

cityofnovi.org

# CITY of NOVI CITY COUNCIL

Agenda Item 6  
August 25, 2008

**SUBJECT:** Approval to award bid for Ella Mae Power Park Softball Complex, Police Station and Civic Center Parking Lot Lighting Project to Rauhorn Electric, Inc., the low bidder, in the amount of \$890,391.

**SUBMITTING DEPARTMENT:** Parks, Recreation & Forestry

**CITY MANAGER APPROVAL**

|                               |  |
|-------------------------------|--|
| <b>EXPENDITURE REQUIRED</b>   | <b>\$890,391</b>   |
| <b>AMOUNT BUDGETED</b>        | <b>\$0 (07/08 Rollover Budget Amendment)</b>   |
| <b>APPROPRIATION REQUIRED</b> | <b>\$549,620 (Park Improvements)</b><br><b>\$251,825 (Building Improvements)</b><br><b>\$88,946 (Forfeiture Funds)</b>                             |
| <b>LINE ITEM NUMBER</b>       | <b>208-691.00-974.081 (Park Improvements)</b><br><b>101-265.00-976.000 (Building Improvements)</b><br><b>266-266.00-976.000 (Forfeiture Funds)</b> |

**BACKGROUND INFORMATION:**

In the FY 07/08, City Council awarded engineering and design services to Integrated Design Solutions (IDS), for Ella Mae Power Park Softball Complex Field Lighting, Civic Center Parking Lot and Pedestrian Lighting, and Police Headquarters Lighting. Specification and bid documents for demolition and construction were prepared and distributed. Seven bids were received, the low bidder is Rauhorn Electric, Inc. (Bid Summary attached).

| <i>Company</i>          | <i>Bid Amount</i> |
|-------------------------|-------------------|
| <b>Rauhorn Electric</b> | <b>\$890, 391</b> |
| J. Rank Electric        | \$940,894         |
| Custer Electric         | \$964,561         |
| Shoreview Electric      | \$1,010,000       |
| Corby Energy Services   | \$1,070,000       |
| AB Electrical           | \$2,270,849       |

Upon review of the bids an additional \$319,261 is required to complete all three projects, as outlined in the August 14 memo forwarded to Mayor and City Council Members, (Athletic Field Lighting \$24,190, Civic Center Lighting \$206,125, and Police Department Lighting \$88,946). Staff recommends the funding shortfall is offset from Park General Fund Balance, Federal Forfeiture Funds, savings on Property & Liability Insurance and the General Fund-Fund Balance, to be included in the first quarter budget amendment.

Athletic Field lighting will utilize the Musco Green System. This system fits all fixtures with glare shields that direct light to the playing surface eliminating spill and reducing the number of bulbs necessary to achieve necessary lighting levels. Parking lot and pedestrian lighting fixtures utilize metal halide bulbs and ballasts designed to maximize light output and minimize associated energy costs. IDS has investigated alternative lighting technology, LED Lighting. Research has indicated

that the amount of additional bulbs, fixtures, poles, and funding necessary; coupled with the rate that LED ballast technology is changing is not in the City's best interest at this time.

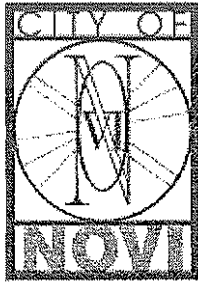
Rauhorn Electric Inc. has satisfactorily completed several Michigan Department of Transportation projects in the past, in addition to working for the Canton Downtown Development Authority and the University of Michigan. If awarded, construction is scheduled to begin in September 2008 and will be completed by January 2009.

**RECOMMENDED ACTION:** Approval to award bid for Ella Mae Power Park Softball Complex, Police Station and Civic Center Parking Lot Lighting Project to Rauhorn Electric, Inc., the low bidder, in the amount of \$890,391.

|                                | 1 | 2 | Y | N |
|--------------------------------|---|---|---|---|
| <b>Mayor Landry</b>            |   |   |   |   |
| <b>Mayor Pro Tem Capello</b>   |   |   |   |   |
| <b>Council Member Crawford</b> |   |   |   |   |
| <b>Council Member Gatt</b>     |   |   |   |   |

|                                | 1 | 2 | Y | N |
|--------------------------------|---|---|---|---|
| <b>Council Member Margolis</b> |   |   |   |   |
| <b>Council Member Mutch</b>    |   |   |   |   |
| <b>Council Member Staudt</b>   |   |   |   |   |

## MEMORANDUM



cityofnovi.org

**TO:** Clay Pearson, City Manager

**FROM:** Kathy Smith-Roy, Finance Director

**CC:** Pam Antil, Assistant City Manager  
Randy Auler, Director of Parks, Recreation & Forestry

**SUBJECT:** Lighting projects – August 25 Agenda

**DATE:** August 21, 2008

---

The recommended funding for the Police Facility lighting is the Federal Forfeiture Funds. To date the Finance Department is confident that as of the year-end close there will be sufficient Federal Forfeiture Funds to cover this cost, with an estimated available balance of \$90,000.

The recommended funding for the remainder of the Power Park and Civic Center Facility lighting is the General Fund-Fund Balance and the estimated savings of \$127,000 from the actual vs. budgeted figures for the Property and Liability Insurance. The General Fund-Fund Balance is anticipated to be greater than anticipated because of greater revenue (i.e. interest earnings), and lower than anticipated expenditures in various areas. The potential liability, in particular with the Civic Center Facility lighting, provides additional financial justification for proceeding with this project.

If you have any questions, or need any additional information, please let me know.

# MEMORANDUM



**TO:** RANDY AULER, PARKS RECREATION & FORESTRY  
DIRECTOR *R. Auler*

**FROM:** MATT WIKTOROWSKI, SUPERINTENDENT OF PARKS *M.W.*

**SUBJECT:** ELLA MAE POWER PARK, POLICE STATION AND CIVIC  
CENTER PARKING LOT LIGHTING REPLACEMENT  
PROJECTS

**DATE:** AUGUST 14, 2008

*8-14-08  
To: Mayor and City  
Council Members*

*Below is information on a forthcoming  
recommendation being finalized for  
consideration.*

## BACKGROUND

The purpose of this memorandum is to provide information on Ella Mae Power Park Softball field lighting improvements, Police Station and Civic Center parking lot lighting replacement project. The bids received are over the budget number formulated earlier, however, remain a high priority. Staff are evaluating option to resolve the financial shortfall and complete all three projects.

