

## Excelitas' Cermax VQ—

Lighting technology for demanding medical applications

## Cermax VQ

Xenon Elliptical and Parabolic Lamps

### Key Features and Benefits

- Reduced noise—significantly less cooling required resulting in less acoustic fan noise
- Longer lamp lifetime
- Improved heat sink design
- Unparalleled color performance—true bright, white 6000 K light for true color rendition
- Instant on-off
- Environmentally-safe—inert, non-toxic Xenon gas offers an environmentally-safe alternative to mercury-based lamps
- Flexible power ranges—product range operating from 275W – 425W
- RoHS Compliant

### Applications

- Fiber optic illumination—endoscopic, surgical headlamp, industrial
- Microscopy—surgical, fluorescence
- Spectroscopy
- Photo activation



### Overview

Cermax® VQ™ by Excelitas is the latest breakthrough in Xenon lighting technology. Cermax VQ is the premiere solution for medical lighting applications including endoscopy, surgical headlamps, and microscopy where performance and reliability are paramount.

Excelitas' Cermax VQ line delivers the unparalleled color performance that has made Cermax Xenon the medical industry standard for over 20 years. The patented VQ design satisfies the increasing demands of medical OEMs by providing longer lamp lifetime, improved lamp-to-lamp consistency, easy replacement, and a significant reduction in audible cooling noise for an ultra-quiet illumination system.

Cermax VQ products are available in our high-precision parabolic line (ME300BF and ME400BF) and elliptical line (ME300C-10F) of Xenon lamps and modules. All of the VQ products are manufactured utilizing diamond turning technology, providing an accurate beam profile and greatly improving lamp-to-lamp uniformity, coupling efficiency and system light output.

The Cermax VQ family is the right choice for supporting your next generation medical illumination system.

# Cermax VQ Xenon Elliptical and Parabolic Lamps

Table 1. Technical Specifications

| Type  |               | ME300C-10F       | ME300BF                  | ME400BF                  |
|---|---------------|------------------|--------------------------|--------------------------|
| Power   | Nominal       | 300 Watts        | 300 Watts                | 400 Watts                |
|   | Range         | 275-325 Watts    | 275-325 Watts            | 350-425 Watts            |
| Current                                       | Range         | 17-25 Amps       | 17-25 Amps               | 25-32 Amps               |
| Voltage                                       | Nominal       | 13 Volts         | 13.5 Volts               | 14.5 Volts               |
|   | Range         | 11-15 Volts      | 12-15 Volts              | 13-16 Volts              |
| Maximum operating temperature <sup>1</sup>    |               | 150° C           | 150° C                   | 150° C                   |
| Minimum ignition voltage at lamp <sup>2</sup> |               | 20 kV            | 20 kV                    | 20 kV                    |
| Minimum ignition pulse duration <sup>2</sup>  |               | 60 nS            | 60 nS                    | 60 nS                    |
| Radiant output <sup>3</sup>                   |               | 75 Watts         | 75 Watts                 | 100 Watts                |
| UV output <390nm <sup>3</sup>                 |               | 4 Watts          | 4 Watts                  | 6 Watts                  |
| IR output >770nm <sup>3</sup>                 |               | 37 Watts         | 37 Watts                 | 55 Watts                 |
| Visible output 390-770nm <sup>3</sup>         |               | 5000 Lumens      | 5500 Lumens              | 7500 Lumens              |
| Spot size at cross over                       | @ 50% points  | 3 mm             | -                        | -                        |
|   | @ 10% points  | 9 mm             | -                        | -                        |
| Beam divergence @ 10%                         | new           | -                | 10°                      | 10°                      |
|   | @ 100 hours   | -                | 12°                      | 12°                      |
|   | @ 1000 hours  | -                | 15°                      | 15°                      |
| Window diameter                               |               | 1 inch / 25.4 mm | 1 inch / 25.4 mm         | 1 inch / 25.4 mm         |
| Color temperature                             |               | 6000 Kelvin      | 6000 Kelvin              | 6000 Kelvin              |
| Focused output <sup>4</sup>                   |               |                  |                          |                          |
|   | 6 mm aperture | 3500 Lumens      | 4000 Lumens <sup>5</sup> | 6200 Lumens <sup>5</sup> |
|   | 3 mm aperture | 1600 Lumens      | 2000 Lumens <sup>5</sup> | 3400 Lumens <sup>5</sup> |

## Technical Specifications Notes

Unless minimum or maximum values are stated, values are nominal and may vary.

Specifications subject to change without notice.

