply be added on without changes to the site’s infrastructure.

It is the goal of the project to provide the number of spaces likely to be needed on a day-to-day basis. The Chief’s do not believe that 13 public spaces will be needed and the proposed 7 spaces adjacent to the building will be sufficient. In making this application, we note that we comply with the requirements of 8.1.1.E, 1, a & b – Computation of Parking Spaces. Our provided calculations note that 22 spaces are required by the regulations and a total of 40 are shown. Removing the 6 parking spaces provides 34 spaces, which is more than defined by the regulations. Based on this assessment, no special permit for a reduction of parking is needed.

8.1.3 Outdoor Lighting:

Sections C, 2. Exemptions, item h., notes that, “...other lighting for public safety as may be required or installed by governmental agencies.” is exempt from review. However, we are submitting a site lighting plan and information pursuant to the requirements of this section. The site lighting information has been developed by the project’s electrical engineering firm, Consulting Engineering Services (CES). It is provided as a separate package, which is attached and made part of the overall site submittal.

In developing the site lighting, we are proposing to use a combination of building mounted lighting, under soffits, over doors and above the apparatus bays, as are required for egress lighting. A series of lit bollards will light the access sidewalk along Main Street so that the walk is lit, but there is no up lighting or offsite light spill. The lighting will be controlled by sensors to turn on at dusk and remain on until a timer turns them off at night (time to be determined by the Chief’s). Some exterior lights will be activated when a call is received by the EMS or Fire Department to allow call staff to safely enter the site and get to the apparatus bay.

All site pole mounted site lighting will be focused inward, so that fixtures and posts will shine from the periphery of the parking areas toward the building. The flagpole will be down lit using a solar based top of pole light.

8.2 Signs:

The site will feature an on-building signage identifying the building, see Architectural Plans. No separate signage is proposed at this time. It is the applicant’s position that the signage for the facility is exempt from review as listed in 8.2.2. D Exempt Signs, items 7 & 8.

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

Landscaping:

The landscaping for the project consists of mostly of indigenous plant materials that will be low maintenance and will provide for a variety of flowers, leaf color, shade (for shade trees) and screening (evergreens). These plants are adapted to this area. Foundation plants have a variety of bloom times to ensure some color along the building's front throughout the spring and early summer. No irrigation is proposed as part of the project at this time, but irrigation sleeves are being installed should the town decide to install a system later on.

The landscaping shown is proposed as the maximum number of plantings for the facility. The basic bid will include ½ of the shown landscape materials and the remaining plants will be accommodated as a "Bid Add Alternate". This bidding procedure is a cost control measure. This categorization allows the contractor to provide a separate price for the second half of the landscape materials, such that the Committee can accept that Alternate if costs are reasonable and bids fall within the estimated and anticipated values. The project's Landscape Architect will place plant materials with the landscape contractor at the appropriate time to meet the project's aesthetic and screening requirements.

The large amount of slopes on the easterly side of the project will be planted with a slope stabilization mixture that includes legumes or clover species to assist in enhancing the soils and will be pollinator- friendly. These plants will eventually be succeeded (in terms of years)by more hardy species of grass and other low, habitat-enhancing indigenous plants.

Site Utilities:

Sewer: The site has a Sewer District main line that flows from the south-easterly corner of the site to the north-westerly corner, paralleling portions of Mill Brook. The project is proposed to connect to this sanitary sewer for service. The connection and flows are being coordinated with the Sewer District.

Water: The site will be served by municipal water supplies. A six inch water main exists in the right of way to Main Street on the facilities' side of the road. The main line is located on the easterly side (building side) of Main Street in the shoulder, not under the pavement. A series of water flow tests have been conducted as part of the overall facility design to ensure that sufficient water supply and pressure are available to support the fire protection needs of the facility. The tests confirmed sufficient flow. If sufficient flow and pressure exist for fire protection, then domestic supply requirements are met as the domestic water supply requirements are significantly less than the fire criteria.

Drainage: The drainage system design has been conducted to comply with the Mass DEP Stormwater Standards. As part of the drainage system design, Places Associates has conducted series of soil test holes in the basin areas. These were conducted and recorded by a Mass. DEP Certified Soils Evaluator and the results are on the plans. The drainage report can be forwarded to the Planning Board if they request. As noted above, the project will require approval from the Conservation Commission and we will be providing that Board with the detailed drainage calculations. An executive summary of the drainage design is attached as part of this application.

Electrical: A new mid-span pole and a new "drop pole" will be installed by the Electrical company to extend overhead power to the site. Once on site, all electrical lines will be buried. The site has been designed to support new electrical equipment and operations. A separate transformer and chagrining infrastructure are also provided to support Electric Vehicles, should any of the Departments choose to go that route in the future.

PLACES Associates, Inc.

256 Great Road, Suite 4, Littleton MA 01460 · (978) 486-0334 · www.placesassociates.com

Telecomm and Cable: Telecomm and Cable will be extended into the site from poles on the westerly side of Main Street. A new “drop pole” will be install to the north of the southerly driveway entrance. These utilities will then be buried from the pole into the building.

Propane: Propane will be the principal heating fuel for the facility. Three buried propane tanks are proposed ot the west of the northerly parking lot and are depicted on the plans. All supply lines are to be buried from the tanks to the building.

Wireless Communications: The building will feature “whip” antenna for communication purposes. These antenna are nearly visible and likely will be mounted to the peak of the apparatus roof. The communications will then reach out to existing systems for broadcast and repeaters. No antenna tower is proposed.

Drainage Design Summary

Executive Summary

The site is located on the easterly side of Main Street and is bounded to the north and east by Mill Brook and its adjacent wetlands, as depicted on the site plans. The brook is considered a perennial stream (also known as a "river") under the provisions of the Massachusetts Wetlands Protection Act (310 CMR 10.58). Development within the riverfront areas is prohibited within 100' of the edge of the river and is restricted in the 100' to 200' "outer riverfront". The soils are predominantly hydrologic soil group B, Unadilla and Agawam soils.

