

**Canon**

# SUPER E20



**A Higher Standard in Studio Lenses  
That Will Not Compromise Your Budget**



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E20x8B IE 8-160mm 1:1.5



Canon proudly announces the latest addition to our line of economical yet high quality studio lenses, "SUPER E20". The "SUPER E20", also known as the E20X8BIE, incorporates many of the same features and functions as the J20 Super, the standard of the broadcast industry with more than 2000 units sold worldwide.

Those features include our exclusive "IF" Internal Focus System and the optional "CROSSOVER" System for seamless 4X3 and 16X9 production on switchable cameras.

When used in conjunction with portable cameras, the "SUPER E20" features a unique Built In Supporter for the lens and camera combination.

## HIGH MTF PERFORMANCE

The height of the 16:9 format is 20% shorter than that of the current 4:3 format, thus the scanning lines are 20% greater. As a result, higher resolution is required for the 16:9 format. In order to achieve this, the "SUPER E20" Provides minimum aberrations by the employment of 3 group IF (Internal Focusing), Hi-UD glasses (High Index Ultra Low Dispersion glass) and Canon's unique fluorite. The "SUPER E20" succeeds in having higher MTF performance, correspondent to 6MHz, that is necessary for the 16:9 format.

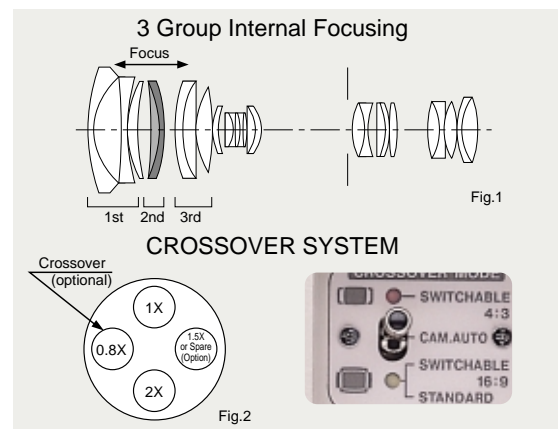
## 3 Group Internal Focusing

In Canon's unique IF system, the front section is divided into three groups-concave, convex convex-and the middle lens moves for focusing. (Fig.1) By employing the 3 group IF system, the lens can achieve minimized variation

of aberrations while focusing, minimized distortion and a high optical performance even though SUPER E20 has a wide angle that starts from 8mm.