Specification and bid documents were prepared by Integrated Design Solutions (IDS). Seven bids were received and opened on July 22, 2008 following a public bid solicitation period. The low bidder is Rauhorn Electric, Inc. A summary of the seven bids follows:

| <i>Company</i>        | <i>Bid Amount</i> |
|-----------------------|-------------------|
| Rauhorn Electric      | \$890,391.00 ✓    |
| J. Rank Electric      | \$940,894.00      |
| Custer Electric       | \$964,561.00      |
| Shoreview Electric    | \$1,010,000.00    |
| Corby Energy Services | \$1,070,000.00    |
| AB Electrical         | \$2,270,849.00    |

## POWER PARK LIGHTING

In the FY 07/08 budget, City Council allocated \$560,000 to complete the Power Park softball field lighting project. In January 2008, City Council awarded a contract to IDS in the amount of \$34,570, for engineering and design of a pedestrian and athletic field lighting system. The existing athletic field lighting was found to be unsafe for use, because the current lighting provides only 5-7 foot candles of light in many areas of the fields. The recommended standard is 50 foot candles for the infield and 30 foot candles for the outfield. The new lighting system will meet the recommended candle foot standards, therefore making the field safe for use at night. The new system also includes a 25 year warranty and maintenance program covering all labor and materials on athletic field lighting.

The base bid, for the softball field lighting is \$549,620. After deducting engineering and design fees it is estimated that the department will require \$24,190 in additional funding to complete this project. Staff recommend the \$24,190 funding shortfall be funded from the Parks,

Recreation & Forestry Fund Balance which exceeded \$100,000 above projected estimates for the FY 07/08 period. The department is currently being considered to host a national tournament in the summer of 2009 which requires the designed lighting levels. Tournaments of this size are estimated to have an economic impact for the community of over \$1,000,000.

### **CIVIC CENTER LIGHTING**

In the FY 06/07, City Council awarded \$61,500 to replace lighting at the Novi Civic Center. Over the past two years the Novi Civic Center has had two light poles fall from their foundations. After recommendation on February 25, 2008 City Council awarded a contract to IDS, in the amount of \$15,800 for engineering and design for parking lot and pedestrian lighting. After inspection of the 25 year old foundations, anchor bolts, and poles it was determined that the foundations are faulty and a complete replacement system was recommended. Previously the Civic Center parking lot was expanded to accommodate more vehicles, however at that time no additional lighting was included with the project, therefore the parking lot is not well lit. The new system will comply with current building codes and provide necessary light levels, not provided by our existing system. Pedestrian lighting throughout the civic and park complex will be 16' tall with double sheppard hooks. Additional mast arms will also be installed for promoting the community and events with marketing banners. The parking lot poles and fixtures will use a standard shoe box design that match existing heights. These fixtures will be fitted with metal halide bulbs and state of the art ballasts designed to maximize light output and minimize associated energy costs. IDS has been proactive investigating alternate LED technology while meeting all building requirements. Research has indicated that the amount of additional bulbs, poles, and funding necessary; coupled with the rate that ballast technology is changing is not in the City's best interest at this time. Please see attached photos of all fixtures that will be utilized for this project.

The bid for the Civic Center Parking Lot Lighting project was \$251,825. After deducting engineer and design fees it is estimated that \$206,125 in additional funds are needed to complete this project. Staff recommend the shortfall be funded through the savings on property and liability insurance \$127,400, and General Fund-Fund Balance \$78,725 to be included in the first quarter budget amendment

### **POLICE STATION**

After completing the inspection on the Civic Center lighting the Police Headquarters was considered for inspection. An additional \$7,668 from police professional services was awarded to Integrated Design Solutions for engineering and design after their inspection yielded results of crumbling foundations, inadequate pole spacing, and non compliant wiring throughout the complex. A construction amount was not budgeted for the FY 08/09. The bid to replace the parking lot lighting at the Police Station is \$88,946 and staff recommended it be funded from Federal Forfeiture Funds. Please see the attached memorandum from Chief David E. Molloy.

### **SUMMARY**

In summary, the additional \$319,261.00 is funded from Park general fund balance, Federal Forfeiture Funds and savings on property and liability insurance and the General Fund-Fund

Balance. Staff recommend the contract be awarded to Rauhorn Electric Inc., the low bidder in the amount of \$890,391. Rauhorn Electric Inc. has satisfactorily completed several Michigan Department of Transportation projects in the past, in addition to working for the Canton Downtown Development Authority and University of Michigan. The contracts and supporting documents are being prepared, and will be presented for City Council approval at the August 25<sup>th</sup> meeting. If awarded, construction is scheduled to begin in September 2008 and will be completed by January 2009.

#### **ITC COMMUNITY SPORTS PARK MAINTENANCE FACILITY UPDATE**

In addition to the aforementioned projects, the department is currently working on the construction of a cold storage facility at ITC Community Sports Park. The department received bids for the construction of a cold storage facility at ITC Community Sports Park. The lowest qualified bidder is \$186,168. The project budget is \$152,000, which include engineering, design and construction. The department is currently exploring alternative options for placement which would reduce fees associated with site work and pathway construction.

## MEMORANDUM



TO: MATT WIKTOROWSKI, SUPERINTENDENT OF PARKS  
FROM: DAVID E. MOLLOY, CHIEF OF POLICE *DEM*  
SUBJECT: POLICE LIGHTING PROJECT  
DATE: AUGUST 13, 2008

As a result of our August 5<sup>th</sup> team meeting with Integrated Design Solutions, I respectfully request to have the parking lot lights in the Police Department parking areas added to the overall scope of the lighting project at the Civic Center campus. Based upon the information presented regarding the structural integrity of the light pole bases and aging bolts, I strongly believe the replacement of these lights is merited as soon as practically possible.

