

# **ΟΡΟΙ ΔΙΑΓΩΝΙΣΜΟΥ**

**ΓΙΑ ΤΗΝ ΕΠΙΛΟΓΗ ΑΝΑΔΟΧΟΥ ΜΕ ΑΝΟΙΚΤΟ ΔΙΑΓΩΝΙΣΜΟ  
ΚΑΙ ΚΡΙΤΗΡΙΟ ΕΠΙΛΟΓΗΣ ΤΗ ΧΑΜΗΛΟΤΕΡΗ ΤΙΜΗ**

**ΔΙΑΓΩΝΙΣΜΟ ΓΙΑ ΤΗΝ ΠΡΟΜΗΘΕΙΑ ΦΩΤΙΣΤΙΚΩΝ  
ΓΙΑ ΤΗΝ ΕΚΤΕΛΕΣΗ ΤΟΥ ΕΡΓΟΥ  
ΠΟΛΥΛΕΙΤΟΥΡΓΙΚΟ ΠΑΡΑΘΑΛΑΣΣΙΟ ΠΑΡΚΟ**

## ΟΔΗΓΙΕΣ ΠΡΟΣ ΤΟΥΣ ΟΙΚΟΝΟΜΙΚΟΥΣ ΦΟΡΕΙΣ

### 1. ΔΙΚΑΙΩΜΑ ΚΑΙ ΠΡΟΫΠΟΘΕΣΕΙΣ ΣΥΜΜΕΤΟΧΗΣ

#### 1.1.1 Τεχνικές και επαγγελματικές ικανότητες

Για τη συμμετοχή τους στο διαγωνισμό, οι Ενδιαφερόμενοι Οικονομικοί Φορείς πρέπει να πληρούν υποχρεωτικά τις παρακάτω προϋποθέσεις που αφορούν τις τεχνικές και επαγγελματικές τους ικανότητες:

1. ο αριθμός των μόνιμων εργοδοτούμενων από τον Ενδιαφερόμενο Οικονομικό Φορέα φυσικών προσώπων, κατά μέσο όρο την τελευταία τριετία, δεν πρέπει να είναι μικρότερος από έξι (6).
2. να έχει ολοκληρώσει επιτυχώς κατά τα τελευταία τρία (3) έτη, συμβάσεις συνολικής αξίας € 300.000,00 με αντικείμενο την προμήθεια φωτιστικών για την εκτέλεση παρόμοιων έργων και με ποσοστό συμμετοχής τουλάχιστον **90%**, και εκ των οποίων τουλάχιστον **μία** σύμβαση να είναι δαπάνης €100.000,00. Η έννοια του όρου «ολοκληρώσει» σημαίνει κατά ποσοστό υλοποίησης της σύμβασης τουλάχιστον 80%.
3. να έχει συμπεριλάβει στην προτεινόμενη Ομάδα Έργου, στελέχη των οποίων τα προσόντα θα καλύπτουν τα ελάχιστα απαιτούμενα για το προσωπικό του Αναδόχου όπως αυτά περιγράφονται στην Ενότητα 4 του Παραρτήματος II ΟΡΟΙ ΕΝΤΟΛΗΣ – ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ των Εγγράφων Διαγωνισμού
4. Νοείται ότι σε περίπτωση που ο Ενδιαφερόμενος Οικονομικός Φορέας είναι κοινοπραξία προσώπων, οι ανωτέρω προϋποθέσεις αρκεί να πληρούνται αθροιστικά από τα μέλη της κοινοπραξίας.
5. Ο Ενδιαφερόμενος Οικονομικός Φορέας, σύμφωνα με τις πρόνοιες του άρθρου 54(3) του Ν.12(Ι)/2006, δύναται να στηρίζεται στις δυνατότητες άλλου/ων φορέα/ων ασχέτως της νομικής φύσης των δεσμών με αυτόν/ους. Στην περίπτωση αυτή πρέπει να είναι σε θέση να αποδείξει στην Αναθέτουσα Αρχή ότι θα έχει στη διάθεσή του τους αναγκαίους πόρους.

