WAREHOUSE + AISLE ENVIRONMENTS
As warehouses grow and aisles become taller and longer, the need has arisen for a luminaire that can deliver the horizontal punch while providing vertical uniformity. Standard aluminum high-bays can offer a very narrow distribution but their symmetric distribution produces a “scallop” effect of uneven vertical illumination. Prismatic acrylic and glass luminaires provide better vertical uniformity but at higher mounting heights it requires more luminaires to meet the horizontal luminance requirements.

OPTIMUM PERFORMANCE
The VertX aluminum reflector was designed to address the shortcomings of typical high-bay luminaires by offering an asymmetrical distribution for better vertical uniformity but with a strong downward punch to meet the high horizontal lighting requirements. Unlike traditional high-bays that produce a symmetrical distribution, the VertX was designed specifically to fit the long narrow warehouse aisles that are most common today.

ENERGY SAVINGS OPPORTUNITIES
This distribution allows the luminaires to be spaced further apart and deliver higher horizontal light levels versus traditional products, or use the same number and reduce the lamp wattage of luminaires for higher vertical uniformity and equivalent horizontal illumination. For the ultimate in energy and maintenance savings, combine the VertX with Cooper Lighting’s ECON™ electronic H.I.D. ballast and LumaWatt Hi/Lo control systems. The VertX aisle lighter is the H.I.D. solution to meet today’s challenging warehousing designs.

<table>
<thead>
<tr>
<th>FIXTURE TYPE</th>
<th>QTY.</th>
<th>AVG.</th>
<th>MAX.</th>
<th>MIN.</th>
<th>MAX./MIN.</th>
<th>AVG.</th>
<th>MAX.</th>
<th>MIN.</th>
<th>MAX./MIN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum High-Bay</td>
<td>11</td>
<td>30.25</td>
<td>33.8</td>
<td>15.4</td>
<td>2.19</td>
<td>17.5</td>
<td>69.6</td>
<td>2.9</td>
<td>20.55</td>
</tr>
<tr>
<td>Acrylic High-Bay</td>
<td>14</td>
<td>30.82</td>
<td>33.6</td>
<td>19.1</td>
<td>1.76</td>
<td>18.1</td>
<td>56.1</td>
<td>3.4</td>
<td>16.5</td>
</tr>
<tr>
<td>VertX</td>
<td>10</td>
<td>33.6</td>
<td>39.5</td>
<td>16.7</td>
<td>2.37</td>
<td>15.5</td>
<td>36.8</td>
<td>3.1</td>
<td>11.87</td>
</tr>
<tr>
<td>Acrylic/Aluminum Aislelighter</td>
<td>18</td>
<td>29.97</td>
<td>35.1</td>
<td>12.2</td>
<td>2.88</td>
<td>20.1</td>
<td>65.8</td>
<td>2.3</td>
<td>24.26</td>
</tr>
<tr>
<td>Modified Aluminum High-Bay Aislelighter</td>
<td>16</td>
<td>30.5</td>
<td>34.6</td>
<td>18.6</td>
<td>1.86</td>
<td>20.8</td>
<td>54.7</td>
<td>3.1</td>
<td>17.65</td>
</tr>
</tbody>
</table>

AISLE: ......................... 8’10” x 200’ x 32’
MOUNTING HEIGHT: .................. 30’
RACKS: ................................ 25’
REFLECTANCE: ...................... Ceiling: 50%, Aisle: 0%, Wall 10%

- HORIZONTAL REQUIREMENTS—Fewer fixtures.
- VERTICAL REQUIREMENTS—Same number of fixture with lower wattage.

ECON™ is available only in the Benchmark housing. >>>

HB VertX
Indoor Lighting Solutions 2

Cooper Lighting

Specification Features

**REFLECTOR**

The VertX is a hydroformed aluminum reflector scientifically designed with multiple facets to produce a long narrow distribution to provide the right balance of horizontal and vertical illumination. Rigid construction and an anodized finish ensure consistent optical performance. The bottom of the VertX reflector is symmetrical to allow easy installation of safety glass lens or wire guard accessories.

**LAMP**

The VertX was designed to use clear HID lamps for maximum lumen output and performance. The vertical lamp orientation delivers higher lumen output and longer lamp life. Requires mogul-base 175-450W Metal Halide or 250-400W High Pressure Sodium lamps.