It is my understanding the Police Department portion of this project is estimated at \$89,946. Since this portion of the project was not included as part of the FY 2008/2009 budget, I am recommending the use of Federal Forfeiture funds to cover the Police Department's share of costs. Utilizing Federal Forfeiture funds to replace the lights at Police Headquarters is a permissible use under guidelines published by the U.S. Department of Justice.

Lieutenant Keith Wuotinen will serve as the Police Department's point of contact on this project. In the event a power interruption may occur over the course of this project, please notify Lieutenant Wuotinen at your earliest opportunity.

In closing, I would like to thank you for all the time, effort and assistance you have dedicated towards the planning and implementation of this very important project. If you have any questions or require additional information, please don't hesitate to contact me.

C: Kathy Smith-Roy, Finance Director  
Tom Lindberg, Deputy Police Chief  
Keith Wuotinen, Lieutenant  
Pat Cauchi, Analyst - Planner



Integrated Design Solutions August 5, 2008

888 W. Big Beaver, Ste. 200  
Troy, MI 48084  
tel 248.823.2100  
fax 248.823.2200

www.ids-troy.com

Mr. Matt Wiktorowski  
Superintendent of Parks  
City of Novi  
Parks Maintenance Garage  
26300 Delwal  
Novi, MI 48375

Project Name: Ella Mae Power Park, Police Station and  
Civic Center Lighting Replacement Projects

IDS Project No.: 08110-1000

Dear Mr. Wiktorowski:

Six bids were received and opened on Tuesday, July 22, 2008. IDS conducted a telephone bid review with the apparent three low bid contractors:

Rauhorn Electric; Todd Underhill (586) 992-0400  
Custer Electric; Craig Custer (765) 645-5511  
J. Ranck Electric; Jim Lavert (800) 792-3822

An additional conference call was held on Thursday, July 31, 2008, with yourself, Todd Underhill and Gary Konyha, both of Rauhorn Electric, and myself. We determined the Alternate # 1 deduct was to include the use of direct buried precast concrete pole bases and the Musco Lighting System for the softball field lighting. Alternate #4 add for maintenance warranty would not be needed due to Musco offering a maintenance free warranty included in their price for the softball field lighting.

IDS recommends that the City of Novi:

1. Not accept Alternate #4, and
2. Accept the following:

|                    |                     |
|--------------------|---------------------|
| Base Bid:          | \$589,620.00        |
| Alternate # 1:     | (\$40,000.00)       |
| Alternate # 2:     | \$ 88,946.00        |
| Alternate # 3:     | <u>\$251,825.00</u> |
| For a total award: | \$890,391.00        |

3. Award the contract to Rauhorn Electric for \$890,391.00.

Sincerely,

Dennis C. Schlitt  
Senior Engineer  
Electrical Engineering  
INTEGRATED DESIGN SOLUTIONS, LLC