# **ΠΑΡΑΡΤΗΜΑ ΙΙ: ΟΡΟΙ ΕΝΤΟΛΗΣ – ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ**

## **ΟΡΟΙ ΕΝΤΟΛΗΣ – ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ**

### **ΠΙΝΑΚΑΣ ΠΕΡΙΕΧΟΜΕΝΩΝ**

- 1. ΑΝΤΙΚΕΙΜΕΝΟ ΤΗΣ ΣΥΜΒΑΣΗΣ**
  - 1.1 Γενικά
  - 1.2 Ανάλυση απαιτήσεων – Προδιαγραφές
  - 1.3 Απαιτήσεις Εκθέσεων
- 2. ΥΠΟΣΤΗΡΙΚΤΙΚΑ ΜΕΣΑ ΠΟΥ ΠΑΡΕΧΟΝΤΑΙ ΑΠΟ ΤΗΝ ΑΝΑΘΕΤΟΥΣΑ ΑΡΧΗ**
- 3. ΠΑΡΑΔΟΣΗ – ΠΑΡΑΛΑΒΗ ΤΟΥ ΑΝΤΙΚΕΙΜΕΝΟΥ ΤΗΣ ΣΥΜΒΑΣΗΣ**
  - 3.1 Τόπος παράδοσης
  - 3.2 Χρονοδιάγραμμα παράδοσης
  - 3.3 Έλεγχος και παραλαβή παραδοτέων
- 4. ΑΠΑΙΤΗΣΕΙΣ ΣΕ ΠΡΟΣΩΠΙΚΟ**
  - 4.1 Υπεύθυνος Αναδόχου
  - 4.2 Λοιπά στελέχη της Ομάδας Έργου

## ΑΝΤΙΚΕΙΜΕΝΟ ΤΗΣ ΣΥΜΒΑΣΗΣ

### 1.1 Γενικά

Το αντικείμενο αυτής της Σύμβασης περιλαμβάνει την **προμήθεια και παράδοση επί τόπου των Διακοσμητικών Συνόλων Κολόνων και Φωτιστικών** όπως αυτός αριθμείται στον πιο κάτω πίνακα, στο εργοτάξιο για την Ανάπλαση του κέντρου Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο πάρκο).

A/A	Περιγραφή	Description	Ποσότητα – Τεμ.
1.	Κολόνα Φωτισμού ύψους 6 – 7μ. περίπου με ενσωματωμένο μονό πρακέττο φωτισμού και ένα φωτιστικό. – Φωτισμός κύριου πεζόδρομου – Φωτιστικό Σύνολο Τύπου ΚΛ (μονό)	Lighting column about 6-7m high with incorporated single arm bracket and luminaire complete. Type ΚΛ (single)	35+4*=39
2.	Κολόνα Φωτισμού ύψους 6 – 7μ. περίπου με ενσωματωμένο διπλό πρακέττο φωτισμού και δύο φωτιστικά. – Φωτισμός κύριου πεζόδρομου και άλλων χώρων. Φωτιστικό Σύνολο Τύπου ΚΛ (διπλό)	Lighting column about 6-7m high with incorporated double arm bracket and two luminaires complete. Type ΚΛ (double)	20+2*=22
3.	Κολόνα Φωτισμού τύπου ΠΟ ύψους περίπου 6μ. με μικρό πρακέττο και φωτιστικό cut-off για φωτισμό του ποδηλατοδρόμου.	Lighting column type ΠΟ about 6m high complete with small extension bracket and luminaire cut-off type.	25+3* = 28
4.	Κολόνα Φωτισμού τύπου ΠΟ ύψους περίπου 6μ. με μικρό πρακέττο και της ίδιας μορφής φωτιστικό αλλά για φωτισμό των χώρων στάθμευσης.	Lighting column type ΠΟ about 6m high complete with small extension bracket and similar luminaire but suitable for car park lighting.	6+1*=7
5.	Κολόνα Φωτισμού τύπου ΠΟ ύψους περίπου 6μ. με δύο ξεχωριστά μικρά πρακέττα και δύο φωτιστικά της ίδιας μορφής αλλά ξεχωριστού τύπου φωτισμού εγκατεστημένα σε διαφορετικά ύψη και σε αντίθεση στην κολόνα για φωτισμό του πεζόδρομου (cut-off) και των χώρων στάθμευσης αντίστοιχα.	Lighting column type ΠΟ about 6m high complete with two small extension brackets and two luminaires of different lighting capacities, erected at different heights on the pole for the illumination of cycling-road & car parks respectively.	46+5*=51

\* Δηλώνει αριθμό επιπρόσθετων κολόνων και φωτιστικών τα οποία θα φυλαχθούν από τον Δήμο σαν spare.