The proposed development on this parcel is a 17,760 s.f. Public Safety Facility Headquarters for the Northfield Police, Fire and EMS Departments. The facility will include apparatus bays, emergency generator and both public and restricted parking areas. In order to minimize the impact of development on the wetlands and riverfront area, the development will be limited to the area directly adjacent to Main Street, working with the steep slopes on the site.

The entire site drains from Main Street to the wetlands and river system to the east. The point of analysis for this project is the edge of wetlands. The site is served by two infiltration basins, located on the northerly and southerly portion of the site. A small infiltration system is located in the front of the building to recharge roof runoff and runoff from the front portion of the site. All runoff from parking areas will be routed through deep sump catchbasins equipped with oil and grease trap hoods. Pretreatment of the runoff will be through the use of water quality inlets prior to the infiltration basins.

The point of analysis for the site is the edge of Bordering Vegetated Wetlands adjacent to Mill Brook on the easterly side of the property. A summary table of the flows is below:

HydroCAD Analysis Results				
	Storm Event Discharge Rates (cfs)			
Design Storm Event	2-Year	10-Year	25-Year	100-Year
Existing Conditions	0.22	1.51	3.22	7.44
Proposed Conditions	0.22	1.51	3.22	7.44

This design is in full compliance with the MADEP stormwater management standards and incorporates best management practices (BMP's).

BMP's utilized:

- Deep Sump Catchbasins with Hoods
- Infiltration Chambers
- Infiltration Basin

Site Selection Matrix

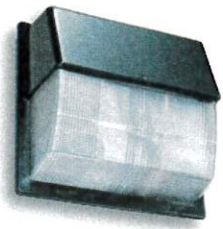
Site ID / Address	Physical Description	Planning, Zoning	Gross/Net Acreage	Utilities	Response Time, (Impacts)	Development Constraints	Geography, Topography	Procurement Costs	Summary, recommendation
Example Parcel	Relatively Level Previously undeveloped Multiple vehicle access routes	No Restrictions PB Approval required Clean title/deed	2.5+ Acres 24,220 est. GSF of construction	All Utilities exist in the adjacent public way	3-4 minutes with no railroads or bridges	No neighbors, No previous Hazmat No existing building	No ledge No wetlands No endangered species No burial ground	Municipally-Owned	
47 Lucky Clapp Road	Significant grade change across site w/ flat area around existing structure.	Currently Private Residence, Zone RA	~2.5 Acres	Water by private well Sewer: Septic System Overhead Elect. on poles (3-phase) w/ transformers Current heating fuel is oil.	Access to Lucky Clapp Road only. Sharp bend in roadway at intersection w/ Main St. Identified by JHA as difficult for apparatus maneuvers Main St. is a main north-south vehicular artery w/ unrestricted sight lines, and street lights Sight lines unrestricted for ~300' at Lucky Clapp Road. Poor visibility to the south at Main St. intersection.	Existing 2-Story Single-Family Residence, wood construction w/ basement; est. 2900sf., circa 2004 HazMat unlikely due to age of existing structures.	Site border w/ Main St. is topographically inaccessible along entire length, but area around ex. Bldg. could be suitably graded. Majority of site located in FEMA Flood Zone C Heavy clay subsoil compromises natural drainage. Main St. frontage contains Roaring Brook and its flood zones / wetland setbacks	Purchase of Lot(s) Required* Est. Cost: \$262,900	Indicated by JHA 2012 study as "viable for a public safety facility". Less proximate to center of town than most other sites being considered. Concern regarding demolition and removal of existing structures; there appear to be enough gradable areas to accomplish the desired program. Sight lines good for egress onto Lucky Clapp Road, less than desirable onto Main St. Grading and alignment at Lucky Clapp / Main St. intersection is a significant concern. Water and Sewer would need to be developed. Minimal impact anticipated to existing neighborhood.
93 Main Street (Existing Fire Station Site)	Gentle slope across School St. frontage; grade meets elevation of existing building upper level at Main St., lower level at School St.	Zoned RAF (Residential / Agricultural / Forested) Existing Permitted Use	1.42 Acres (smaller than ideal site recommended by JHA study)	Municipal Water Municipal Sewer 3-phase electric w/ pole mounted transformers Current heating fuel is oil.	Main St. is a main north-south vehicular artery w/ unrestricted sight lines and street lights Unrestricted sight lines at School St. to north and south.	91 Main St. multifamily residential parcel to the east and south. Existing Salt Shed Existing 2-Story Fire Station circa 1952, est. 4,500 GSF Free-standing Metal Garage circa 1970, ext. 1,800 sf. Radio Communications tower existing adjacent to site.	Entire site located in FEMA Flood Zone C Possible unsuitable fill at additional lot that would be needed to fit building program.	Municipally Owned	Municipally-owned land in a desirable location for a public safety facility; highest ranked site from JHA 2012 report, but would require purchase of 91 Main St. lot to be viable.