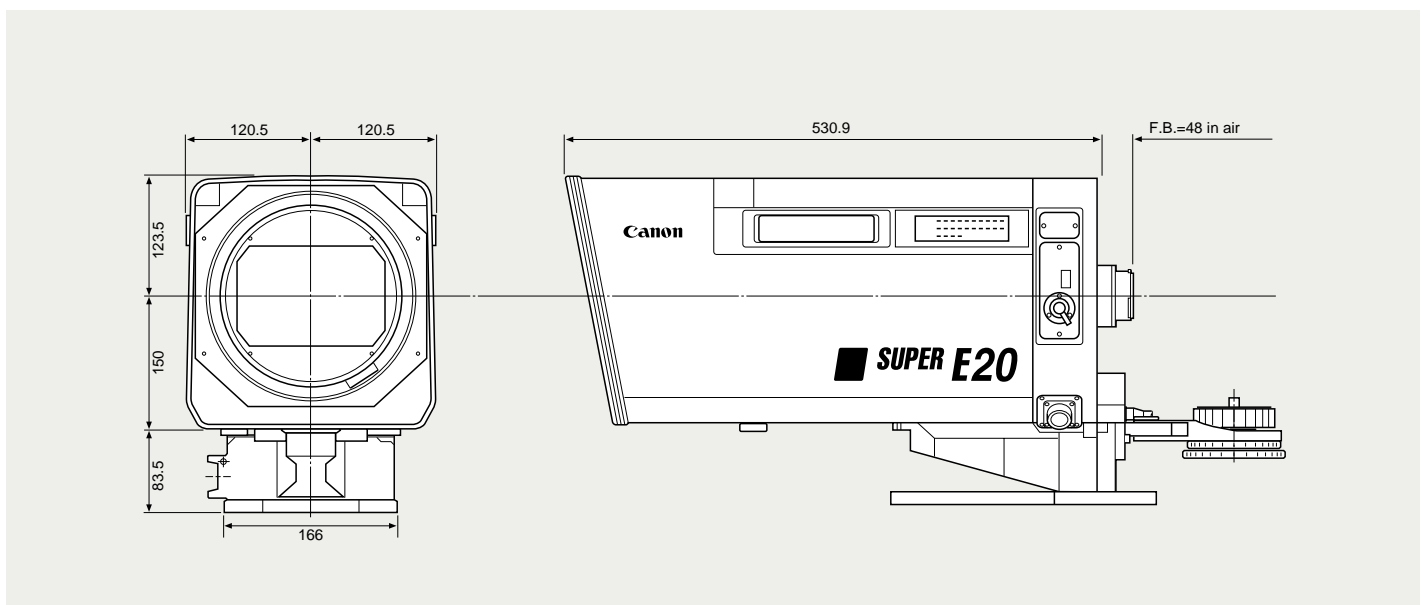
## CANON "CROSSOVER" SYSTEM

All the Super series of lenses, including the new SUPER E20 are now optionally available with "CROSSOVER" compatibility for most 16:9/4:3. The 4 position extender turret incorporates a 0.8x "CROSSOVER" unit in addition to the normal extenders i.e. 1.0x, 1.5x, or 2.0x (Fig.2). When the camera switches to the 4:3 mode, the extender turret rotates to the 0.8x position. The 0.8x "CROSSOVER" unit reduces the diameter of the image from 11mm to 9mm thus shortening the focal length to produce an identical picture angle of view. In essence, the 0.8x "CROSSOVER" unit acts as a 1.0x extender for the switched 4:3 aspect ratio. (Fig.3)



| 16:9 (dia 11mm) |              |        | 4:3 (dia 9mm) |              |        |
|-----------------|--------------|--------|---------------|--------------|--------|
| Extender        | Focal Length | F stop | Extender      | Focal Length | F stop |
| 0.8X            |              |        | 1.0X          | 6.6-132mm    | 1.5    |
| 1.0X            | 8-160mm      | 1.5    | 1.2X          | 8-160mm      | 1.5    |
| 2.0X            | 16-320mm     | 3.0    | 2.4X          | 16-320mm     | 3.0    |

Fig.3







## INTERNAL FOCUSING SYSTEM

(Advanced 3 group IF system)

- Realization of wide-angle with reduced distortion.
- Minimized variation of chromatic aberration while focusing.
- Higher MTF in R,G,B channels at M.O.D.
- Anti-Dust, Anti-Fog, thanks to a perfectly airtight Internal Focusing System.

## WIDE ANGLE OF 8mm WITH REDUCED DISTORTION

## HIGHER AND FLATTER MTF

- Computer aided design to improve the current 5MHz contrast to 6MHz.

## COUNTERMEASURES AGAINST "GHOSTING" AND "FLARES"

- New coatings and anti-reflection paint achieve the elimination of "ghosting" and "flares".



## 4-POSITION TURRET

(built in extender, pattern projector, master lens, crossover unit).

- Micro Computer Controlled Turret.
- \*Built in Effect Filter available as option e.g Cross, Sunny, etc.

## VERSATILE ZOOM/FOCUS CONTROLLERS

(See figure on the next page)

- New ergonomic design.
- Countermeasures against dust, rain, and radio interference.

## SERVO SYSTEM MATCHING ROBOTIC REQUIREMENTS

- High resolution zoom and focus servo-12 bit repeatability.

## 10 BIT IRIS COMPATIBILITY

- High resolution iris control.

