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# SPECIFICATION SHEET

Product: 11405222

Model: 2.4 x 454 | 0.2635/0.268

# Specifications

1. Available Range. The specifications available to CCFL unit listed on page 1.
2. Product Construction.

| Item No. | Name               | Requirements                              | Remark      |
|----------|--------------------|---|-------------|
| 1        | Dimension          | Lamp Shape: Straight                      | Naked lamp  |
|          |                    | Dia: $\Phi 2.4 \pm 0.1\text{mm}$          |             |
|          |                    | Glass tube length: $454 \pm 1.0\text{mm}$ |             |
| 2        | Glass tube         | Hard material glass tube                  |             |
| 3        | Fluorescent powder | Three primary colors phosphor             |             |
| 4        | Electrode          | Kovar                                     |             |
| 5        | Gas                | 55 Torr                                   | Ne+Ar(95:5) |

3. Primary Characteristics.
  - 3.1. Requests of Specifications

| Item No. | Name                         | Code | Unit              | Specification          | Remark               |
|----------|------------------------------|------|-------------------|------------------------|----------------------|
| 1        | Lamp Voltage (Reference)     | VL   | Vrms              | $790 \pm 10\%$         | KD12300 inverter 12V |
| 2        | Lamp Current                 | IL   | MArms             | $6.0 \pm 0.5\text{mA}$ |                      |
| 3        | Starting Voltage (Reference) | Vs   | Vrms              | $1380 \pm 10\%$        | KD12300 6mA 25°C     |
| 4        | Surface Brightness           | B    | Cd/m <sup>2</sup> | $32000 \pm 10\%$       | KD12300 6mA 25°C     |
| 5        | Color Coordinates            | x    |                   | $0.2635 \pm 0.010$     | CIE 1931             |
|          |                              | y    |                   | $0.268 \pm 0.010$      |                      |
| 6        | Peak Spectrum (Reference)    |      | Nm                | Red                    | 611                  |
|          |                              |      |                   | Green                  | 544                  |
|          |                              |      |                   | Blue                   | 435                  |
| 7        | Stable Time of Illumination  | Ts   | min               | 3min                   |                      |

### 3.2. Test Conditions

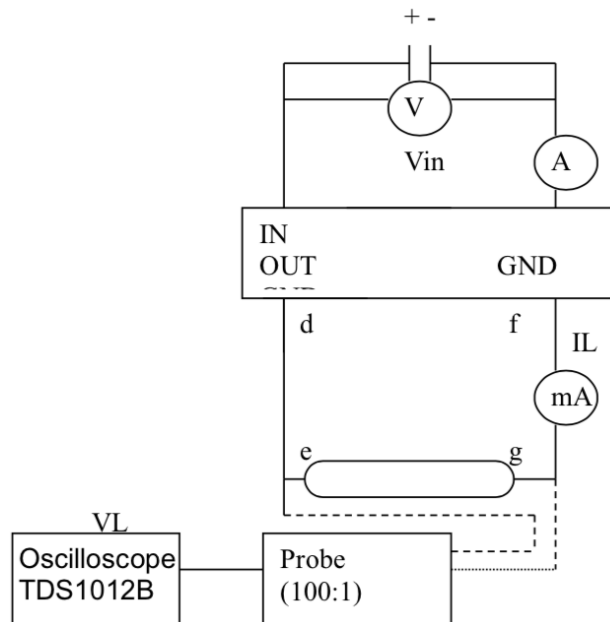
- 3.2.1. Lamp should be placed in horizontal position, under required testing current, and undergo normal lighting for more than 3 minutes, then conduct the electrical and optical properties tests
- 3.2.2. Temperature of Test Environment =  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$
- 3.2.3. Relative Humidity of Test Environment =  $65\% \pm 20\%$ , under no wind state.