91 Main St.	Located in central business district immediately adjacent to existing Fire Station	Currently Private Residence, Zone RA	~6.0 Acres	Municipal Water	Main St. is a main north-south vehicular artery w/ unrestricted sight lines and street lights	Existing 4-story, 12-unit multi-family residence, circa 1765, est. 10,000 sq. ft.	Small portion of site is flood zone from tributary stream on east side of East St.	Privately-held. Purchase of Lot(s) Required*	Would need to be purchased in order to make a 91-93 Main Street site viable. Highest anticipated acquisition cost.
	Buildings are concentrated on portion of site adjacent to Main St. - remainder of site undeveloped.			Municipal Sewer		Freestanding wooden garage, est. 800 sq. ft.	Most of the site is in FEMA Flood Zone C	Est. Cost: \$476,700	
Calder - Sandri Parcels (East St.)	3.3 Acre undeveloped parcel in a residential neighborhood, one block east of Main St.	Zone RA	Calder Property: 3.3 Acres	Municipal Water	Access to East St. w/ unrestricted sight lines - one block off of Main St.	Vacant Lot, mostly cleared	All of the site is in FEMA Flood Zone C	Calder: Privately-held. Purchase of Lot(s) Required, and is not available for sale*	Indicated by JHA 2012 study as "less than desirable for development of a public safety facility". Proximate location to center of town, but significant difficulties anticipated for existing cruisers and/or apparatuses as East St. is not wide enough to be a primary apparatus exit. Location in a residential neighborhood would create a large impact in the neighborhood.
				Municipal Sewer	Sandri parcel has access via an access road between two residential properties.	Sandri lot, also vacant	Calder parcel has flood zone from a tributary stream directly across East St.	Est. Cost, Calder: \$61,200	
				Municipal Storm Drainage		Location in a residential neighborhood undesirable.	Wetlands present	Sandri: Privately-held. Purchase of Lot(s) Required*	
Sunoco - Sandri Parcels (Main St.)	Relatively flat parcel along Main St. bordered by residential lots on all sides.	Zone RA	Sunoco Parcels: 0.31 Acres Sandri Property: 2.42 Acres Combined: 2.73 Acres	Municipal Water	Access to Main St. w/ unrestricted sight lines.	Existing former gas station	All of the site is in FEMA Flood Zone C	Sunoco: Privately-held. Purchase of lot(s) required.	Privately-owned lots, but highly desirable location for a Public Safety facility. Second highest ranked by JHA 2012 study. Potential issues with underground contamination unknown; purchase price unknown but may negatively impact project cost.
				Private Septic	Sandri: Access to East St. via access road between two residential parcels	Sandri lot, vacant	Wetlands present	Est. cost, Sunoco: \$147,100	
				Existing 3-phase electric via overhead wires and pole-mount transformers		No known HazMat.		Sandri: Privately-held. Purchase of Lot(s) Required*	
								Est. Cost, Sandri: \$5,600	

Mill Brook Parcel, Dickinson St	Gentle slope (est. 7-8%) away from road, toward Riverfront Area.	No known restrictions; Zone RA	~27 Acres	Water: main in street Overhead Elects On poles w/ transformers Sewer in Main St.	Main St. is a main north-south vehicular artery w/ unrestricted sight lines and street lights	No previous HazMat No Existing Buildings Adjacent to Dickinson Library	No shallow bedrock. Geotechnical data indicate soil strata are favorable to support building program. Wetland Buffer from adjacent riverfront area	Municipally-Owned, per Town agreement to purchase on 5/2/2022 Possible advantageous synergy with other Town open-space goals	Indicated on IHA 2012 study as being "very viable for a public safety facility". Few concerns about site access, with good egress noted onto Dickinson St and Excellent onto Main St. Good location within Town of Northfield. Electrical service would need to be extended into the site. Minimal impact to the existing neighborhood. Cost of the site may impact the project budget.
Mount Hermon School Property (Near 220 Main St.)	Substantial slopes to property	No known restrictions.			Potential facility at this location would be at the far north end of Town. Added Response Time to most of the Town	NMH Not interested in selling the property			Property is not currently available for development.
Upper Main St. Commercial Property (280 Main St.) (Former Pioneer Video Store)	Property slopes off substantially in rear	No known restrictions.	Too small - adjoining property would need to be purchased.		Potential facility at this location would be at the far north end of Town. Residential neighborhood; undesirable location for a station.	Existing Office Buildings		Adjoining property would need to be purchased. Cost-prohibitive to purchase Potentially more office/administration space than is needed.	Existing Office buildings are not suitable for Emergency Services space needs program; cost prohibitive to purchase with inclusion of existing structures.
24 Main St. - Morgan Garage	Small footprint, tapers at rear of property.	No known restrictions.			Residential neighborhood; undesirable location for a station.	Potential prior HazMat from previous use as a gas station.			Too small to accommodate program. Quickly ruled out.
East St. Property		No known restrictions.	Exact site size unknown but certainly large enough to accommodate program (perhaps 15-20 acres)	Municipal Water No Sewer Connection Would require 3-phase power upgrade, to be run from Maple St.	East St. too narrow to accommodate apparatus response.	Would require demolition and removal of at least two existing buildings	Wetland border at rear of property.	Property tied up in estate / probate proceedings and is not readily available.	Property is not currently available for development.
Maple St. Property		No known restrictions.	Exact site size unknown but certainly large enough to accommodate program (perhaps 15-20 acres)	No Sewer Connection		Multiple existing structures, would need to remove 3-4 buildings (2 large, 2 small); cost to remove may not be advantageous.		Property tied up in estate / probate proceedings and is not readily available.	Property is not currently available for development.

Rte. 63 - Millers Falls Rd. (Currently Farm Land)	No known restrictions.	No Water Connection No Sewer Connection Existing 3-phase power	Considered too remote from Town Center for optimal response time.	Part of Northfield Water Co. aquifer buffer.				No existing utility connections; location considered too remote from Town Center for optimal response time, and was ultimately ruled out for this reason.	
Saint Mary's	No known restrictions.	No Sewer Connection Would require 3-phase power upgrade.	Warwick Rd. and Maple St. access needed to St. Mary's St. Outward vehicle maneuvering onto adjacent street.				Municipally Owned	As part of the Northfield Water Co. aquifer buffer, development at this location was determined to be strongly undesirable.	
49 Caldwell Rd. - Highway Department & Transfer Station Property	No known restrictions.	No Water Connection No Sewer Connection	Considered by some to be too remote from Town Center for optimal response time to apparatus. Locates emergency services across the river from businesses and campus				Municipally Owned	DIFFERING OPINIONS regarding whether or not it is too remote, and whether its location across the river should be a disqualifying attribute. It is agreed that the location is not ideal, even if the site itself would otherwise be desirable.	
546 Northfield Rd. (Merge With Bernardston)	Would require Bernardston buy-in / collaboration Located outside of the Town of Northfield		Would affect ISO ratings, which would cause a rise in the cost of fire insurance for all businesses, residences, and the college campus. Too remote - demonstrable negative impact on response times (4-8-10 minutes for bridge crossing)				Would require move to 2 Fire District format - Town would lose control of own Fire Department	Could be suitable option if willing to consider District approach to emergency services; publically undesirable at present.	
<p>*NOTES: EMS Chief Fortier and Fire Chief Duncell advised that an exhaustive inventory of municipally-owned parcels was taken, and all available options were considered. A large number of Town-owned parcels not on the above list were evaluated and quickly ruled out for being either too small, or having some other attribute that was quickly determined to make that parcel infeasible for development. Additionally, a proposal was put forth soliciting privately-held properties that might be suitable for an Emergency Services Building project, which did not yield any available properties that were clearly advantageous. It is important to note that this search has been going on for approximately 20 years at present time, and that extensive research has been done (and will continue to be done) to determine the most viable site.</p>									
Unacceptable	Acceptable	Advantageous	Most Advantageous						