**HOUSING + BALLAST**

The VertX reflector assembles easily to either the Steeler or Benchmark housings. AV19 reflector mounts easily to the ladder bracket assembly or die-cast neck and distributions can be adjusted for precise control. The ENVA19 is provided with a die-cast aluminum neck and provides for a wide range of distributions from concentrated to wide. Both the Steeler and Benchmark ballast housings are available with magnetic or ECON™ electronic HID ballast. The ECON™ offers Electronic HID ballast superior lamp maintenance and its 0-10V variable dimming capability make it ideal for warehousing applications.

**MOUNTING**

Steeler and Benchmark housings ship standard with an easy slide-on die-cast aluminum mounting box with a tapped opening for 3/4" conduit. Hook, cord and plugs, remote connections, Thru-Way power and pendant hooks are available. All products are also available with MWS modular wiring. MWS installs in 1/3 of the time as conduit and MC cable and offers great flexibility to address future building changes.

**LUMAWATT [INDIVIDUAL FIXTURE CONTROL]**

LumaWatt motion detector works in conjunction with fixture dimmers to provide bi-level control based on an area’s occupancy. Motion detector is passive infrared type and reacts to changes in infrared energy (heat) within the coverage area.

LumaWatt individual fixture controls are the perfect solution for warehouse and storage area retrofit opportunities. Wiring is integrated directly to the housing without the need to run additional control wires throughout the facility.
### ORDERING INFORMATION

**SAMPLE NUMBER:** MHSS-AV19-M-400-MT-Q

**LAMP TYPE**
- **HP/High Pressure Sodium**
- **MH/Metal Halide**
- **MP/Pulse Start MH (CWA)**
- **ML/Pulse Start MH (Linear Reactor)**

**SERIES**
- SS=Steeler

**REFLECTOR TYPE**
- AV=VertX

**REFLECTOR DISTRIBUTION**
- 19-19”

**SOCKET POSITION/DIAMETER**
- C=Circular
- M=Medium
- W=Wide

**LAMP WATTAGE**
- 150-1500W

**VOLTAGE**
- 120V

**OPTIONS + ACCESSORIES**

<table>
<thead>
<tr>
<th>ACCESSORIES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>FH-1</td>
<td>Feature Hook</td>
</tr>
<tr>
<td>FL-1</td>
<td>Feature Loop</td>
</tr>
<tr>
<td>SMH</td>
<td>Metal Arm with Safety Screws</td>
</tr>
</tbody>
</table>

**NOTES:**
- Not available in 175, 200, 350, 350, and 450W.
- Available lamp containment barrier required when enclosed rated MP/MH lamps are used. 2005 NEC code requires that open luminaires must utilize a safety glass bottom (SSB) accessory or an open rated socket (OF) and lamp. 3 300, 300, 350, 400 and 400 only. 4 277V only, not available with GD, GM, ML, HC, or HS options. 5 Factory set for concentrated, medium or wide distributions only. H P (Factory pre-set) is in the nomenclature of the fixture. 6 HPS only. 7 Products also available in non-US voltages and 50Hz for international markets. 8 Multi-tap ballast 120/240/277V wired 277V. 9 Triple-tap ballast 120/277/347V wired 347V. 10 S-tap ballast 120/240/277/480V wired 480V. 11 Must be listed in order shown and separated by a dash. 12 Not available with GD, G, ML, EG options. 13 30 second time delay when switching from bright to dim. Consult individual lamp manufacturers recommendations for compatible lamps. For use with DWA ballast only. 14 Not available with DD, PC, CN, PHC or MWW. Not available with single circuit MWS special order. 15 Not available with HL or HC option.
HB VertX
HEAVY-DUTY VERTICAL AISLE LIGHTER HIGH-BAY LUMINARIA

APPLICATION
The HB VertX aisle lighter is ideal for higher mounting height warehouse applications. Its unique distribution pattern delivers high horizontal illumination while reducing “scallops” or hot spots for a more uniform vertical surface.

MOUNTING
Easy slide-on die-cast aluminum mounting box with tapped opening for 3/4" conduit.

HOUSING
Durable heavy-duty die-cast aluminum housing for lasting performance in the harshest environments. Integrally hinged for ease of maintenance with optional toolless entries. Finished in a white polyester powder coat.

BALLAST
High-power factor ballast with class C insulation. Minimum starting temperature is -40°C (-40°F) HPS and -30°C (-20°F) for MH, MP, ML, and MD.

UNIVERSAL BRACKETS
Universal ladder brackets allow for the flexibility to change out with other reflectors available in acrylic or glass.

SOCKET
Modular-base porcelain socket.

REFLECTOR
Computer aided designed, fast-adjustable reflector mounts easily and allows multiple distribution patterns for precise control. Special contours and unique system of facets minimizes arc tube voltage rise.