(1) Optimum operating temperature 100 – 130° C

(2) Ignition requirements assuming use of a PerkinElmer-approved power supply

(3) Total nominal output from lamp in all directions

(4) Measured after 2 hours of operation

(5) Measured with f/1 lens

Figure 1. ME300BFM

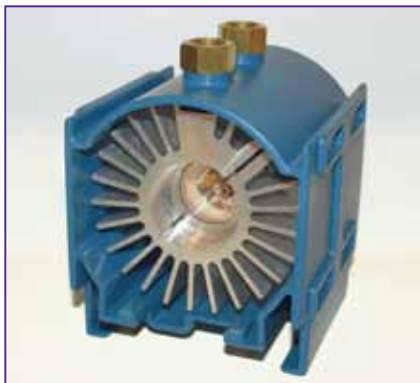


Figure 2. ME300C-10FML

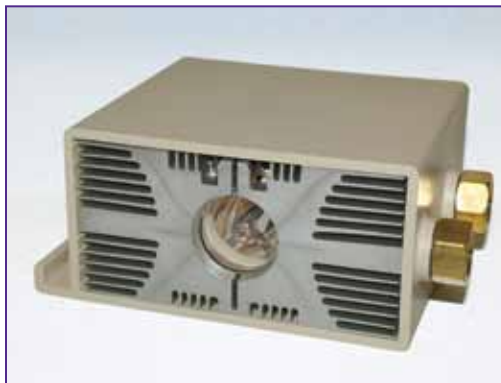


Figure 3. ME400BFMS

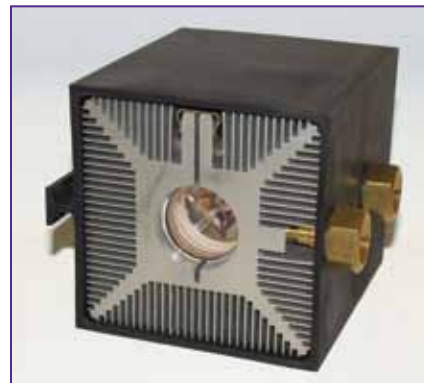


Figure 4. Nominal Lifetime Curves

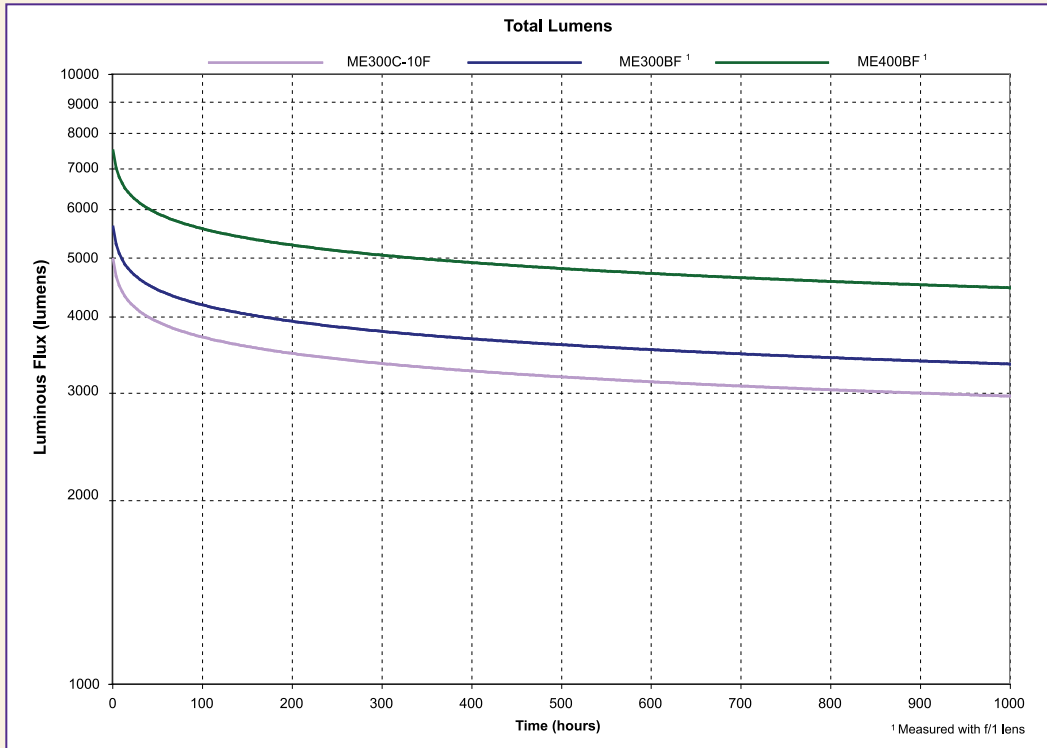
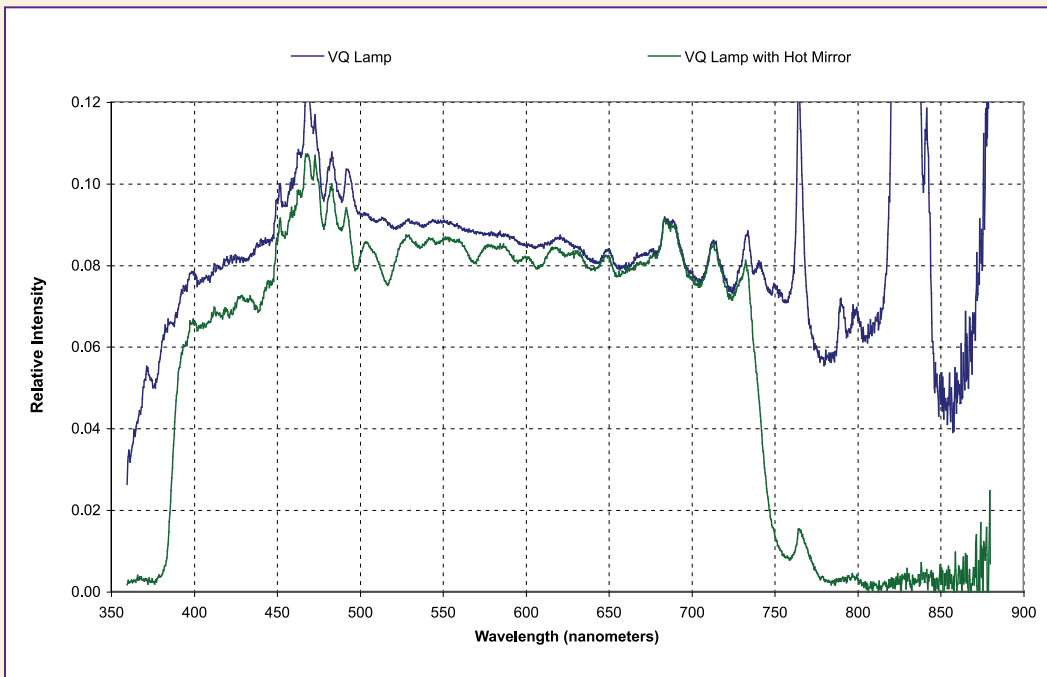