A/A	Περιγραφή	Description	Ποσότητα – Τεμ.
6.	Κολόνα Φωτισμού Τύπου ΚΓ ολικού ύψους περίπου 4 - 4,5μ. μαζί με το φωτιστικό Post Top (3,5μ. + 0.5 - 1,0μ.) με κυκλικό ανακλαστήρα για indirect περιμετρικό γενικό φωτισμό (χώροι πρασίνου, αθλοπαιδιές κ.α.)	Lighting column type ΚΓ of total height 4 - 4,5μ. approx. with its Post-top luminaire (3,5μ. + 0.5 - 1,0μ.) with reflector on top for indirect symmetrical light distribution (Green areas etc.)	198+20*=218
7.	Κολόνες Φωτισμού Τύπου ΣΚ & ΚΘ ύψους περίπου 6μ. με ειδικό πρακέττο και δύο προβολείς για γενικό φωτισμό του skate – park και του Θεάτρου.	Lighting column type ΣΚ & ΚΘ about 6m high complete with special bracket and two spot lights for general lighting of skate-park & theatre.	8+1*=9
8.	Κολόνα Φωτισμού τύπου ΚΓΛ, ύψους περίπου 4,5μ. με πρακέττο και προβολέα για φωτισμό γλυπτών.	Lighting column type ΚΓΛ about 6m high complete with extension bracket & spot light for lighting of sculptures.	12+3* = 15
9.	Κολόνα Φωτισμού τύπου ΚΕ, ύψους 4,5μ. περίπου μαζί με το φωτιστικό Post-top (3,5μ. + 1,0μ.) με κυκλικό ανακλαστήρα για indirect περιμετρικό γενικό φωτισμό των ξύλινων εξέδρων.	Lighting column type ΚΕ of total height 4,5m approx. with its post-top luminaire (3,5m + 1,0m) with reflector on top for indirect symmetrical light distribution (wooden piers etc.)	20+2*=22
10.	Κολόνα Φωτισμού τύπου ΚΑ ύψους 4,5μ. περίπου, με πρακέττο και φωτισμό των ξύλινων διαδρόμων που είναι επέκταση των αποβάθρων.	Lighting column type ΚΑ about 4,5m high complete with extension bracket and luminaire for lighting of wooden walkways.	24+3*=27
11.	Φωτιστικό και πρακέττο του ίδιου τύπου των φωτιστικών ΚΑ για εγκατάσταση σε ύψος 3,5 – 4,0μ στους δοκούς επέκτασης των σιδηροδοκών των αποβάθρων.	Extension bracket & luminaire similar to that of type ΚΑ for installation on steel extension poles of the piers.	19+2*=21
12.	Ενδοδαπέδια φωτιστικά με κάλυμμα τύπου ΕΔ στις κούγκρινες λίνιες για φωτισμό μέσω 3 ανοιγμάτων των πεζοδρομίων (0°+90°+180°).	Inground lighting fittings for concrete installation type ΕΔ, with cover and 3 openings at 0°+90°+180°.	203+20*=223

\* Δηλώνει αριθμό επιπρόσθετων κολόνων και φωτιστικών τα οποία θα φυλαχθούν από τον Δήμο σαν spare.