cc: File

F:\2008\08110\1000\corr\design\lfr007.docx

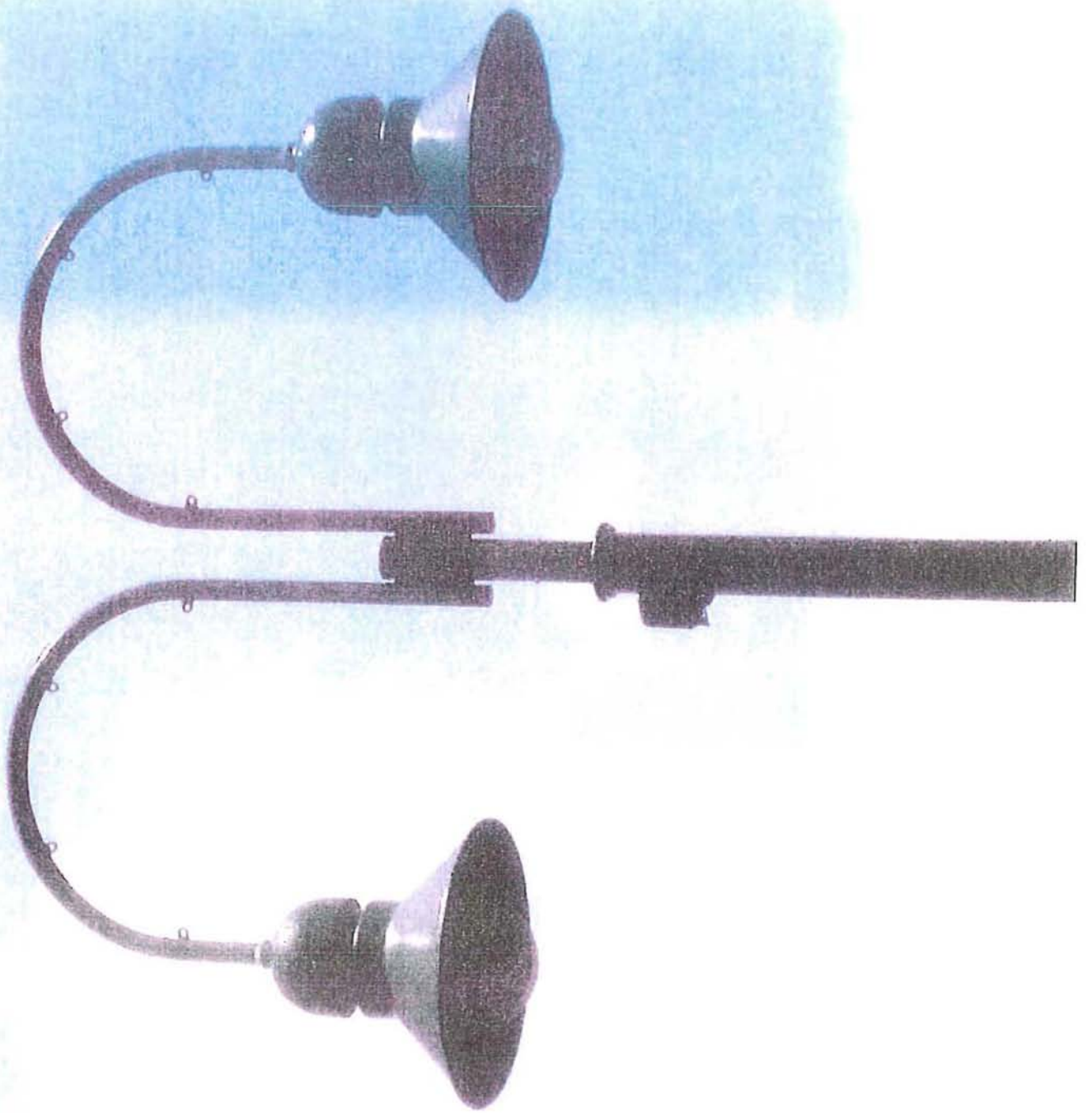


CITY OF NOVI

Lighting Replacement - Power Park, Police Station, Civic Center Bid Tab

Tuesday, July 22, 2008 3:00 p.m.

| Company                           | Base Bid       | Alternate #1 - alternate design for softball field lighting (Add/Deduct) | Alternate #2 - All work associated with PD lighting as identified on drawing E2.2 (Add) | Alternate #3 - All work associated with Civic Center lighting as identified on drawing E2.2 (Add/Deduct) | Alternate #4 - 15 yr. maintenance warranty on softball field lighting (Add) |
|-----------------------------------|----------------|--|---|--|---|
| Rauhorn Electric                  | 589,620        | -40,000  | 88,946  | 251,825  | 25,000  |
| Custer Electric                   | 598,000        | no bid   | 94,107  | 242,739  | 29,715  |
| Shoreview Electric                | 629,000        | -26,000  | 108,000   | 319,000  | 0   |
| Corby Energy Services             | 695,000        | -10,000  | 95,000  | 290,000  | 0   |
| Corby Energy Services - alternate | deduct \$2,500 | 0  | deduct \$6,500  | deduct \$20,500  | 0   |
| J. Ranck Electric                 | 705,597        | -79,999  | 80,658  | 234,638  | no change   |
| A/B Electrical                    | 2,399,000      | 294,630 ***  | 39,459  | 97,020   | 30,000  |





Architectural Arm-Mounted Cutoff

**KSE**

Symmetra™



Ordering Information

| Designation                 | Distribution                                  |
|-----------------------------|---|
| <u>High pressure sodium</u> |   |
| KSE1 70S                    | R3 Type III asymmetric                        |
| KSE1 100S                   | R4SC Type IV wide, forward throw              |
| KSE1 150S                   |   |
| KSE2 250S                   | R4W Type IV wide, forward throw (size 2 only) |
| KSE2 400S                   | R5S Type V square (size 2 only)               |
| <u>Metal halide</u>         |   |
| KSE1 100M                   |   |
| KSE1 150M <sup>1</sup>      |   |
| KSE1 175M                   |   |
| KSE1 200M <sup>2</sup>      |   |
| KSE2 250M <sup>1</sup>      |   |
| KSE2 320M <sup>2,3</sup>    |   |
| KSE2 350M <sup>2,3</sup>    |   |
| KSE2 400S                   |   |

**Intended Use**  
For car lots, street lighting or parking areas.

**Features**  
**Housing** – Rugged, heavy-gauge, extruded aluminum housing. Square shape, seam-welded and internally sealed for weathertight integrity. Standard finish is dark bronze corrosion-resistant polyester powder (DDB). Architectural Class 1 anodize finish and other architectural colors available.  
**Optics** – Anodized, segmented reflectors for uniformity and control. Reflectors are tool-less, rotatable and interchangeable. Five cutoff distributions available: R2 (roadway), R3 (asymmetric), R4SC (forward throw, sharp cutoff), R4W (wide, forward throw) and R5S (symmetric).  
**Door Frame** – Natural anodized, extruded aluminum door frame sealed to housing by silicone closed-cell gasket. Can be hinged from any of the four sides.  
**Lens** – .125"-thick, impact-resistant tempered glass.

**Mounting** – Extruded 4" aluminum arm for square pole mounting, shipped in fixture carton as standard. Optional mountings available.

**Electrical** – High reactance, high power factor for 150W and below. Constant wattage autotransformer for 175W and above. Copper wound and 100% factory tested. Removable power tray and positive-locking disconnect plug.

**Socket** – iMedium-base socket for 150W iMH and below. Mogul-base porcelain socket with copper alloy, nickel-plated screw shell and center contact. UL Listed 1500W-600V. 4KV pulse rated.

Listings

UL Listed (standard). CSA Certified or NOM Certified (see Options). UL Listed for wet locations.

Example: KSE1 150S R2 120 SP09 PER LPI

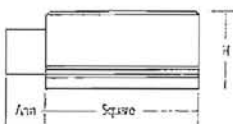
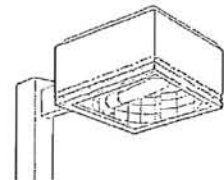
| Voltage          | Mounting                                    |
|------------------|---|
| 120              | <u>included</u>                             |
| 208 <sup>4</sup> | SP04 4" square pole arm (std.) <sup>5</sup> |
| 240 <sup>4</sup> | SP09 9" square pole arm                     |
| 277              | RP04 4" round pole arm <sup>6</sup>         |
| 347              | RP09 9" round pole arm                      |
| 480 <sup>7</sup> | WB04 4" wall bracket                        |
| TB               | WB09 9" wall bracket                        |
|                  | <u>Shipped separately</u>                   |
|                  | KMA Mast arm adapter                        |
|                  | KTB Twin mounting bar                       |
|                  | DA12P Degree arm (pole)                     |
|                  | DA12WB Degree arm (wall)                    |