SHIPPING DATA
Approximate Net Weight: 35 lbs. (15 kgs.)

Cooper Lighting
Indoor Lighting Solutions 4

LUMARK®

NOTES: 1 Not available 175, 200, 320, 350 and 450W. 6 Approved lamp containment barrier required when equipped rated MP/ML/MH lamps are used. 2005 NEC code requires that open luminaires must utilize a safety glass bottom (SGB) accessory or an Open rated socket (OR) and lamp. 2 200, 250, 300, 350, 400 and 450W only. 4 277V only. not available with OR or EM option. 5 Not available with H or HC. 6 300, 350 and 450W only (See ECON section for list of current approved lamps at www.cooperlighting.com). 7 Factory set for concentrated, medium or wide distributions only if F (factory pre-set) is in the nomenclature of the fixture. 8 HPS only. 9 Standard 30°C ambient environments. 10 Products also available in non-US voltages and 50Hz for international markets. 11 MD available in 208, 240 or 277V or with "E" option which will operate voltages from 200-277V 50/60 Hz. 12 Multi-Tap ballast: 208/240/277/480V wired 277V. 13 Triple-Tap ballast: 208/277/347V wired 277V. 14 4-Tap ballast: 208/240/277/480V wired 480V. 15 Metal Halide. 16 Must be listed in order shown and separated by a dash. 17 Not available with OR, WC, option. 17.30 second time delay when switching from bright to dim. Consult individual lamp manufacturers recommendations for compatible lamps. For use with OR or ECON® ballast only. 18 Not available with OR or ECON® ballast only. 19 Specify when using KD lamp type only.
APPLICATION

The SE E&G VertX aisle lighter is ideal for higher mounting height warehouse applications. Its unique distribution pattern delivers high horizontal illumination while reducing “scallops” or hot spots for a more uniform vertical surface.

ORDERING INFORMATION

**SAMPLE NUMBER:** HPSE-ENA19-M-400-MT-Q

**LAMP TYPE**
- **HP=High**
- **MH=Medium**
- **ML=Low**

**SERIES**
- **SE=E&G**

**REFLECTOR TYPE**
- **EM=Enclosed**
- **Gated=VertX**

**REFLECTOR DIAMETER**
- 19-19'

**SOCKET POSITION/DISTRIBUTION**
- C=Concentrated
- M=Medium
- W=Wide

**SHELL**
- **138=High**
- **175=High**
- **200=High**
- **250=Medium**
- **320=Wide**
- **350=Wide**
- **400=Wide**
- **450=Wide**

**VOLTAGE**
- 120V
- 208V
- 240V
- 277V
- 347V
- 400V
- 480V

**OPTIONS**

- **TPPH=Thru-Way Pendant Power Hook–Single Fuse, 120, 277 or 347 Volt, Requires FL-1 and PHC, Specify Voltage**
- **TPPH-F-TW=Thru-Way Pendant Power Hook–Double Fused, 120, 240 or 480 Volt, Requires FL-1 and PHC, Specify Voltage**
- **TPPH-F-SD=Thru-Way Pendant Power Hook–Single Fuse, Quick Disconnect, Requires FL-1 and PHC, Specify Voltage (120, 277, or 347V)**
- **TPPH-F-F=Thru-Way Pendant Power Hook–Double Fused, Quick Disconnect, Requires FL-1 and PHC, Specify Voltage (208, 240 or 480V)**
- **TPP=Thru-Way 31/16" Mounting Box**
- **MBT=Bracket (Fixtures must be same voltage, wattage and without hooks, loops or plugs)**
- **WSR=Wire Guard with Safety Glass Bottom**
- **WG=Wire Guard with Safety Bottom**

**ACCESSORIES**

- **SCF6=6' Cable (See Below)**
- **PC6=6' Cord-No Plug-Requires FH-1, FL-1, or SHK**
- **TG19=19" Wire Guard with Safety Glass Bottom (Alternative lengths available. Please refer to MWS Modular Wiring System section for additional information)**
- **TWMBS=Thru-Way Modular Wiring System (Use with 3' Cord-No Plug-Requires FH-1, FL-1, or SHK)**
- **TPPH-NEMA=Thru-Way Pendant Power Hook-NEMA. Specify Voltage (208, 240 or 480V)**