<b>A/A</b>	<b>Περιγραφή</b>	<b>Description</b>	<b>Ποσότητα – Τεμ.</b>
13.	Ενδοδαπέδια φωτιστικά μέσα σε κούγκρινες βάσεις, τύπου ΓΛ για φωτισμό υπό κλίση της φωτεινής δέσμης, των διαφόρων γλυπτών.	Inground lighting fittings type ΓΛ for concrete installation for lighting of sculptures.	47+5*=52
14.	Ενδοδαπέδια φωτιστικά με κάλυμμα μέσα στις ξύλινες εξέδρες για φωτισμό μέσω 3 ανοιγμάτων (0°+90°+180°) τύπου EX.	Inground lighting fittings type EX for installation in wooden pier, with cover and 3 openings at 0°+90°+180°.	86+9*=95
15.	Εντοιχισμένα φωτιστικά Τύπου EN για φωτισμό ραμπών.	Recessed in wall lighting fittings type EN.	28+3* = 31
16.	Επιδαπέδιοι προβολείς τύπου SP στερεωμένοι σε κούγκρινες βάσεις με φωτισμό asymmetric & wide beam για φωτισμό βράχων.	Flood lights type SP fixed on concrete bases for wide beam asymmetric lighting of rocks.	48+5*=53
17.	Επιπρόσθετα φωτιστικά Τύπου EN ενδοδαπέδια φωτιστικά Τύπου EX προβολείς Τύπου SP ή και κολόνες Τύπου SK για τον χώρο Προνοητικής Εργασίας στον ενιαίο χώρο στάθμευσης & φωτισμός εξέδρας & πλοίου.	Additional lighting fittings types EN, EX, SP & SK for special works.	Ποσό Προνοίας

\* Δηλώνει αριθμό επιπρόσθετων κολόνων και φωτιστικών τα οποία θα φυλαχθούν από τον Δήμο σαν spare.

**1.2 ΑΝΑΛΥΣΗ ΑΠΑΙΤΗΣΕΩΝ – ΠΡΟΔΙΑΓΡΑΦΕΣ**

**ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ**

**SPECIFICATIONS FOR DECORATIVE LIGHTING COLUMNS AND LUMINAIRES,  
INGROUND AND OTHER LIGHTING FITTINGS**

**CONTENTS**

**SECTION I      GENERAL**

**SECTION II     SCOPE AND EXTEND OF WORK**

**SECTION III    DECORATIVE LIGHTING COLUMNS AND LUMINAIRE SETS  
(ALL TYPES)**

**SECTION IV    INGROUND LIGHTING FITTINGS**

**SECTION V     RECESSED LIGHTING FITTINGS AND FLOODLIGHTS**

**SECTION VI    APPENDICES**

## ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ

### CONTENTS

#### **SECTION I – GENERAL**

<b><u>Clause</u></b>	<b>Description</b>
----------------------	--------------------

- |      |  |
|------|--|
| 100. | <i>Extend of Contract – General</i>                    |
| 101. | <i>Works provided by others</i>                        |
| 102. | <i>Standard products</i>                               |
| 103. | <i>System voltage</i>                                  |
| 104. | <i>IET Wiring Regulations</i>                          |
| 105. | <i>Electricity Supply</i>                              |
| 106. | <i>Applicable Standards and CE Marking</i>             |
| 107. | <i>Environmental Considerations</i>                    |
| 108. | <i>Personnel</i>                                       |
| 109. | <i>List of Drawings</i>                                |
| 110. | <i>Literature</i>                                      |
| 111. | <i>Samples</i>   |
| 112. | <i>Guarantee</i>                                       |
| 113. | <i>Column transportation, installation and storage</i> |
| 114. | <i>Earthing &amp; bonding</i>                          |
| 115. | <i>Marking of Columns</i>                              |
| 116. | <i>Drawings by Sub – Contractor</i>                    |

<b><u>Clause</u></b>	<b><u>Description</u></b>
117.	<i>Documents and other requirements by Sub – Contractor</i>
117.1	<i>Maintenance and Operation Instruction Manuals</i>
117.2	<i>Test Certificates</i>
117.3	<i>Recommended Spare Parts, Tools and Test Equipment</i>
118.	<i>Delivery Times &amp; Programme of Works of Main Contractor</i>
119.	<i>Materials and Workmanship</i>

## **SECTION II – SCOPE AND EXTEND OF WORK**

<b><u>Clause</u></b>	<b><u>Description</u></b>
200.	<i>Scope and Extend of Work</i>

## **SECTION III – SPECIFICATIONS FOR DECORATIVE LIGHTING COLUMNS, AND LUMINAIRE SETS (ALL TYPES)**

<b><u>Clause</u></b>	<b><u>Description</u></b>
300.	<i>General</i>
301.	<i>Appearance</i>
302.	<i>C. E. Marking</i>
303.	<i>Decorative lighting columns and brackets for types KΛ (single) &amp; KΛ (double)</i>
303.1	<i>Column Design</i>
303.2	<i>Joints</i>
303.3	<i>Brackets on columns</i>