| Options/accessories   |
|---|
| <u>Installed</u>  |
| LPI Lamp included   |
| L/LP Less lamp  |
| SF Single fuse, 120V, 277V, 347V (n/a TB)   |
| DF DF (see page 540)  |
| PER NEMA twist-lock receptacle only (no photocontrol)                                       |
| QRS Quartz restrrike system (100W max. in KSE1, 150W max. in KSE2, 120V lamp not included). |
| CR Enhanced corrosion resistance  |
| EC Emergency circuit  |
| SCWA Super CWA pulse start ballast (n/a HPS or 103M, 175M)                                  |
| CSA CSA Certified   |
| NOM NOM Certified (consult factory)   |
| For optional architectural colors, see page 543.  |
| <u>Shipped separately</u>   |
| PE1 NEMA twist-lock PE (120V-240V)  |
| PE3 NEMA twist-lock PE (347V)   |
| PE4 NEMA twist-lock PE (480V)   |
| PE7 NEMA twist-lock PE (277V)   |
| SC Shorting cap for PER option  |
| KSE1HS House-side shield (R2, R3 only)  |
| KSE2HS House-side shield (R2, R3 only)  |
| KSE1VG Vandal guard   |
| KSE2VG Vandal guard   |
| For toner slipcovers, see page 540.   |

- NOTES:**
- 1 May be ordered with SCWA.
  - 2 Must be ordered with SCWA.
  - 3 Must use EDB lamp.
  - 4 Consult factory for availability in Canada.
  - 5 Optional multi-tap ballast (120V, 208V, 240V, 277V). In Canada 120V, 277V, 347V, ships as 120V/347V.
  - 6 Use 9" arm when mounting two luminaires at 90°.
  - 7 Includes mounting arm.

Dimensions are shown in inches (centimeters) unless otherwise noted.

|                   | KSE1                                      | KSE2                                      |
|-------------------|---|---|
| EPAC <sup>2</sup> | 1.3 ft <sup>2</sup> (.12 m <sup>2</sup> ) | 1.9 ft <sup>2</sup> (.18 m <sup>2</sup> ) |
| Square            | 15-11/16 (39.6)                           | 19 (48.3)                                 |
| Height            | 8-3/4 (22.2)                              | 10-15/16 (27.6)                           |
| Max. weight       | 26.6 lbs (12.1 kg)                        | 29.9 lbs (13.1 kg)                        |



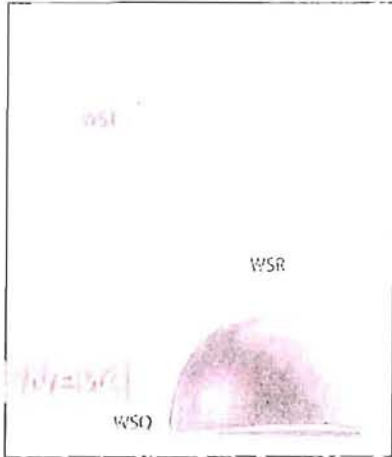
www.lithonia.com, keyword: KSE



Consistent with LEED goals & Green Globes criteria for light pollution reduction

Architectural

# WST/WSR/ WSQ



**Intended Use**

For building- and wall-mounted applications.

**Features**

**Housing** – Rugged, die-cast, single-piece housing. Die-cast door frame has 1/8" thick tempered glass lens. Door frame is fully gasketed with one-piece solid silicone. Standard finish is textured dark bronze (DDBT) corrosion-resistant polyester powder with other architectural colors available.

**Optics** – Interchangeable, segmented reflectors for superior uniformity and control. Three full cutoff distributions available: FT (forward throw), MD (medium throw) and WT (wide throw). Four uplight distributions available in WSR only: FTU (forward throw, 10% up), MDU (medium throw, 10% up), WTU (wide throw, 10% up) and MDUS (up/down, medium throw, 50% up, 50% down). Compact fluorescent MD (medium throw) only.

**Electrical** – HID: 50W MH-150W utilizes a high reactance, high-power factor ballast. 35S and 50S utilizes a reactor normal-power factor ballast. 175W utilizes a constant-wattage auto

transformer ballast. Quick-disconnect plug easily disconnects reflector from ballast. Ballasts are copper wound and 100% factory tested. CFL: compact fluorescent ballast is Class P, electronic, high-power factor, <10% THD with starting temp. of 0° F (-18°C).

**Socket** - HID is porcelain, medium-base copper alloy, nickel-plated screw shell and center contact. (UL Listed 660W, 600V 4KV pulse rated). Fluorescent socket is high-temperature thermoplastic with integral lamp retention clip.

**Installation** – Universal mounting mechanism with integral mounting support allows fixture to hinge down. Bubble level provides correct alignment with each installation.

**Listings**

UL Listed suitable for wet locations (damp location listed in lens-up orientation). CSA Certified (see Options). IP65 rated.