## WIDE DYNAMIC RANGE OF ZOOM AND FOCUS SERVO SPEED

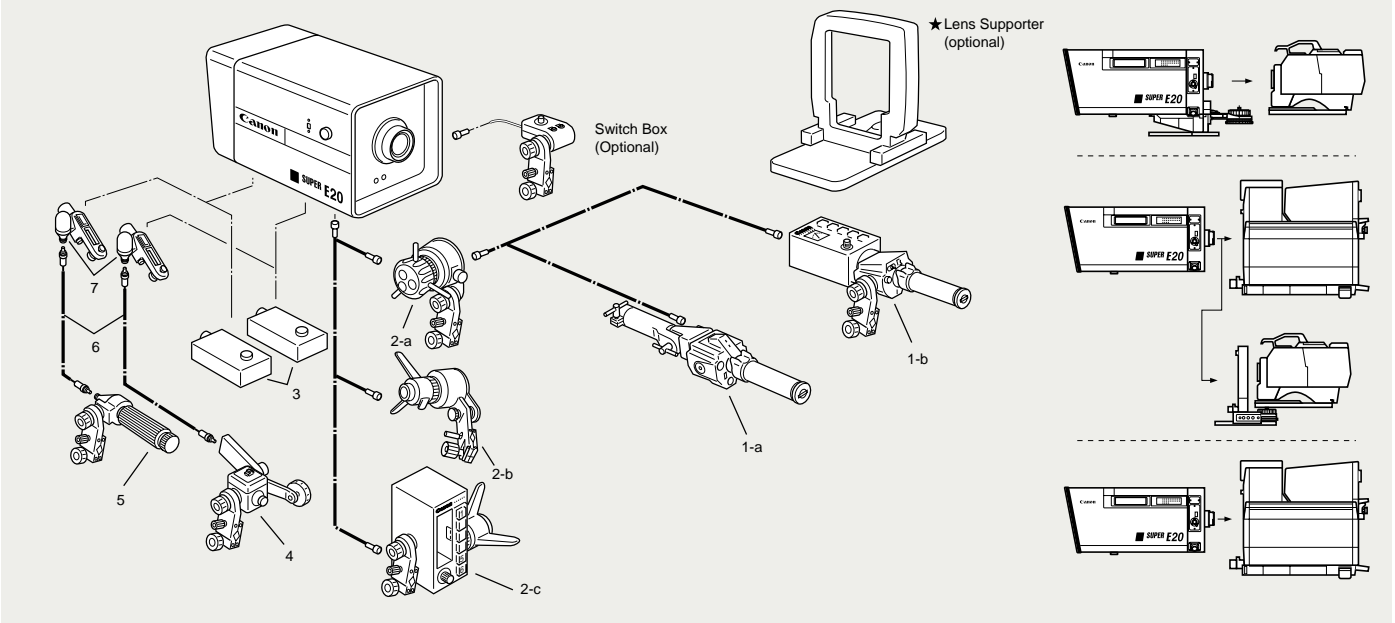
- From ultra slow to high speed. Max. speed:Zoom 0.6 sec, Focus 0.8 sec.

