

PRASAR BHARTI  
BROADCASTING CORPORATION OF INDIA  
DIRECTORATE GENERAL: DOORDARSHAN

**Specifications for Energy Efficient Fluorescent Lights for TV Studio**

Specifications No.: SD 18/2010

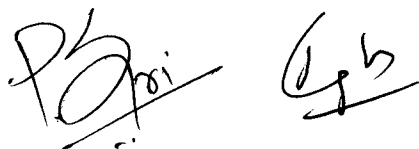
Dated: 25.06.2010

**1. SCOPE:**

The specifications lay down the required performance characteristics of mains operated Energy Efficient Light fittings with RGB sustained fluorescent tubes or their equivalent for basic TV lighting applications for small to large TV studios, News sets, virtual studios, Interviews etc. in Doordarshan network.

**2. GENERAL FEATURES:**

- (a) **The offered equipment should be from a reputed manufacturer and the quoted model should be field proven and in use by leading broadcasters. The bidder should essentially submit the list of the broadcasters to whom the quoted model has been supplied. The tenders without the proper user list shall liable to be rejected out rightly.**
- (b) The offered product should meet the professional standards that are normally followed in TV Production Studios.
- (c) Adequate ventilation should be provided with proper care taken for avoiding light spill into adjacent areas.
- (d) The light source should be highly energy efficient and should use high performance lamps of reputed brand with near constant spectrum over the maximum dimming range to give unchanged color temperature.
- (e) They are to be cool light with very little radiant heat in the light beam.
- (f) SRGB lamps of 3200°K color temperature should be offered with continuous spectrum over the dimming range to avoid color mismatch.
- (g) The luminaries should use high frequency excitation ballast of 55 KHz or more to obtain highly efficient and flicker free light output essential for TV production. The power factor of the ballast should be equal to or more than 0.95 (cos  $\phi$ ).



- (h) The light should have even spectral response. However, lights with a spiky spectral energy distribution should have the major spikes coinciding with the colour camera analysis characteristics. RGB spikes in the visible spectrum are also acceptable.
- (i) It should be possible to do panning and tilting operation with ease, with help of poles used in the TV Studio.
- (j) The spread of light from the source should be controllable for different angles of throw with the help of Barn doors or adjustable honeycomb. Facility to insert filter frames and scrims should be available.
- (k) The fitting should be supplied with a minimum of three meters of 3-core power supply cable of suitable capacity.
- (l) It should be possible to vary the beam angle up to 60 degree at flood with even distribution of light.
- (m) Easy internal access for lamp and ballast replacement and maintenance should be there.
- (n) Each fixture should incorporate an in-built electronic linear dimmer control for dimming the intensity from 100% to 20% or even less. The colour temperature of the lamp should remain constant even during dimming operation. **The dimming control should be manual on light fittings as well as through DMX512 controller.**
- (o) Firm should also offer DMX 512 controller unit to control 24 or more lights.
- (p) **The luminaries offered should comply with the industry standard electrical and electro magnetic interference specifications. There should be minimum emissions of RF or infrared to avoid any interference to microphones, earphones, floor manager's infrared intercom system and other wireless equipment being used within the studio or on the locations. The firm must enclose the certificate or necessary documentation to this effect.**
- (q) **As the luminaries are to be used in coverage's of important events involving VVIPs/VIPs where safety is the prime concern, the luminaries offered should comply with safety standards. Necessary certificate as applies to OEM for the quoted model of the product, from their National certification body should be enclosed. The firm should ensure that the certificate should clearly refer to IEC/UL safety standard clauses pertaining to the luminaries for stage light, TV and film studio (outdoor and indoor).**
- (r) The bidder should ensure the completeness of the offered system.
- (s) The bill of material is given in **Appendix-I.**
- (t) The equipment are being procured for various Doordarshan centres as per **Appendix-II.**

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### **3. TECHNICAL SPECIFICATIONS:**