**Ordering Information**

Example: WST 175M FT 120 SF LPI

| Series | Wattage                          | Distribution  | Voltage             | Options/accessories   |
|--------|----------------------------------|---|---------------------|---|
| WST    | High-pressure sodium             | Downlight distribution  | 120                 | Installed   |
| WSR    | 35S <sup>1</sup>                 | FT  | 208 <sup>4</sup>    | DF  |
| WSQ    | 50S                              | MD Medium throw (coated lamp standard)  | 240 <sup>4</sup>    | DMF   |
|        | 70S                              | WT Wide throw   | 277                 | EC  |
|        | 100S                             | Uplight distribution <sup>3</sup>   | TB <sup>5</sup>     | DC12  |
|        | 150S                             | FTU Forward throw with 10% uplight  | TBVS <sup>5</sup>   | 2DC12   |
|        | Metal halide                     | MDU Medium throw with 10% uplight (coated lamp standard)                          | 120VLT <sup>7</sup> | DC2012  |
|        | 50M                              | WTU Wide throw with 10% uplight   |                     | 2DC2012   |
|        | 70M                              | MDUS Up/down medium throw with 50% uplight & 50% downlight (coated lamp standard) |                     | ELDW  |
|        | 100M                             |   |                     | ELDW/R  |
|        | 150M                             |   |                     | ELDW/C  |
|        | 175M                             |   |                     | QRS   |
|        | Compact fluorescent <sup>2</sup> |   |                     | CR  |
|        | 26DIT                            |   |                     |   |
|        | 2/26DIT                          |   |                     |   |
|        | 32TRT                            |   |                     |   |
|        | 2/32TRT                          |   |                     |   |
|        | 42TRT                            |   |                     |   |
|        | 2/42TRT                          |   |                     |   |
|        |                                  |   |                     | CRT Non-stick protective coating <sup>14</sup>                  |
|        |                                  |   |                     | PE Photoelectric cell-button type (n/a TB or TBV) <sup>16</sup> |
|        |                                  |   |                     | WLU Wet location door for up orientation                        |
|        |                                  |   |                     | IBS Internal backlight shield <sup>16</sup>                     |
|        |                                  |   |                     | DFL Diffusing lens  |
|        |                                  |   |                     | LPI Lamp included   |
|        |                                  |   |                     | L/LP Less lamp  |
|        |                                  |   |                     | UCS Uplight component shield <sup>17</sup>                      |
|        |                                  |   |                     | CSA CSA Certified   |
|        |                                  |   |                     | Architectural colors <sup>18</sup>                              |
|        |                                  |   |                     | Standard textured colors  |
|        |                                  |   |                     | DSST  |
|        |                                  |   |                     | DHAT Natural aluminum   |
|        |                                  |   |                     | DWHG White  |
|        |                                  |   |                     | DBLB Black  |
|        |                                  |   |                     | Shipped separately  |
|        |                                  |   |                     | V/SBBIW Surface-mounted back box <sup>19</sup>                  |
|        |                                  |   |                     | UTS Uplift 5 degrees <sup>19</sup>                              |
|        |                                  |   |                     | WSTVWG Wire guard (WST) <sup>15</sup>                           |
|        |                                  |   |                     | V/STVWG Vandal guard (WST) <sup>15</sup>                        |
|        |                                  |   |                     | V/SRVWG Wire guard (WSR and WSQ) <sup>15</sup>                  |
|        |                                  |   |                     | V/RSRVWG Vandal guard (WSR and WSQ) <sup>15</sup>               |

## Specification Mini Floodlights

**TFM**  
Contour<sup>®</sup>

**Intended Use**  
For signs, flags, building facades and landscaping.

**Features**  
Housing – Compact, heavy-duty construction. Die-cast aluminum housing and removable front bezel. Lens is thermal and shock-resistant, clear tempered glass. Standard finish is dark bronze (DDB) corrosion-resistant polyester powder.

Optics – Hydroformed, anodized aluminum, faceted parabolic (RB, RG) or die-formed (TA) construction provides high efficiencies.

Electrical – Ballast is high-reactance, high-power factor for 50-150W metal halide or constant wattage autotransformer for 175W metal halide. Ballast is reactor normal-power factor for high pressure sodium (XHP available). Ballast is copper wound and 100% factory tested. UL Listed. Electrical components mounted to the cast-aluminum housing for maximum heat-dissipation.

Socket – Porcelain, medium-base, horizontally-

oriented (RB, RG) or vertically-oriented (TA) socket with copper alloy, nickel-plated screw shell and center contact. UL Listed 1500W, 600V, 4-pin socket for compact fluorescent.

Installation – Die-cast aluminum 1/2" NPSM threaded mounting knuckle is standard. Corrosion-resistant painted steel yoke optional. Above-horizontal aiming standard. External screws treated for corrosion resistance.

### Listings

UL Listed (standard) (ambient temperature 25°C for 150M and above, 40°C for 100M and below; 150S and below). CSA Certified or NOM Certified (see Options). UL Listed for wet locations. IP65 rated.

*lightquick* XHP  
Express delivery products.

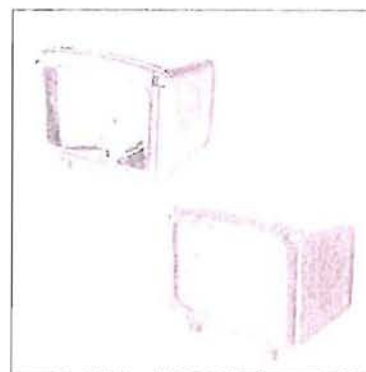
See page 11 for details about LightQuick XHP.

---

Description

---

TFM 175M RB YB LPI



Example: TFM 175M RB 120 LPI

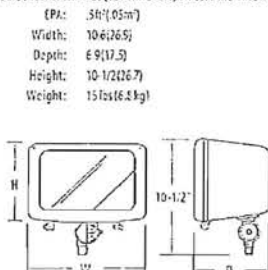
### Ordering Information

| Designation                 | Distribution          | Voltage            | Installed  | Options/accessories  |
|-----------------------------|-----------------------|--------------------|--|--|
| <b>High pressure sodium</b> |                       |                    |  |  |
| TFM 355 <sup>1</sup>        | TA (7x6) <sup>2</sup> | 120                | SF Single fuse, 120V, 277V, 347V <sup>13</sup>             | CSA CSA Certified <sup>14</sup>  |
| TFM 505                     | RB (6x5)              | 208 <sup>3</sup>   | LF   | NOM NOM Certified (consult factory)  |
| TFM 705                     |                       | 240 <sup>4</sup>   | GMF Internl slow-blow fuse, CF only (n/a MVOLT)            | SCWA Super CWA pulse start ballast (only available in 150M with TA distribution) |
| TFM 1005                    |                       | 277                | CR Enhanced corrosion resistance                           | <b>Shipped separately</b>  |
| TFM 1505                    |                       | 480                | CRT Non-stick protective coating <sup>10</sup>             | TFMVG Wireguard  |
| <b>Metal halide</b>         |                       |                    |  |  |
| TFM 50M                     |                       | TB <sup>5</sup>    | PE Photoelectric cell, button type (n/a 450V) <sup>6</sup> | TFMVG Vandal guard   |
| TFM 70M                     |                       | TBV <sup>7</sup>   | XHP High reactance high power factor ballast <sup>11</sup> | TFMUU Upper visor <sup>11</sup>  |
| TFM 100M                    |                       | MVOLT <sup>7</sup> | LPI Lamp included  | TFMUV Full visor <sup>14</sup>   |
| TFM 150M                    |                       |                    | L/LP Less lamp   | TFMVS Tenon slipfitter (2-3/8" OD tenon, for ground mounting only)               |
| TFM 175M                    |                       |                    | YK Yoke mounting   | TM Tenon mount <sup>15</sup>   |
| <b>Compact fluorescent</b>  |                       |                    |  |  |
| TFM 130TT                   |                       |                    | C62 2" 16-3 cord pre-wired                                 | For optional architectural color, see page 543.                                  |
| TFM 180TT                   |                       |                    | C42 2" 14-3 cord pre-wired                                 |  |
| TFM 260TT                   |                       |                    | C22 2" 12-3 cord pre-wired                                 |  |
| TFM 32TRT                   |                       |                    |  |  |
| TFM 42TRT                   |                       |                    |  |  |