<b><u>Clause</u></b>	<b><u>Description</u></b>
303.4	<i>Inspection door &amp; Inside Services</i>
303.5	<i>Flange Plate</i>
303.6	<i>Height of columns</i>
303.7	<i>Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></i>
303.8	<i>Characteristic loads</i>
303.9	<i>Compliance</i>
303.10	<i>Preliminaries (Structural design Calculations etc.)</i>
303.11	<i>Design Verification and attestation of Conformity</i>
303.12	<i>Column Installation</i>
303.13	<i>Appearance of columns</i>
304.	<i><u>Decorative lighting luminaires for columns types KΛ (single) &amp; KΛ (double)</u></i>
304.1	<i>General</i>
304.2	<i>Mounting</i>
304.3	<i>Construction</i>
304.4	<i>Protection</i>
304.5	<i>Wiring/Insulating materials</i>
304.6	<i>Control gear</i>
304.7	<i>Lamp type, wattage and data</i>
304.8	<i>Illumination Calculations &amp; Photo metric information</i>

<b><u>Clause</u></b>	<b><u>Description</u></b>
305.	<u>Decorative Ligthing columns Type ΚΓ &amp; ΚΕ</u>
305.1	Appearance
305.2	Column design
305.3	Joints
305.4	Inspection door & Inside Services
305.5	Flange plate
305.6	Height of columns
305.7	Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b>
305.8	Characteristic loads
305.9	Preliminaries – structural design calculations
305.10	Design verification
305.11	Column installation
306.	<u>Decorative lighting luminaire for columns Type ΚΓ &amp; ΚΕ</u> <u>(Post-top)</u>
307.	<u>Decorative Ligthing columns Type ΠΟ (Single) &amp; ΠΟ (double)</u>
307.1	Appearance
307.2	Column design
307.3	Joints
307.4	Inspection door & Inside Services
305.5	Flange plate
307.6	Height of columns
307.7	Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b>

<b><u>Clause</u></b>	<b><u>Description</u></b>
307.8	<i>Characteristic loads</i>
307.9	<i>Preliminaries – structural design calculations</i>
307.10	<i>Design verification</i>
307.11	<i>Column installation</i>
308.	<u><i>Decorative lighting luminaires for columns Type ΠΟ (Single) &amp; ΠΟ (double)</i></u>
309	<u><i>Decorative Lighting columns Type KA</i></u>
309.1	<i>Appearance</i>
309.2	<i>Column design</i>
309.3	<i>Joints</i>
309.4	<i>Inspection door &amp; Inside Services</i>
309.5	<i>Flange plate</i>
309.6	<i>Height of columns</i>
309.7	<i>Foundation bolts- <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></i>
309.8	<i>Brackets on columns</i>
309.9	<i>Characteristic loads</i>
309.10	<i>Preliminaries – structural design calculations</i>
309.11	<i>Design verification</i>
309.12	<i>Column installation</i>
310.	<u><i>Decorative lighting luminaires for columns Type KA</i></u>

**Clause**    **Description**

311.     Ligthing columns Type ΣΚ, ΚΘ, ΚΓΛ
- 311.1    Appearance
- 311.2    Column design
- 311.3    Joints
- 311.4    Inspection door & Inside Services
- 311.5    Flange plate
- 311.6    Height of columns
- 311.7    Foundation bolts - **THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**
- 311.8    Characteristic loads
- 311.9    Preliminaries – structural design calculations
- 311.10   Design verification
- 311.11   Column installation
- 311.12   Mounting arms
- 
312.     Spotlights for columns ΣΚ, ΚΘ, ΚΓΛ
- 
313.     Protection against corrosion for all types of columns