Light Fixture Information



TWP LED

LED Wall Luminaire



Catalog
Number

Notes

Type

Hit the Tab key or mouse click the entry to see all related elements.

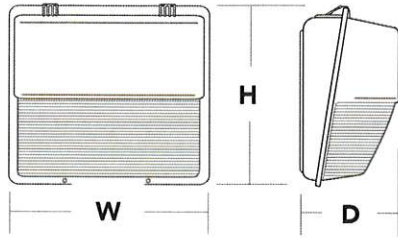
Specifications

Width: 16-1/8"
(41.0 cm)

Height: 15-1/2"
(39.4 cm)

Depth: 7-3/4"
(19.7 cm)

Weight: 15 lbs
(6.8kg)



Introduction

The TWP LED offers a classic appearance and is powered by advanced LEDs. A one-piece polycarbonate cover delivers enhanced durability and is vandal resistant, making the TWP LED ideal for lower mounting heights or high-traffic areas. The new TWP LED luminaire is powerful yet energy efficient, capable of replacing up to a 250W metal halide luminaire while saving up to 83% in energy costs.

The new TWP LED features an Adjustable Light Output (ALO), that allows the contractor to set the light output, during installation, to a level perfectly suited for the job site. The feature allows one luminaire to replace anywhere from 70W to all the way up to 250W metal halide luminaire.

Ordering Information

EXAMPLE: TWP LED ALO 50K T3M MVOLT DDBXD

TWP LED							
Series	Power Package	Color temperature	Distribution	Voltage	Control Options	Other Options	Finish (required)
TWP LED	ALO	30K 40K 50K	T3M Type III Medium	MVOLT ¹ 120 208 240 277 347 480	Shipped installed PE Photoelectric cell, button type ²	Shipped installed SF Single fuse (120, 277, 347V) DF Double fuse (208, 240, 480V) TP Tamper proof screws SPD Separate surge protection	DDBXD Dark bronze DBLXD Black DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DWHGXD Textured white

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number	CI Codes
TWP LED ALO 40K T3M MVOLT DDBXD	TWP LED ALO 40K	*265A1W
TWP LED ALO 50K T3M MVOLT DDBXD	TWP LED ALO 50K	*265A23

NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- The photocell is not voltage specific when ordering with MVOLT. It will operate from 120-277V. Not available with 480v.



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

FAO Setting	System Watts	30K (3000K, 70 CRI)		40K / 50K (4000K / 5000K, 70 CRI)		Replaces (Metal Halide)
		Lumens	LPW	Lumens	LPW	
Step 8 (default)	48	4,768	100	5,174	108	250W
Step 7	45	4,504	100	4,888	109	
Step 6	39	3,963	101	4,301	110	175W
Step 5	34	3,410	102	3,701	111	
Step 4	28	2,845	103	3,087	111	150W
Step 3	22	2,267	103	2,460	112	100W
Step 2	16	1,677	104	1,820	112	70W
Step 1	11	1,074	103	1,166	112	CFL

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **TWP LED ALO (default setting)** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.00	1.00	0.98	0.93

Electrical Load

LEDs	System Watts	Current (A)					
		120	208	240	277	347	480
ALO (default setting)	48W	0.41	0.27	0.24	0.19	0.14	0.11

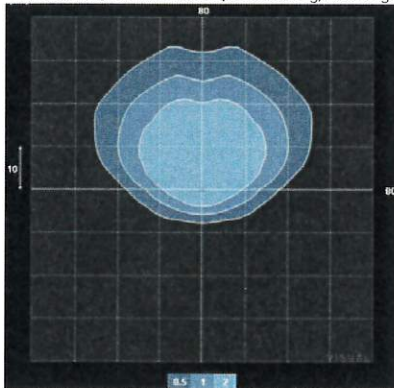
Photometric Diagrams

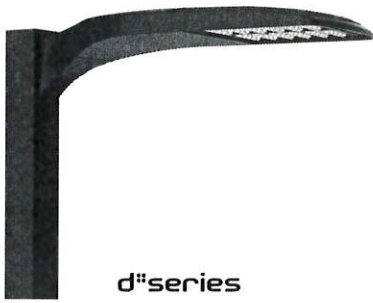
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [TWP LED homepage](#). Tested in accordance with IESNA LM-79 and LM-80 standards

LEGEND

- 0.5 fc
- 1.0 fc
- 2.0 fc

TWP LED ALO 50K T3M MVOLT (default setting) Mounting height - 10'





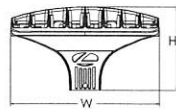
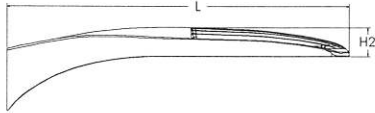
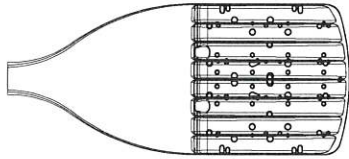
D-Series Size 1 LED Area Luminaire



d"series

Specifications

EPA:	0.69 ft ² (0.06 m ²)
Length:	32.71" (83.1 cm)
Width:	14.26" (36.2 cm)
Height H1:	7.88" (20.0 cm)
Height H2:	2.73" (6.9 cm)
Weight:	34 lbs (15.4 kg)



Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to view all interactive elements.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature ²	Color Rendering Index ²	Distribution	Voltage	Mounting		
DSX1 LED	Forward optics	(this section 70CRI only)		AFR Automotive front row	T5M Type V medium	Shipped included SPA Square pole mounting (#8 drilling) RPA Round pole mounting (#8 drilling) SPA5 Square pole mounting #5 drilling ⁹ RPA5 Round pole mounting #5 drilling ⁹ SPA8N Square narrow pole mounting #8 drilling WBA Wall bracket ¹⁰		
	P1 P6	30K 3000K	70CRI	T1S Type I short	T5LG Type V low glare			
	P2 P7	40K 4000K	70CRI	T2M Type II medium	T5W Type V wide			
	P3 P8	50K 5000K	70CRI	T3M Type III medium	BLC3 Type III backlight control ¹			
	P4 P9	(this section 80CRI only, extended lead times apply)		T3LG Type III low glare ¹	BLC4 Type IV backlight control ¹			
	P5			T4M Type IV medium	LCCO Left corner cutoff ¹			
	Rotated optics			27K 2700K	80CRI		T4LG Type IV low glare ¹	RCCO Right corner cutoff ³
	P10 ¹ P12 ¹			30K 3000K	80CRI		TFTM Forward throw medium	
	P11 ¹ P13 ¹			35K 3500K	80CRI			
			40K 4000K	80CRI				
			50K 5000K	80CRI				

Control options	Other options	Finish (required)
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc ^{11, 12, 20, 21} PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc ^{13, 20, 21} PER NEMA twist-lock receptacle only (controls ordered separately) ¹⁴ PERS Five-pin receptacle only (controls ordered separately) ^{14, 21}	PER7 Seven-pin receptacle only (controls ordered separate) ^{14, 21} FAO Field adjustable output ^{15, 21} BL30 Bi-level switched dimming, 30% ^{16, 21} BL50 Bi-level switched dimming, 50% ^{16, 21} DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷ DS Dual switching ^{18, 19, 21}	Shipped installed SPD20KV 20KV surge protection HS Houseside shield (black finish standard) ²² L90 Left rotated optics ¹ R90 Right rotated optics ¹ CCE Coastal Construction ²³ Shipped separately EGSR External Glare Shield (reversible, field install required, matches housing finish) BSDB Bird Spikes (field install required)
		DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white



Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²⁴
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²⁴
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²⁴
DSHORT SBK	Shorting cap ²⁴
DSX1HS P#	House-side shield (enter 1-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXSPAS (FINISH)	Square pole adapter #5 drilling (specify finish)
DSXRPAS (FINISH)	Round pole adapter #5 drilling (specify finish)
DSX1EGS (FINISH)	External glare shield

NOTES

- Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
- 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
- T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- HVOLT not available with package P1 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
- XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
- XVOLT not available in packages P1 or P10.
- SPAS and RPAS for use with #5 drilling only (Not for use with #8 drilling).
- WBA cannot be combined with Type 5 distributions plus photocell (PER).
- NLTAIR2 and PIRHN must be ordered together. For more information on nLight AIR2 visit this [link](#).
- NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50, DMG and DS. NLTAIR2 PIRHN not available with P1 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1 and P10 using XVOLT.
- PIR not available with NLTAIR2 PIRHN, PER, PER5, PER7, FAO BL30, BL50, DMG and DS. PIR not available with P1 and P10 using HVOLT. PIR not available with P1 and P10 using XVOLT.
- PER/PER5/PER7 not available with NLTAIR2 PIRHN, PIR, BL30, BL50, FAO, DMG and DS. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, DMG and DS.
- BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO, DMG and DS.
- DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DS.
- DS not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50, FAO and DMG.
- DS requires (2) separately switched circuits. DS provides 50/50 fixture operation via (2) different sets of leads using (2) drivers. DS only available with packages P8, P9, P10, P11, P12 and P13.
- Reference Motion Sensor Default Settings table on page 4 to see functionality.
- Reference Controls Options table on page 4.
- HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- CCE option not available with option B5 and EGS. Contact Technical Support for availability.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.

Shield Accessories



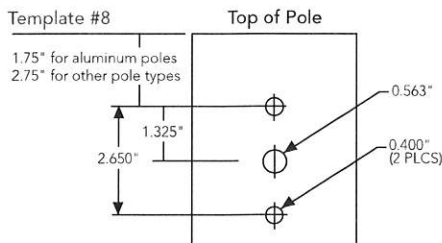
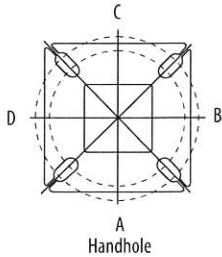
External Glare Shield (EGS)



House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION



Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPAS	#5	3"	3"	3"	3"		3"
RPAS	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX1 Area Luminaire - EPA