#### NOTES:

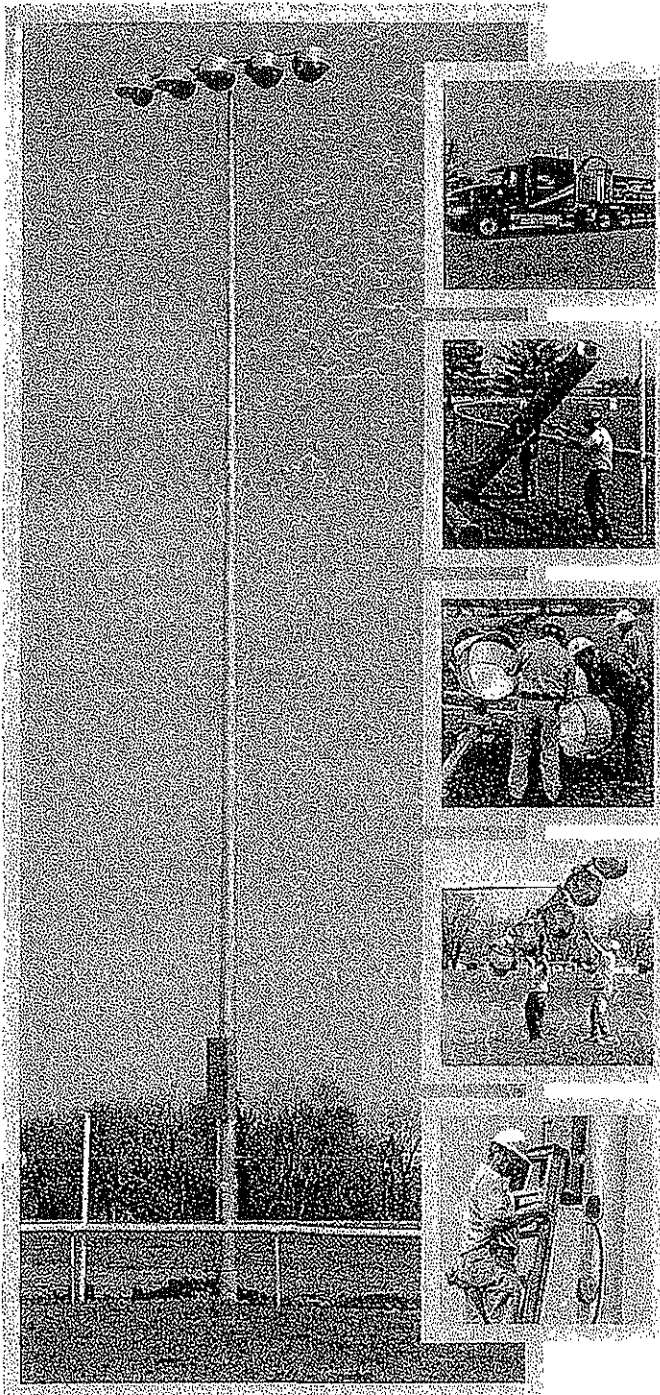
- 1 120V only, n/a XHP.
- 2 TA distribution not available with 175M, compact fluorescent lamps, 180V or fusing.
- 3 Consult factory for availability in Canada.
- 4 Not available in Canada.
- 5 Options multi-tap ballast (120V, 208V, 240V, 277V) in Canada 120V, 277V, 347V; ships as 120V/347V.
- 6 Optional 5-tap ballast (120V, 208V, 240V, 277V, 480V), n/a in Canada.
- 7 Optional multi-volt electronic ballast (for compact fluorescent lamps only) capable of operating on any line voltage from 120V-277V.
- 8 Not available in multi-tap ballast.
- 9 Not available with TA reflector.
- 10 Black finish only.
- 11 Available for 120V only. Standard for 208V, 240V, 277V, 347V, 1E and 1EV.
- 12 Yoke mounting only.
- 13 Not available with 180V.
- 14 Field modification required unless ordered with fixture.
- 15 Requires TMATS.

Dimensions are shown in inches (centimeters) unless otherwise noted.



| Lamp/Fixture Data                       |      |                 |           |  |             |
|---|------|-----------------|-----------|--|-------------|
| Wattage                                 | Hst. | Ballast         | Lamp type | Beam spread H <sup>2</sup> xV <sup>2</sup> | IESNA dist. |
| <b>High pressure sodium (med/clear)</b> |      |                 |           |  |             |
| 70                                      | RB   | RHP or XHP      | E17       | 9x104                                      | 5x6         |
| 70                                      | RG   | RHP or XHP      | E17       | 42x35                                      | 3x3         |
| 70                                      | TA   | RHP or XHP      | E17       | 131x103                                    | 7x5         |
| 150                                     | RB   | RHP or XHP      | E17       | 85x95                                      | 5x5         |
| 150                                     | RG   | RHP or XHP      | E17       | 57x65                                      | 4x4         |
| 150                                     | TA   | RHP or XHP      | E17       | 131x103                                    | 7x6         |
| <b>Metal halide (med/clear)</b>         |      |                 |           |  |             |
| 100                                     | RB   | XHP             | E17       | 83x108                                     | 5x5         |
| 100                                     | RG   | XHP             | E17       | 58x60                                      | 4x4         |
| 100                                     | TA   | XHP             | E17       | 128x117                                    | 6x6         |
| 175                                     | RB   | CWA             | ED17      | 97x105                                     | 5x5         |
| 175                                     | RG   | CWA             | ED17      | 52x35                                      | 4x4         |
| <b>Fluorescent</b>                      |      |                 |           |  |             |
| 260TT                                   | RB   | electronic, HPF | T4        | 175x132                                    | 6x6         |
| 42TRT                                   | RB   | electronic, HPF | T4        | 120x122                                    | 6x5         |

## Light-Structure GREEN™



### WARNING:

Personnel installing or servicing the Light-Structure Green™ system should observe all safety precautions related to high voltage equipment.