**SECTION IV – Specification for Inground Lighting Fittings**

401.     Inground Lighting Fittings type ΓΛ
402.     Inground Lighting Fittings type ΕΔ & ΕΧ

**SECTION V – Specifications for Recessed Lighting Fittings and Floodlights**

501.     Recessed Lighting Fittings Type ΕΝ
502.     Floodlights type SP

**SECTION VI – Appendices**

600.     Appendix No1 – Drawings/sketches of lighting columns and

## **SECTION I – GENERAL**

### **100. Extend of contract – General**

#### **Όπου προδιαγράφονται πρότυπα ισχύουν και άλλα ισοδύναμα πρότυπα**

*This contract shall include the following:*

- a) *The supply and delivery on site of decorative Lighting Columns with fuse cut-outs, the extension brackets, the luminaires wired complete, the flexible cables Heat resistive 3 X 2.5mm<sup>2</sup> from the luminaires up to the fuse cut-outs with terminations of supply cables and earthing. (TYPES ΚΛ, ΚΓ, ΚΕ, ΠΟ, ΚΑ).*
- b) *The supply and delivery on site of decorative Lighting Columns with fuse cut-outs, the extension brackets, the spotlights wired complete, the flexible cables Heat resistive 3 X 2.5mm<sup>2</sup> from the luminaires up to the fuse cut-outs with terminations of supply cables and earthing. (TYPES ΣΚ, ΚΘ, ΚΓΛ).*
- c) *Technical advice to the Main Contractors (and Electrical Sub-Contractor) for the assembly, installation, levelling and fixing of the lighting decorative columns with their luminaires. (All possible pre-assembly must be provided by the suppliers of columns before delivery on site for installation).*
- d) *The supply and delivery on site, wired complete of all recessed in walls lighting fittings and spotlights wired complete (Types EN, SP).*
- e) *The supply and delivery on site of inground lighting fittings wired complete.*  
*(Types ΓΛ, ΕΔ, ΕΧ)*
- f) *The supply and delivery on site for installation by the main contractor (Electrical Sub-Contractor) adjacent each inground fitting weatherproof s.s. connector boxes (IP68).*

*The supply of “J” type stainless steel anchor bolts, nuts and washers for all types of columns shall be provided by the main contractor together with the concrete block foundations.*

*However, unit prices must be given by the tenderers of for comparison purposes and final decision of purchase.*

**101. Works Provided by others**

- a) *The excavation for and construction of the necessary concrete block foundations for the installation of inground lighting fittings and spotlights as well as the concrete block foundations for the erection of columns including the provision and fixing of the anchor bolts, nuts & washers.*

*The concrete block foundations for columns shall incorporate:*

- i) *The “J” type Anchor bolts for the installation of columns, complete with nuts and washers for fixing and leveling of columns.*
- ii) *The necessary PVC conduits for looping-in and out the electricity supply cables.*
- b) *The excavation and reinstatement of trenches for the laying of ducts conduits and the L.V. power supply cables.*
- c) *The laying and connection of ducts and the construction of manholes (ducts & pits).*
- d) *The supply, installation and termination of power supply cables up to the fused cut-outs of all lighting columns, inground and other types of lighting fittings and spotlights.*
- e) *The supply and installation of mains supply cabinets, Distribution Boards and EAC supply.*
- f) *The installation, connection and energizing of all inground and other types of lighting fittings.*
- g) *The assembly installation, erection, leveling, fixing and energizing of all lighting columns.*

**102. Standard Products**

*All equipment supplied under this sub-contract shall be the products of manufacturers, regularly engaged in the production of such equipment and shall be the manufacturers latest standard design.*

**103. System Voltage**

*The system voltage will be 400/230V  $\pm$  10%, 3-phase, 50Hz, 4-wire  $\pm$  2,5% (systems T.T.)*

*All equipment supplied under this sub-contract shall be rated for this voltage.*

**104. I.E.T. Wiring Regulations**

*All electrical work appertaining to the works shall be executed strictly in accordance with BS.7671:2001 (2004) (16<sup>th</sup> edition of the I.E.T. wiring Regulations) and any supplements, amendments, addenda or published revisions thereto, the Cyprus Electricity Law, Cap 170, and Electricity Regulations 1941 – 1990 and the General Conditions of supply issued by the Electricity Authority of Cyprus (EAC). The contractor shall provide all necessary plans and details to the Main Contractor to arrange of the installations to be tested and approved by the Electricity Authority of Cyprus. All costs shall be born by the the Contractor.*