Figure 5. Nominal Spectral Output



# Cermax VQ Xenon Elliptical and Parabolic Lamps

Figure 6. ME300C-10FM: Radial Elliptical Lamp Module Configuration

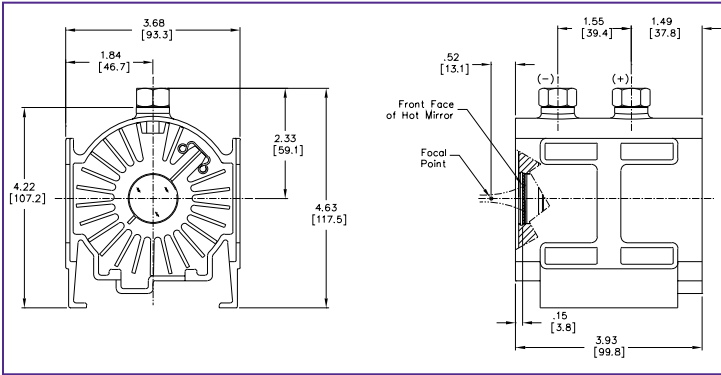


Figure 7. ME300C-10FML: Low Profile Elliptical Lamp Module Configuration

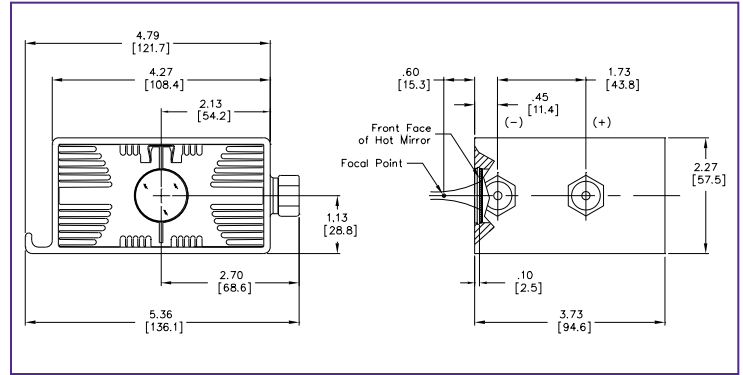


Figure 8. ME300BFM: Radial Parabolic Lamp Module Configuration

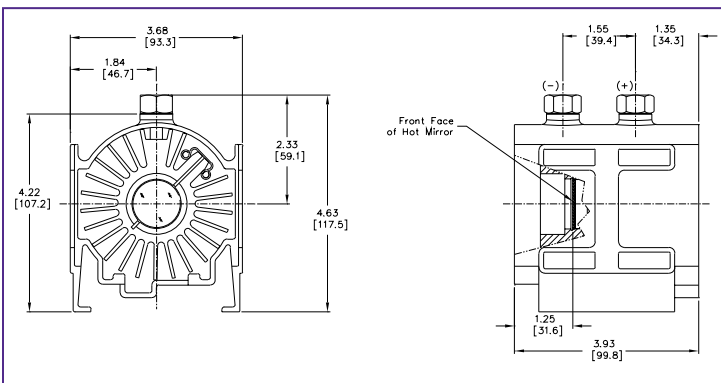


Figure 9. ME300BFML: Low Profile Parabolic Lamp Module Configuration

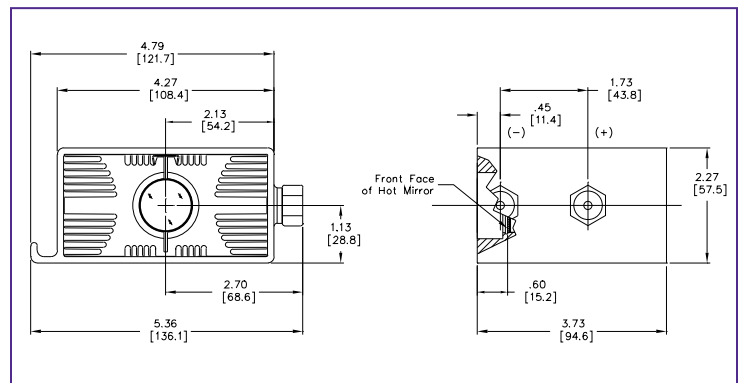


Figure 10. ME400BFMS: Square Parabolic Lamp Module Configuration

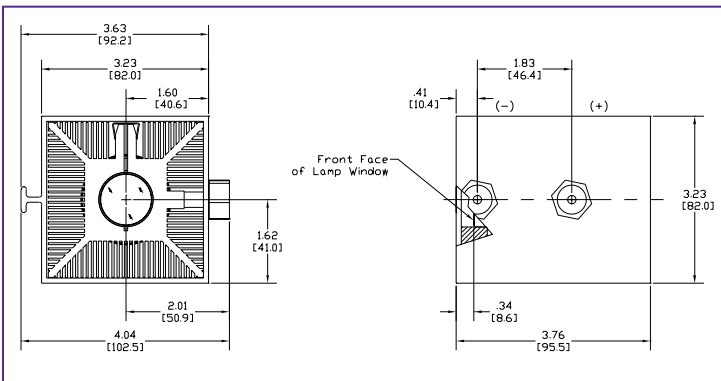
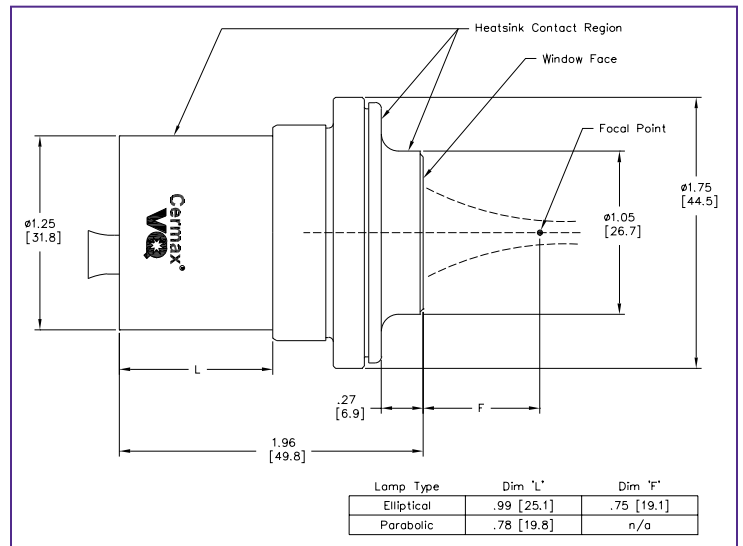


Figure 11. Lamp Dimensions



Notes: Dimensions in brackets are in millimeters.

Above modules ship with hot mirrors in place.  
Additional versions without hot mirrors are also available.

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