### 3.3. Test Apparatus

| Test Items                       | Test Apparatus                          |
|----------------------------------|---|
| Lamp Voltage                     | Oscilloscope (Tektronix TDS1012B 100:1) |
| Lamp Current                     | Multimeter (Fluke 8086 A)               |
| Surface Brightness               | Colorimeter (Topcon BM-7)               |
| Color and Color Temp Coordinates | Colorimeter (Topcon BM-7)               |

### 3.4. Test Methods

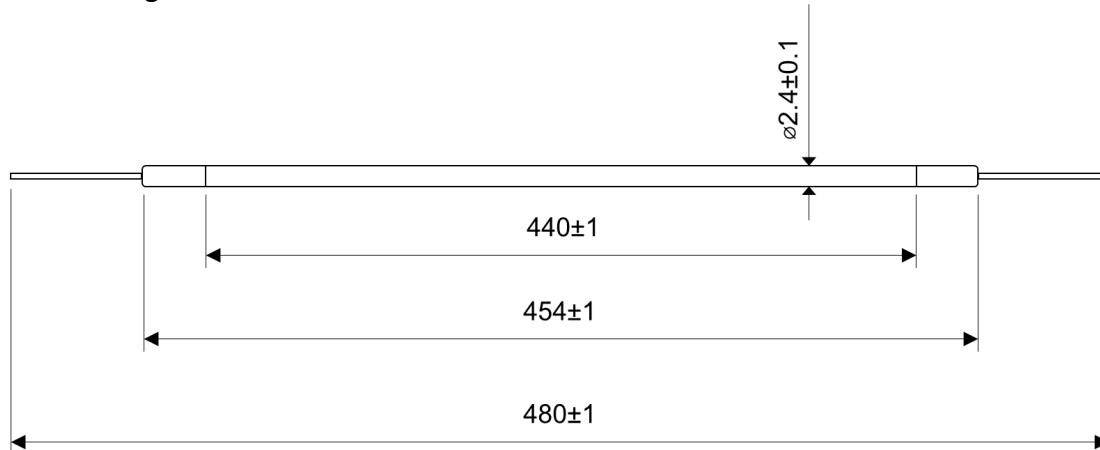
- 3.4.1. CCFL unit under complete voltage control; the test circuit as shown in the Diagram below.
  - 3.4.1.1. LV output end connected to negative of 0V ~ 12V input
  - 3.4.1.2. The connection wire length is 100~300mm
  - 3.4.1.3. Test circuit wires parallel distance should be longer than 100mm in order to avoid possible interference which could affect measurement accuracy
  - 3.4.1.4. When testing current disconnect VL test equipment
  - 3.4.1.5. When testing voltage disconnect IL test equipment
  - 3.4.1.6. During testing, place CCFL unit on shelf with black background in a non-reflective environment



3.4.2. Brightness Measurement (naked lamp only), the Colorimeter should be kept a distance of 500 +/- 10mm from the lamp vertical axis and test black perspective at 0.1 degrees.

3.4.3. NOTE: testing done with different test equipment and under different test conditions may result in measurement differences.

#### 4. Drawing



*Not to scale, for illustration purposes only*

#### 5. Notes

5.1 These specifications have been tested and approved by Plazmo Industries. Plazmo reserves the right to revise and improve specifications without notice when necessary.

5.2 Using an inverter that produced different voltage and current will cause Cold cathode fluorescent lamps (CCFLs) to perform outside of the normal specification. When installing lamps, please pay attention and choose a suitable lamp working current or appropriate input DC voltage, in order to achieve the optimal lighting performance and prevent unnecessary damage.

5.3 This CCFL lamp should be driven by power with high frequency and voltage. To avoid poor performance or damage, do not use lamps under listed frequency and voltage.

5.4 When the high voltage wire is long, please pay attention that high and low voltage cables do not become intertwined. Keep high voltage and low voltage wires a minimum of 20mm apart whenever possible during testing. Failure to do so may cause interference of recorded values.

5.5 Note the lamp current requirements listed in 3.1. Matching this value is critical to ensure proper performance of this CCFL. If the values are not matched by end user's inverter, lamp performance may exhibit low brightness, early failure, and/or other problems.