## COUNTERMEASURES AGAINST RADIO FREQUENCY NOISE (INTERFERENCE)

|                                  | NORMAL 4 : 3   |   | 16 : 9                                   |   | SWITCHABLE 4 : 3 (with crossover unit)     |  |   |
|----------------------------------|--|---|--|---|--|--|---|
|                                  | 1.0×   | 2.0×                                      | 1.0×                                     | 2.0×                                      | 1.0×                                       | 1.2×                                     | 2.4×                                      |
| Built-in Extender                | 1.0×   | 2.0×                                      | 1.0×                                     | 2.0×                                      | 1.0×                                       | 1.2×                                     | 2.4×                                      |
| Zoom Ratio                       | 20×  |   |  |   |  |  |   |
| Range of Focal Length            | 8~160mm  | 16~320mm                                  | 8~160mm                                  | 16~320mm                                  | 6.6~132mm                                  | 8~160mm                                  | 16~320mm                                  |
| Maximum Relative Aperture        | 1:1.5 at 8~118mm<br>1:1.9 at 160mm                   | 1:3.0 at 16~236mm<br>1:3.8 at 320mm       | 1:1.5 at 8~118mm<br>1:1.9 at 160mm       | 1:3.0 at 16~236mm<br>1:3.8 at 320mm       | 1:1.5 at 6.6~120mm<br>1:1.55 at 132mm      | 1:1.5 at 8~118mm<br>1:1.9 at 160mm       | 1:3.0 at 16~236mm<br>1:3.8 at 320mm       |
| Angular Field of View            | 57.6°×44.8°at 8mm<br>3.15°×2.36°at 160mm             | 30.8°×23.3°at 16mm<br>1.58°×1.18°at 320mm | 61.9°×37.3°at 8mm<br>3.44°×1.93°at 160mm | 33.4°×19.2°at 16mm<br>1.72°×0.97°at 320mm | 57.2°×44.5°at 6.6mm<br>3.12°×2.34°at 132mm | 48.5°×37.3°at 8mm<br>2.58°×1.93°at 160mm | 25.4°×19.2°at 16mm<br>1.29°×0.97°at 320mm |
| Minimum Object Distance (M.O.D.) | 0.6m from front lens vertex (with macro M.O.D.:0.2m) |   |  |   |  |  |   |
| Object Dimensions at M.O.D.      | 86.0×64.5cm at 8mm<br>4.3×3.2cm at 160mm             | 43.0×32.3cm at 16mm<br>2.2×1.6cm at 320mm | 93.8×52.8cm at 8mm<br>4.7×2.6cm at 160mm | 46.9×26.4cm at 16mm<br>2.3×1.3cm at 320mm | 85.3×64.0cm at 6.6mm<br>4.3×3.2cm at 132mm | 70.4×52.8cm at 8mm<br>3.5×2.6cm at 160mm | 35.2×26.4cm at 16mm<br>1.8×1.3cm at 320mm |
| Size                             | 241(W)×273.5(H)×530.9(L)mm                           |   |  |   |  |  |   |
| Weight (Approx.)                 | 16kg(35lbs)  |   |  |   |  |  |   |
| Built-in Pattern Projector       | Optionally available                                 |   |  |   |  |  |   |

Note ; SUPER E20 for 1/2 inch cameras is also available.  
For details , please contact your local Canon office.

# LENS SYSTEM



| NO. | DESCRIPTION                     | CODE     | NO. | DESCRIPTION                       | CODE     |
|-----|---------------------------------|----------|-----|-----------------------------------|----------|
| 1-a | Zoom Demand ZDJ-A01             | BG2-5122 | 3   | Servo Module SMJ-N02              | BG2-5205 |
| 1-b | Zoom Demand W/Shot Box ZPJ-A01  | BG2-5529 | 4   | Flexible Zoom Controller FZP-T61  | BG2-1558 |
| 2-a | Focus Demand FDJ-I01            | BG2-5001 | 5   | Flexible Focus Controller FFP-T61 | BG2-1557 |
| 2-b | Focus Demand FDJ-H01            | BG2-5003 | 6   | Flexible Cable 30"                |          |
| 2-c | Focus Demand W/Shot Box FPJ-K02 | BG2-5506 | 7   | Flexible Module FMJ-452           | BG2-5305 |

| APPLICATION | OPERATION            |                      | COMPOSITION |         |
|-------------|----------------------|----------------------|-------------|---------|
|             | ZOOM                 | FOCUS                | ZOOM        | FOCUS   |
| Manual      | Flexible Cable Drive | Flexible Cable Drive | 4, 6, 7     | 5, 6, 7 |
| Semi-Servo  | Servo                | Flexible Cable Drive | 1, 3        | 5, 6, 7 |
| Full-Servo  | Servo                | Servo                | 1, 3        | 2, 3    |

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