1. **Power Supply** : Single Phase 230±5% V AC, 50 Hz
2. **Colour Temperature** : 3200°K  
All the lights quoted should be of the same colour temperature. It should match with halogen lamp colour temperature.
3. **Colour Rendering Index** : 90 or better
4. **Life of the bulb** : Better than 10000 Hrs.
5. **Dimming** : (a) In-built full dimming capabilities for dimming the intensity from 100% to 20% or even less, in each light fitting.  
(b) External full dimming through DMX512 protocol controller.
6. **Lamps** : Should be fitted with appropriate nos. of Fluorescent lamps, so as to provide desired light intensity to give the required wattage for 230±5% V AC, 50 Hz
7. **Ballast** : Electronic Ballast from reputed brands with excitation frequency of 55 KHz or more and power factor 0.95 or better.
8. **Power Cable** : Minimum 3 meter of 3-core cable of suitable capacity.
9. **Reflecting mirror** : Optical reflector should be fitted with appropriate no. of

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matching mirror flaps and reflecting corners (removable).

10. **Housing/ Finishing** : Aluminium extrusion and epoxy coated aluminium alloy sheets or textured powder coating. It should be rugged and robust. It should be coated with heat resistant paint preferably black in colour.
11. **Shape** : Rectangular/square
12. **Yoke/ accessories** : Yoke should be pole operated. Spigot should be of approx. 28mm type along with C-clamp to hang the luminaries should also be provided. It should be counter balanced.
13. **Lamp holder** : Made of white high strength thermoplastic for push wire connection.

#### **4. LIGHT FITTINGS REQUIRED:**

Following two types of light fitting alongwith their lamps are to be quoted separately.

##### **1. 300 WATT FLUORESCENT FIXTURES:**

- Total wattage : About 300 watt with inbuilt dimmer
- Light output : 8,500 lumens or more
- Light throw : better than 2125 Lux at 2 Mt.
- Beam angle : 60 deg.
- Barn doors : 4-leaf barn door
- Colour temp : 3200° K

##### **2. 200 WATT FLUORESCENT FIXTURES:**

- Total wattage : About 200 watt with inbuilt dimmer

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Light output : 5,500 lumens or more  
 Light throw : 1125 Lux. At 2 Mts. or more  
 Beam angle : 60 deg.  
 Barn doors : 4-leaf barn door  
 Colour temp : 3200° K

**5. COMPLIANCE:**

- (a) Any substandard equipment included in the offer may cause the rejection of complete offer with the sole responsibility of the bidder.
- (b) The bidder should provide the offered un-priced bill of material in electronic form also in addition to the hard copy for ease of technical evaluation.
- (c) **A point-by-point compliance statement from the principal manufacturer in respect of all the points laid down in these specifications is to be enclosed along with the offer in the format given below. Mere signature on the copy of the specifications shall not be accepted as a compliance statement.**

**The figures so mentioned should be supported by record of these in the technical literature enclosed with the tender and reference to the page number of enclosed literature for all features and technical specifications should be mentioned in the relevant column. Offers without the compliance statement or with incomplete compliance statement will liable to be rejected with the sole responsibility of the bidder. Any deviation from the specification detailed in the compliance statement is to be highlighted separately.**

Sr. No of DD specs.	DD specs.	Compliance (Yes/No)	Performance Fig. of equipment Offered.	Reference to the Page Number of enclosed literature	Deviations, in case of non-compliance	Optional items if any reqd. to make the sys. Compliant to DD specs.	Features in the Product which exceeds DD specs.

**6. ACCESSORIES:**

All the essential accessories like power cables, honey comb, barn door etc. required to complete the system should be offered by the bidder and the bidder should certify the completeness of the system. All the optional items should be quoted separately. The bidder must provide enough details about such optional items to decide its utility.

**7. DOCUMENTATION:**

One set of printed technical and operation & maintenance manuals for all the equipments are to be provided on non-returnable basis along with the tender to facilitate the technical evaluation, otherwise the tender is liable to be ignored. The successful bidder will have to supply one set of printed operation, service and maintenance manuals with respect to each equipment.

**8. GUARANTEE:**

- (a) The system should be guaranteed for two years of trouble free operation from the date of supply. In case of any equipment failure including software and hardware within this period, the same shall be rectified or replaced free of cost to Doordarshan.
- (b) The guarantee should cover all hardware, software and modules of the complete system.

**9. DEMONSTRATION:**

If necessary, the bidder may be asked for demonstration of the offered system as part of the technical evaluation. In such case the bidder will have to make suitable arrangement for the demonstration of the offered system at Doordarshan Bhawan, New Delhi, on notice of 7 days. Accordingly the bidder should be in readiness for demonstration on a notice of 7 days.