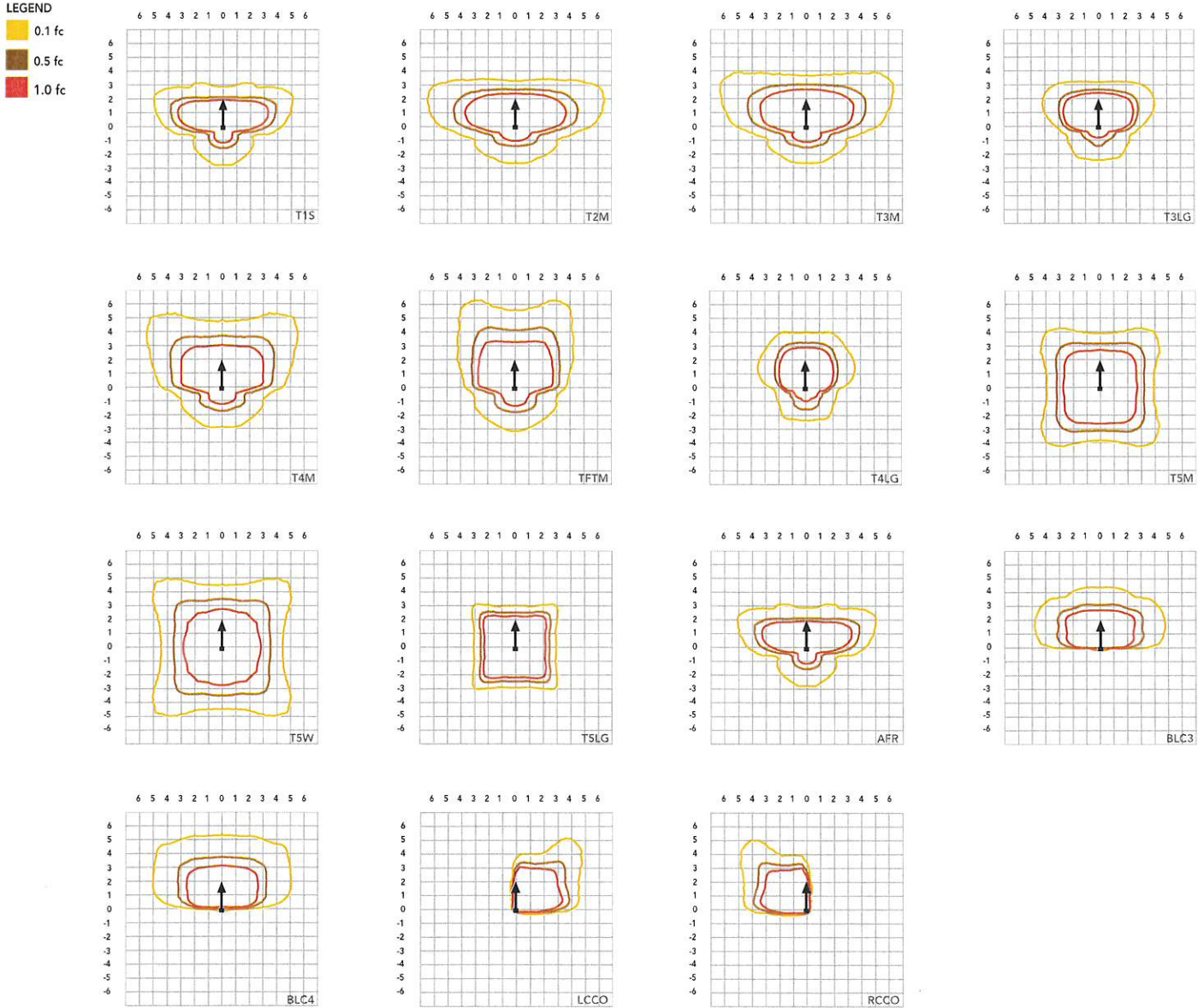
*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 with SPA	0.69	1.38	1.23	1.54	---	1.58
DSX1 with SPAS, SPA8N	0.70	1.40	1.30	1.66	---	1.68
DSX1 with RPA, RPAS	0.70	1.40	1.30	1.66	1.60	1.68
DSX1 with MA	0.83	1.66	1.50	2.09	2.09	2.09

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [homepage](#).

Isofootcandle plots for the DSX1 LED P9 40K 70CRI. Distances are in units of mounting height (25').





KBA8 LED

LED Specification Bollard



Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements

Specifications

8" Round
(20.3 cm)

Height: 42"
(106.7 cm)

Weight (max): 27 lbs
(12.25 kg)



Introduction

The KBA8 Bollard is a stylish, fully integrated LED solution for walkways. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 70% in energy savings over comparable 100W metal halide luminaires, the KBA8 Bollard is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: KBA8 LED 16C 700 40K SYM MVOLT DDBXD

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Control options
KBA8 LED	Asymmetric 12C 12 LEDs ¹	350 350 mA	30K 3000 K	ASY Asymmetric ¹	MVOLT ⁵	Shipped installed PE Photoelectric cell, button type DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ELCW Emergency battery backup, CA Title 20 Noncompliant ⁵
		450 450 mA ^{3,4}	40K 4000 K	SYM Symmetric ²	120 ⁵	
		530 530 mA	50K 5000 K		208 ⁵	
	Symmetric 16C 16 LEDs ²	700 700 mA	AMBPC Amber phosphor converted		240 ⁵	
			AMBLW Amber limited wavelength ^{3,4}		277 ⁵	
					347 ⁴	

Other options	Finish (required)
Shipped installed	DWHXD White
SF Single fuse (120, 277, 347V) ^{4,7}	DNAXD Natural aluminum
DF Double fuse (208, 240V) ^{4,7}	DDBXD Dark bronze
H24 24" overall height	DBLXD Black
H30 30" overall height	DDBTXD Textured dark bronze
H36 36" overall height	DBLBXD Textured black
FG Ground-fault festoon outlet	DNATXD Textured natural aluminum
L/AB Without anchor bolts (3 bolt base)	DWHGXD Textured white
L/AB4 4 bolt retrofit base without anchor bolts ⁸	

Accessories

Ordered and shipped separately.

MRAB U Anchor bolts for KBA8 LED⁸

- NOTES**
- 1 Only available in the 12C, ASY version.
 - 2 Only available in the 16C, SYM version.
 - 3 Only available with 450 AMBLW version.
 - 4 Not available with ELCW.
 - 5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
 - 6 Not available with 347V. Not available with fusing. Not available with 450 AMBLW.
 - 7 Single fuse (SF) requires 120, 277, or 347 voltage option. Double fuse (DF) requires 208 or 240 voltage option.
 - 8 MRAB U not available with L/AB4 option.
 - 9 Striping is available only in the colors listed.