**105. Electricity Supply**

*The Engineer shall make all necessary arrangements with the Electricity Authority of Cyprus so that electricity will be made available at each metering position for supply to the columns and other lighting fittings. He shall also be responsible to provide all facilities that will become necessary, for the installation and connection of the electricity meters.*

**106. Applicable standards and CE Marking**

*All materials and equipment supplied under this sub-contract shall be new, of the highest quality, conforming to the best current engineering practices, and they shall comply in all respects with the relevant European Standards and Directives (EN) or equivalent and approved. All products for luminaries, columns & lighting fittings should be CE marked.*

**107. Environmental considerations**

*All equipment supplied must meet the requirements detailed in the specifications of these tender documents when operating in ambient temperatures between -5 °c and 45 °c and relative humidity's up to 95%.*

*All materials used should be suitable for the climatic conditions of Cyprus. They shall be manufactured so that no damage or defect may be suffered due to rust or corrosion and shall be treated with special anti-corrosion coatings.*

*All columns and fitting shall be installed adjacent the sea and some above the sea.*

**108. Personnel**

*Tenderers are required to submit with their tender a list of personnel to be present in the works at any time necessary to give advise to the main contractor for the assembly of columns and their luminaires, indicating their experience and qualifications.*

**109. List of drawings**

*The drawings & sketches listed in the relevant Appendix are issued together with the specifications and are considered to be part of the tender.*

**110. Literature**

*It is essential that each offer shall be accompanied by comprehensive supporting information and full technical particulars to enable the owners to assess the merits of each offer.*

*Drawings/Catalogues showing the details and dimensions of the offered lighting luminaires/columns shall be submitted with the offer. All information must be in the ENGLISH LANGUAGE only.*

*Thus, full and detailed description and technical specifications for the proposed equipment and apparatus should be submitted in duplicate with the tender. Tenders with no technical information will be rejected.*

**111. Samples**

*Not Applicable.*

**112. Guarantee**

*The Sub-contractor will guarantee that the materials and workmanship of the apparatus and equipment supplied by him shall be first class in every respect and he shall make good any defects which might arise from his failure in this respect which might occur within one year form the certified date of completion of the contract works. The lamps guarantee life shall be given by the Manufacturer.*

**113. Column transportation, installation and storage**

a) Column transportation and storage

*Columns shall be transported and stored with care, so that no damage or deterioration is caused either to the steel or the protective paint or zinc coating or especially to the anti-corrosion coating. Columns shall not be stored directly on ground or on hard surfaces.*

b) *Column installation*

- i) *Columns flange plate shall be situated on top of the concrete flush to the finished level or the relevant surface finish at the point of the installation.*
- ii) *Except if not possible, columns shall be installed in such a way so that the door opening is situated at the back of bracket for single bracket columns. For double bracket columns the door plane shall be in parallel with the column/bracket plane.*
- iii) *Columns shall be completely vertical, with brackets oriented along the radius curbs vertical to the footpaths & road boarder line, as appropriate. Luminaires shall be totally horizontal or if stated otherwise.*

The supply cable between the fuse cut-out and luminaire and floodlights shall be 3-core flexible heat resistive, 2,5mm<sup>2</sup> (double insulation)

*The final assembly and installation of columns shall be carried out by the Main Contractor.*

**114. Earthing and Bonding**

*All metal enclosures of electrical equipment, lighting columns, spotlights, inground lighting fittings, switchgear, conduits, cables armouring etc. shall be effectively bonded to earth in compliance with 16<sup>th</sup> Edition of the Institution of Engineering & Technology Wiring Regulations for the Electrical Equipment of Buildings. BS.7671:2001 (2004) or equivalent.*

*The Earthing terminal of each column shall also be suitable for the connection of an additional earthing conductor for separate earth for each column.*

**115. Marking of Columns**

*All lighting columns shall be marked with the following information:*

1. *Column number*
2. *Column height/arm outreach/tilt angle*
3. *Lamp wattage*
4. *Supply panel designation*
5. *Circuit designation*
6. *Supply phase*

*All the above information shall be provided by pressing or engraving on a 100mm X 80mm aluminium plate, riveted on the column at a height of 2.00m. Letters shall be 8mm and of black colour.*

