







Wall Mount

Single Pendant



Dual Pendant





The ASYX 2.0 full family of asymmetric LED luminaires now offers a natatorium option, becoming an industry leader in these hard to light spaces. The harsh chemicals used in these natatorium environments can impact the integrity of the fixture as well as the performance of the LEDs. Eaton uses a special process to treat exposed materials with a chromate coating, as well as sealing the light engines. The high efficient AccuLED optics provides great forward and wide throw distributions for efficient installations. The ASYX 2.0 family of asymmetric luminaires is the right solution for natatorium spaces.



Visit <u>www.designlights.org</u> for a complete list of qualified products.

Installations

Kirkwood High School - Walker Natatorium - St Louis, MO



ASYX-DP-L6-NT-U-F-L40-2-UNV-W-C-XX-STD-R90/ 4000K, 29,800 lumens, & 319W (per fixture head) The Walker Natatorium, part of Kirkwood High School, is the 1st complete ASYX 2.0 natatorium installation. Featuring dual pendants with side aim/rotated optics option, the performance of the fixtures is well received. (See page 7 for spacing layout)

Bridgeton Recreation Center - St. Louis, MO



ASYX-SP(and DP)-L6-NT-U-F-L40-2-UNV-W-C-XX-STD-R90/ 4000K, 29,800 lumens, & 319W (per fixture head) The Bridgeton Recreation Center uses both single pendants, and dual pendants with side aim/ rotated optics. The outcome speaks for itself. (See page 7 for spacing layout)

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Materials

The natatorium, or indoor pool environment, exposes fixtures to chemicals that can affect the integrity and performance of the fixtures that live in these spaces. To protect the fixtures, the following processes are used for the ASYX 2.0 natatorium option:

a) Specialized coating process

- 4 Stage protection process for housings:w
- Impurities are removed from metal surfaces
- Metals are dipped twice in solvent baths
- Special coating is applied to metals
- Coated metals are cured in temperature regulated industrial oven

(Electrostatic powder coat paint is applied after 4 stage process)

- b) Exposed fasteners
 - Stainless steel is used
- c) Sealed LED light engine
 - Double layer sealant around frame of LEDs



Additionally, Eaton conducted three levels of reliability testing

- Salt Fog Testing per ASTM B117-73
- Accelerated Life Testing
- L80@60,000 hours
- In Situ Testing
 - Continuous reliability testing of installed fixtures



Design Guide

• The following diagram shows the spacial distances allowed in natatorium spaces in regards to luminaire layouts and electrical device placement and limitations per the 2014 NEC Handbook, NEC 680 code section:



NEC 680.23(A)(2)

- a. Luminaires, lighting outlets and ceiling suspended (paddle) fans permitted above 12ft.
- Totally enclosed luminaires protected by a GFCI and ceiling suspended (paddle) fans protected by a GFCI permitted above 7 1/2 ft.
- Luminaires, lighting outlets and ceiling suspended (paddle) fans not permitted below 5ft.
- Existing luminaires and lighting outlets permitted in this space if rigidly attached to existing structure (GFCI required)
- Luminaires and lighting outlets permitted if protected by GFCI.
- f. Luminaires and lighting outlets permitted if rigidly attached.
- Listed low-voltage luminaires not requiring grounding and not exceeding the low-voltage contact limit, powered by supplies in accordance with NEC 680.23(A)(2).

Ref: 2014 NEC Handbook

• The following table shows the Illuminance Criteria for Sports and Recreational spaces specific to swimming pools:

Sports and Recreational Illuminance Recommendations		Horizontal Illuminance (fc) Visual Ages			Uniformity Max: Min ratios
		<25	25-65	>65	10103
Swimming and Water Sports					
Class I	Competition Play - Professional (5000+ spectators)				
	@ water surface	75	75	75	1.7 : 1
	@ pool deck	50	50	50	2.5 : 1
Class II	Competition Play - Collegiate (5000 or less spectators)				
	@ water surface	50	50	50	2.5 : 1
	@ pool deck	20	20	20	4 : 1
Class III	Competition Play for some spectator facilities				
	@ water surface	30	30	30	3 : 1
	@ pool deck	10	10	10	4 : 1
Class IV	Competition or Recreational Play only (no spectator provision)				
	@ water surface	30	30	30	4 : 1
	@ pool deck	10	10	10	4:1

Ref: Illuminating Engineering Society The Lighting Handbook 10th Edition

• When designing lighting systems for swimming pools consider the following parameters to influence a better design:

Veiling reflections	Are luminous reflections from specular or semi-matte surfaces that physically change the contrast of the visual task. Two factors that influence this are specularity of the material of the target and geometry between the observer and the target.
Daylight	Clerestories contribute to overall lighting systems direct and indirect sources.
Finishes	On walls and pool decks - matte finishes prevent glare and help reduce veiling reflections. Lighter colors aide in higher exitance values.
Ceiling Uniformity	Max to min ratios closest to 1:1 help prevent high contrasts and boost ceiling uniformity.
Materials	Ceiling materials, reflective surfaces, and smooth or unsmooth surfaces, directly affect illuminance on to task surfaces. The smoother and less reflective a surface or space is, the more efficient the lighting system becomes.

Spacing Criteria

The Asyx 2.0

The following is a general spacing criteria guide to help evaluate various footcandle levels based on different ceiling types, heights, mounts, and distribution types. All values in the grid diagram are in footcandles and are normalized using the same light level and color temperature. For reference only.







ASYX 2.0 Single Pendant Mount

ASYX-L6-SP-Forward-4000K



ASYX 2.0 Wall Mount



ASYX 2.0 Single Pendant Mount

Recreation Center Pool in Missouri.

(dual pendant portion not shown)

ASYX-L6-WM-Forward-4000K

grid spacing 10' x 10' 80/50/20 max : min 1.5 : 1 31 fc avg @ pool deck

max : min 1.5 : 1 30 fc avg @ pool surface

grid spacing 10' X 10' 80/50/20

max:min 1.5 : 1 38 fc avg @ pool deck

max : min 1.4 : 1 37 fc avg @ pool surface

ASYX-L6-SP-Wide-4000K

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