All personnel performing installation should wear proper safety equipment: hard hat, steel-toed shoes, gloves and eye protection as necessary; and follow proper procedures for the requirements of the task to ensure safety.

All wiring should be done by qualified personnel in accordance with applicable local, state and federal electrical codes.

Extreme caution should be exercised when working near overhead power lines or underground utilities. Verify location of any underground utilities around the job site prior to installation.

These instructions are not intended to be a comprehensive guide to all situations or problems which might arise. Any questions should be directed to the manufacturer at 800/825-6020.



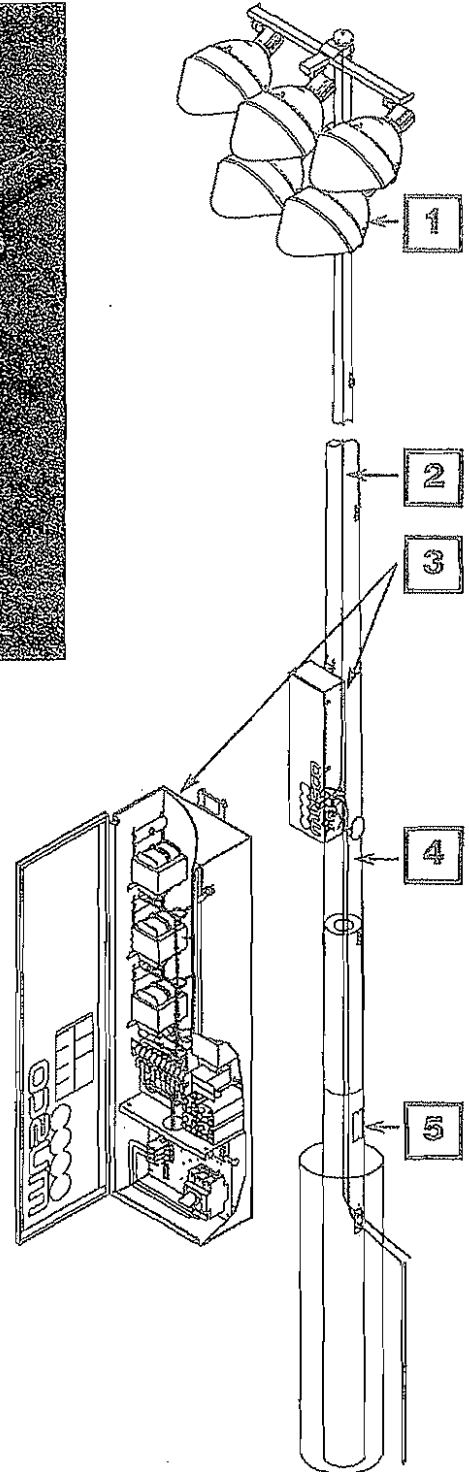
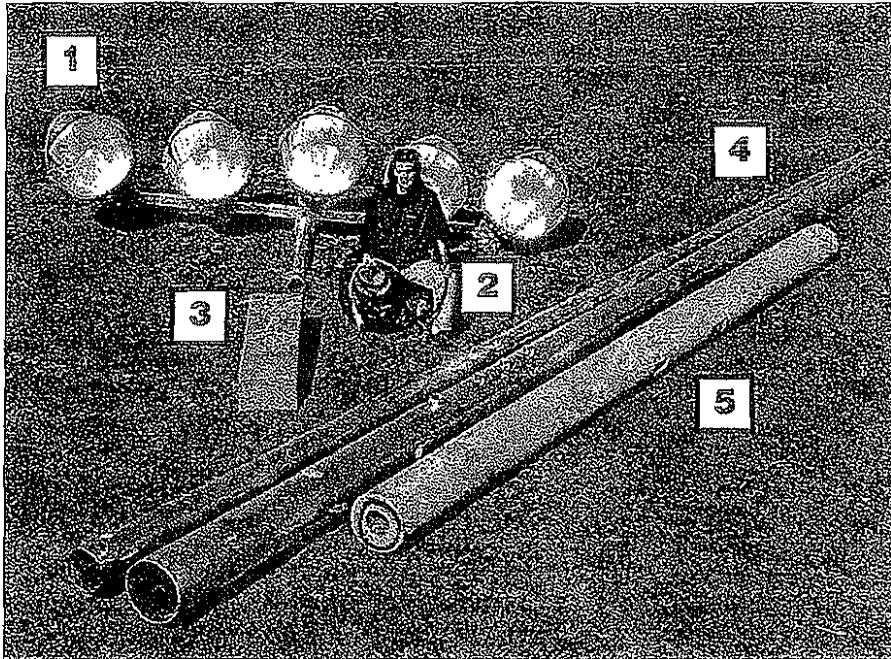
**We Make It Happen.**

800/825-6020  
www.musco.com  
lighting@musco.com

100 1st Avenue West / P.O. Box 808  
Oskaloosa, Iowa 52577  
641/673-0411 • Fax: 641/672-1996  
Warranty Fax: 888-397-8736

# Light Structure GREEN™...in 5 Easy Pieces™

Designed for fast, trouble-free installation



- 1** Poletop Luminaire Assembly
- 2** Wire Harness
- 3** Electrical Components Enclosure
- 4** Galvanized Steel Pole
- 5** Precast Concrete Base