Performance Data

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K					40K					50K					50K									
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW					
12C	350mA	16	ASY	1,126	1	1	1	70	1,210	1	1	1	76	1,217	1	1	1	76										
	530 mA	22	ASY	1,622	1	1	1	74	1,741	1	1	1	79	1,752	1	1	1	80										
	700mA	30	ASY	2,050	1	1	1	68	2,201	1	1	1	73	2,215	1	1	1	74										
	Amber 450	16	ASY																324	0	1	0	20					
16C	350mA	20	SYM	1,527	1	0	0	76	1,640	1	0	0	82	1,650	1	0	0	83										
	530 mA	28	SYM	2,186	1	0	0	78	2,348	1	0	1	84	2,362	1	0	1	84										
	700mA	39	SYM	2,744	1	0	1	70	2,947	1	0	1	76	2,965	2	0	1	76										
	Amber 450	20	SYM																374	0	0	0	19					

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.00	0.98	0.97	0.95

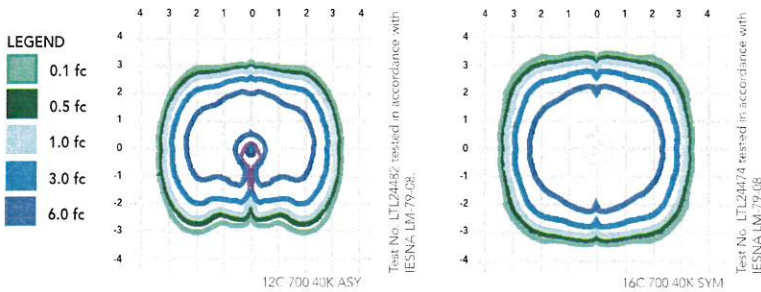
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)				
			120	208	240	277	347
12C	350	16W	0.158	0.118	0.114	0.109	0.105
	530	22W	0.217	0.146	0.136	0.128	0.118
	700	31W	0.296	0.185	0.168	0.153	0.139
	Amber 450	16W	0.161	0.120	0.115	0.110	0.106
16C	350	20W	0.197	0.137	0.128	0.121	0.114
	530	28W	0.282	0.178	0.162	0.148	0.135
	700	39W	0.385	0.231	0.207	0.185	0.163
	Amber 450	20W	0.199	0.139	0.130	0.123	0.116

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [KBA8 Bollard homepage](#).

Isofootcandle plots for the KB LED Bollards. Distances are in units of mounting height (3').



FEATURES & SPECIFICATIONS

INTENDED USE

The rugged construction and clean lines of the KBA bollard is ideal for illuminating building entryways, walking paths, and pedestrian plazas, as well as any other location requiring a low mounting height light source with fully cutoff illumination.

CONSTRUCTION

One-piece 8-inch round extruded aluminum shaft with thick side walls for extreme durability, a high-impact clear acrylic lens and welded top cap. Die-cast aluminum mounting ring allows for easy leveling even in sloped locations and a full 360-degree rotation for precise alignment during installation. Three 1/2" x 11" anchor bolts with double nuts and washers and 3 3/4" bolt circle template ensure stability. Overall height is 42" standard.

FINISH

Exterior parts are protected by a zinc-infused super durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering for maximum retention of gloss and luster. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand the elements without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Two fully cutoff optical distributions are available: symmetrical and asymmetrical. IP66 sealed LED light engine provides smoothly graduated illumination without any uplight. Light engines are available in standard 4000 K (>70 CRI) or optional 3000 K (>80 CRI) or 5000 K (67 CRI). Limited-wavelength amber LEDs are also available.

ELECTRICAL

Light engines consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (L95/100,000 hours at 700mA at 25°C). Class 2 electronic drivers are designed for an expected life of 100,000 hours with < 1% failure rate. Electrical components are mounted on a removable power tray.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines are IP66 rated. Rated for -40°C minimum ambient. Cold-weather emergency battery backup rated for -20°C minimum ambient.

BUY AMERICAN ACT

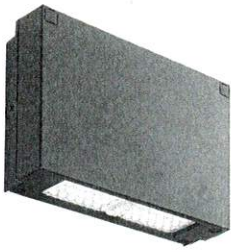
This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.





WPX LED Wall Packs



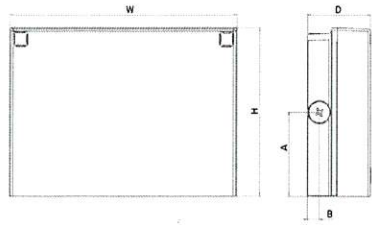
Catalog Number _____

Notes _____

Type _____

Click the link to go to the product page to see additional live elements.

Specifications



Front View

Side View

Luminaire	Height (H)	Width (W)	Depth (D)	Side Conduit Location		Weight
				A	B	
WPX1	8.1" (20.6 cm)	11.1" (28.3 cm)	3.2" (8.1 cm)	4.0" (10.3 cm)	0.6" (1.6 cm)	6.1 lbs (2.8kg)
WPX2	9.1" (23.1 cm)	12.3" (31.1 cm)	4.1" (10.5 cm)	4.5" (11.5 cm)	0.7" (1.7 cm)	8.2 lbs (3.7kg)
WPX3	9.5" (24.1 cm)	13.0" (33.0 cm)	5.5" (13.7 cm)	4.7" (12.0 cm)	0.7" (1.7 cm)	11.0 lbs (5.0kg)

Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HID wall pack replacement and new construction opportunities. Available in three sizes, the WPX family delivers 1,550 to 9,200 lumens with a wide, uniform distribution.

The WPX full cut-off solutions fully cover the footprint of the HID glass wall packs that they replace, providing a neat installation and an upgraded appearance. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Photocell and emergency egress battery options make WPX ideal for every wall mounted lighting application.

Ordering Information

EXAMPLE: WPX2 LED 40K MVOLT DDBXD

Series	Color Temperature	Voltage	Options	Finish	
WPX1 LED P1	1,550 Lumens, 11W ¹	30K 3000K	MVOLT 120V - 277V	(blank) None	DDBXD Dark bronze
WPX1 LED P2	2,900 Lumens, 24W	40K 4000K	347 347V ³	E4WH Emergency battery backup, CEC compliant (4W, 0 C min) ²	DWHXD White
WPX2 LED	6,000 Lumens, 47W	50K 5000K		E14WC Emergency battery backup, CEC compliant (14W, -20 C min) ²	DBLXD Black
WPX3 LED	9,200 Lumens, 69W			PE Photocell ³	Note: For other options, consult factory.