**10. INSPECTION:**

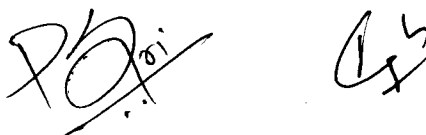
The equipment shall be subjected to inspection by Doordarshan officials at New Delhi.

**11. ENCLOSURES:**

The bidder must necessarily submit the following enclosures along with the technical bid:

- (a) Compliance statement with respect to all the points of the specifications duly signed by the OEM.

The reference to the page number of enclosed literature for all features and technical specifications should be essentially mentioned in the relevant column of the compliance statement.



- (b) Technical manuals/Detailed technical literature/catalogues for all the offered products for substantiating the model no. and technical specification.
- (c) **Model specific broadcast user list of the offered product.**
- (d) Any other document mentioned elsewhere in the tender document.

**The tender is liable to be rejected in the absence of the above enclosures with the sole responsibility of the bidder.**

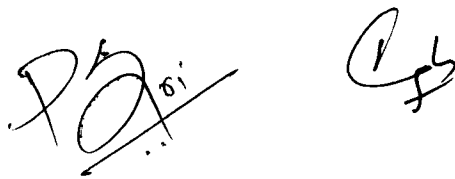
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**Total No. of Sets required: 31 Sets  
Bill of Material per Set**

<b>Sl. No.</b>	<b>Details of Item</b>	<b>Quantity per set</b>
1.	200 Watt Compact Light fitting with lamps (With Horizontal Yoke)	5 Nos.
2.	4 Leaf Barn door (suitable for 200 Watt Compact Light fitting)	5 Nos.
3.	Gel/ filter frame (suitable for 200 Watt Compact Light fitting)	5 Nos.
4.	Heavy duty C Clamps with safety chain	5 Nos.
5.	Honey comb / Egg crate Grid (suitable for 200 Watt Compact Light fitting)	5 Nos.
6.	300 Watt Compact Light fitting with lamps (With Horizontal Yoke)	5 Nos.
7.	4 Leaf Barn door (suitable for 300 Watt Compact Light fitting)	5 Nos.
8.	Gel/ filter frame (suitable for 300 Watt Compact Light fitting)	5 Nos.
9.	Heavy duty C Clamps with safety chain	5 Nos.
10.	Honey comb / Egg crate Grid (suitable for 300 Watt Compact Light fitting)	5 Nos.
11.	24 channel DMX512 linear Dimmer control unit with accessories	1 Set
12.	Operation manual/User Guide/ Technical Manual/ Installation Manual etc.	1 Lot
13.	Service & Maintenance Manuals	1 Lot



**EQUIPMENT ARE BEING PROCURED FOR THE FOLLOWING  
DOORDARSHAN CENTRES**

<b>Sl. No.</b>	<b>Zone</b>	<b>Location of Doordarshan Centre</b>	<b>Qty.</b>
1.	<b>North Zone (NZ)</b>	Jammu	1 set
2.		Chandigarh	1 set
3.		Bareilly	1 set
4.		Shimla	1 set
5.		Allahabad	1 set
6.		Mau	1 set
7.	<b>East Zone (EZ)</b>	Daltonganj	1 set
8.		Mujjafarpur	1 set
9.		Ranchi	1 set
10.		PPC Guwahati	1 set
11.		Siliguri	1 set
12.		shillong	1 set
13.		Tura	1 set
14.		Kohima	1 set
15.		Itanagar	1 set
16.		Imphal	1 set
17.		Silchar	1 set
18.		Dibrugarh	1 set
19.		Aizwal	1 set
20.		Agartala	1 set
21.		Sambalpur	1 set
22.	Gangtok	1 set	
23.	<b>South Zone (SZ)</b>	Gulbarga	1 set
24.		Pondicherry	1 set
25.		Vijayavada	1 set
26.	Portblair	1 set	
27.	<b>West Zone (WZ)</b>	Panaji	1 set
28.		Raipur	1 set
29.		Rajkot	1 set
30.		Pune	1 set
31.		Indore	1 set
<b>TOTAL</b>			<b>31 sets</b>

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