**NOTES**

1. Not available in 175, 200, 350 and 450W.
2. HP, MH, ML, and MP not available with 350W NEMA.
3. 3' Cord-No Plug-Requires FH-1, FL-1, or SHK
4. HP, MH, ML, and MP not available with 350W NEMA.
5. HP, MH, ML, and MP not available with 350W NEMA.
**ORDERING INFORMATION**

**SAMPLE NUMBER:** HPEB-ENAV19-M-400-MT-Q

**LAMP TYPE**
- HP=High Pressure Sodium
- MH=Metal Halide
- MP= Pulse Start MH (CWA)
- ML= Pulse Start MH (Linear Reactor)
- MD= Pulse Start Metal Halide (Electronic)

**REFLECTOR TYPE**
- ENAV=Enclosed & Gasketed VertX
- PHC=XXXV-NEMA
- TPPH-XXXV-NEMA
- PC3=XXXV
- SHK

**REFLECTOR DIAMETER**
- 19’=3’ [762mm]
- 19’=483mm

**SOCKET POSITION/DISTRIBUTION**
- C=Concentrated
- M=Medium
- W=Wide

**LUMARK®**

**OPTIONS**
- Quartz Restrike (Quartz lamp will not come on at initial cold start)
- Toolless Entry
- Effective Range 0-10V DC Low voltage leads pulled out of top connection box for areas requiring all wiring to be installed in conduit.
- LumaWatt Fixture Control Module (Low voltage leads pulled out of top connection box for areas requiring all wiring to be installed in conduit.)
- Integral 0-10V Sensor and with Wide Distribution Control for ECON® Electronic Ballast
- Integral LumaWatt Sensor and with Wide Distribution Control for CWA Magnetic Ballast
- Quiet Ballast (Available on the Benchmark ballast housing only)
- Corona Lamp Included (Lamp is Cooper designated product based on luminaire requirements. Lamp is shipped separate from luminaire unless otherwise noted)
- Wire Guard with Safety Glass Bottom

**ACCESSORIES**
- Fl=Fixture Hook
- Fl=Fixture Loop
- SHK=Husk with Safety Screw
- PC3-XXXV=3 cord with NEMA plug (120V-L5-15P, 208V-L6-15P, 240V-L6-15P, 347V-L3-20P, and 480V-L8-20P). Other cord lengths are available by specifying length (P50 for 6’ cord). Requires F1, FL, or SHK. Requires F1, FL, or SHK.
- PHC-XXXV=Power Cord and Plug
- TPPH-XXXV=Thru-Way Pendant Power Hook

**ACCESSORIES 1**
- TN=Triple-Tap (800V-7T-20P)
- TT=Triple-Tap (120V-10T-20P)
- MT=Multi-Tap

**ACCESSORIES 2**
- SCF6=6’ Cable

**EXAMPLE**
- PHC-XXXV-NEMA=Power Cord and NEMA Plug
- TPPH-XXXV-NEMA=Thru-Way Pendant Power Hook

**OPTIONS + ACCESSORIES**
- QD=Quick Disconnect Die-Cast Pendant Mount Box (Specify Single Voltage. Not compatible with PC3, PHC, C3, 302, or VS)
- W=Wet Location Listed Luminaires

**APPLICATION**

The EB & G VertX aisle lighter is ideal for higher mounting height warehouse applications. Its unique distribution pattern delivers high horizontal illumination while reducing “scallops” or hot spots for a more uniform vertical surface.

**MOUNTING**

Easy slide-on die-cast aluminum mounting box with tapped opening for 3/4’’ conduit.

**HOUSING**

Durable heavy-duty die-cast aluminum housing for lasting performance in the harshest environments. Integrally for ease of maintenance with optional toolless entry. Finished in a white polyester powder coat.

**BALLAST**

High-power factor ballast with class II insulation. Minimum starting temperature is -40°C (-40°F). HPS available in 208, 240, or 277V. Other cord lengths are available by specifying length (P50 for 6’ cord). Requires F1, FL, or SHK. Requires F1, FL, or SHK.

**SOCKET**

Mogul-base porcelain socket.

**NECK**

Die-cast aluminum neck with snap-mounted brasses for eight-position adjustability of the socket which provides a variety of distributions from concentrated to wide.

**REFLECTOR**

Computer aided designed, reflector mounts easily and allows multiple distribution patterns for precise control. Special contours and unique system of facets minimizes arc tube voltage rise.

**LENS**

Clear tempered glass lens in an extruded aluminum forged die frame with brushes to allow access for recharging without tools.

**SHIPPING DATA**

Approximate Net Weight: 34.47 lbs. (15.21 kgs.)
VertX
Vertical Aisle Lighter High-Bay Luminaire