Note: The lumen output and input power shown in the ordering tree are average representations of all configuration options. Specific values are available on request.

NOTES

- All WPX wall packs come with 6kV surge protection standard, except WPX1 LED P1 package which comes with 2.5kV surge protection standard. Add SPD6KV option to get WPX1 LED P1 with 6kV surge protection. Sample nomenclature: WPX1 LED P1 40K MVOLT SPD6KV DDBXD
- Battery pack options only available on WPX1 and WPX2.
- Battery pack options not available with 347V and PE options.

FEATURES & SPECIFICATIONS

INTENDED USE

The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the one-for-one replacement of existing HID wall packs. The WPX1, WPX2 and WPX3 are ideal for replacing up to 150W, 250W, and 400W HID luminaires respectively. WPX luminaires deliver a uniform, wide distribution. WPX is rated for -40 C to 40 C.

CONSTRUCTION

WPX feature a die-cast aluminum main body with optimal thermal management that both enhances LED efficacy and extends component life. The luminaires are IP66 rated, and sealed against moisture or environmental contaminants.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs and LED lumen maintenance of L90/100,000 hours. Color temperature (CCT) options of 3000K, 4000K and 5000K with minimum CRI of 70. Electronic drivers ensure system power factor >90% and THD <20%. All luminaires have 6kV surge protection (Note: WPX1 LED P1 package comes with a standard surge protection rating of 2.5kV. It can be ordered with an optional 6kV surge protection). All photocell (PE) operate on MVOLT (120V - 277V) input.

Note: The standard WPX LED wall pack luminaires come with field-adjustable drive current feature. This feature allows tuning the output current of the LED drivers to adjust the lumen output (to dim the luminaire).

INSTALLATION

WPX can be mounted directly over a standard electrical junction box. Three 1/2 inch conduit ports on three sides allow for surface conduit wiring. A port on the back surface allows poke-through conduit wiring on surfaces that don't have an electrical junction box. Wiring can be made in the integral wiring compartment in all cases. WPX is only recommended for installations with LEDs facing downwards.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. IP66 Rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/CustomResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.



Performance Data

Electrical Load

Luminaire	Input Power (W)	120V	208V	240V	277V	347V
WPX1 LED P1	11W	0.09	0.05	0.05	0.04	0.03
WPX1 LED P2	24W	0.20	0.12	0.10	0.09	0.07
WPX2	47W	0.39	0.23	0.20	0.17	0.14
WPX3	69W	0.58	0.33	0.29	0.25	0.20

Projected LED Lumen Maintenance

Data references the extrapolated performance projections in a 25°C ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.94	>0.92	>0.90

Lumen Output

Luminaire	Color Temperature	Lumen Output
WPX1 LED P1	3000K	1,537
	4000K	1,568
	5000K	1,602
WPX1 LED P2	3000K	2,748
	4000K	2,912
	5000K	2,954
WPX2	3000K	5,719
	4000K	5,896
	5000K	6,201
WPX3	3000K	8,984
	4000K	9,269
	5000K	9,393

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

HID Replacement Guide

Luminaire	Equivalent HID Lamp	WPX Input Power
WPX1 LED P1	100W	11W
WPX1 LED P2	150W	24W
WPX2	250W	47W
WPX3	400W	69W

Emergency Egress Battery Packs

The emergency battery backup is integral to the luminaire — no external housing or back box is required. The emergency battery will power the luminaire for a minimum duration of 90 minutes and deliver minimum initial output of 550 lumens. Both battery pack options are CEC compliant.

Battery Type	Minimum Temperature Rating	Power (Watts)	Controls Option	Ordering Example
Standard	0°C	4W	E4WH	WPX2 LED 40K MVOLT E4WH DDBXD
Cold Weather	-20°C	14W	E14WC	WPX2 LED 40K MVOLT E14WC DDBXD

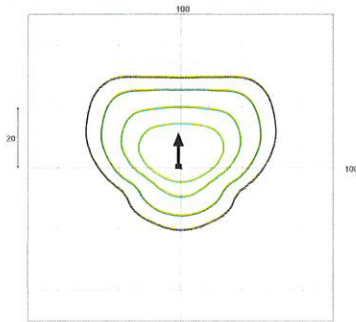
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting [WPX LED](#) homepage. Tested in accordance with IESNA LM-79 and LM-80 standards

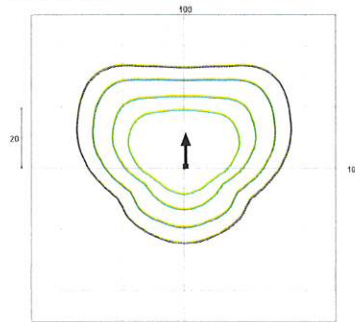
LEGEND

- 0.1 fc
- 0.2 fc
- 0.5 fc
- 1.0 fc

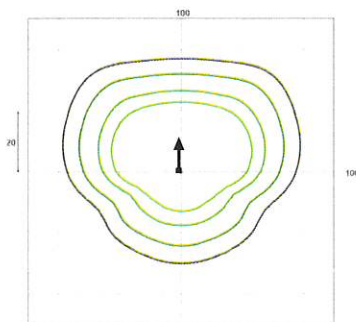
WPX1 LED P1



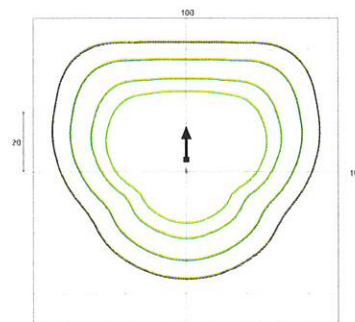
WPX1 LED P2



WPX2 LED



WPX3 LED



Mounting Height = 12 Feet.