**116. Drawings by Sub-Contractor**

*The Sub-Contractor shall provide 3-sets per submission of the following for all columns, luminaires and brackets on columns:*

- a) Working drawings prior to ordering or commencing of any works.*
- b) Builder's working drawings prior to or/and during the execution of works, as applicable.*
- c) As installed drawings upon completion of works*

*Working drawings including diagrams, Schedules and plans shall indicate the details of the Sub-Contractor's proposals for the construction of columns, with their luminaries and shall only be ordered and delivered after approval by the Engineer.*

**117. DOCUMENTS AND OTHER REQUIREMENTS BY SUB-CONTRACTOR**

**117.1. Maintenance and Operating Instruction Manuals**

*The sub-contractor shall forward to the engineer not later than four weeks before the date of taking over the works, three original copies of approved operation, instruction and maintenance manuals of the offered equipment. The manuals shall be bound in substantial covers in book form with the title of the individual equipment forming part of the works clearly marked on the front cover. The manuals shall include general arrangements drawings, full sets of wiring and circuit diagrams, description of operation of any automatic equipment, full technical details of the operation, adjustment and maintenance of equipment and controls, lubrication charts and assembly instructions as appropriate.*

*Each manual shall contain a fully detailed spare parts list complete with correct spares ordering references and all manufacture's names and work addresses. Catalogued data included in the manuals shall be edited to delete all reference to superfluous or misleading information.*

*The manuals shall be sectionalized with inserts suitable referenced and each manuals shall commence with comprehensive index of information that is included. The manuals shall be in the Greek or English language.*

**117.2. Test Certificates**

*All manufacturers certificates of tests, etc, showing that the materials and equipment have been tested in accordance with the requirements of the appropriate British Standards, other relevant Standard or E.U. Specifications or these specifications are to be supplied free of charge, on request, to the Engineer.*

**117.3 Recommended Spare Parts, Tools and Test Equipment**

*A priced list of recommended spare parts and tools and test instruments for three years normal operation of the plant shall be set out in a schedule titled "Priced List of Recommended Spare Parts, Tools and Test Instruments" annexed to the tender and shall guarantee their availability for a ten years period.*

*The list shall be set out in sections corresponding to the main items of plant and shall include a full description of each item, the quantity to be supplied and the manufacture's part reference number. The engineer may elect or order any or all or none of the items listed in the above schedule at the prices stated therein at any time up to the date of the taking over. Any items so ordered shall be greased or protected, as appropriate, and wrapped and packed in robust wooden boxes and delivered to the employer's store; spare parts for each separate items of plant shall be separately packed in an appropriately marked box with a list of contents affixed to the underside of the lid.*

*Sub-contractor or their representative shall carry sufficient inventories to assure ex-stock supply of spare parts and components which should be supplied as promptly as possible but in any case within one month of placement of order.*

*The sub-contractor may be required to prove any or all of the following materials and notifications pertaining to spare parts in connection with the plant supplied:*

- a) Such spare parts as the engineer may elect to purchase from the Sub-contractor, proved that this election shall not relieve the sub-Contractor of any warranty obligations under the sub-contract, and*
- b) In the event of termination of production of the spare parts advance notification of the engineer of the pending termination in sufficient time to permit the engineer to procure needed requirements.*

**118. Delivery Times & Programme of works of Main Contractor**

*Civil works on site for the re-construction of Limassol Sea-side Park is expected to commence at the same time with the adjudication and offer of the tender for the supply of all lighting columns, luminaires and lighting fittings.*

*Civil works will be constructed in phases for a period of 24 months to complete.*

*It is a special demand of these tender documents that about 1/3 (one third) of the total number of all columns, luminaires and lighting fittings to be supplied within 3 months from the date of acceptance of the letter of intend by the successful tenderer.*

*The acceptance of this demand must be clearly stated by all tenders when submitting their tender.*

*The tenderer shall be responsible and must get in touch with the main contractor and get familiar with the progressing of works, expected completion times and the areas where work will be carried out during certain periods of time.*

*The tenderer shall deliver the remaining of his goods at such time period when requested and one month in advance from the time required by the Main Contractor in accordance to his programme of works, so that no delay whatsoever is caused to the completion of main works within the specified periods of time.*

*No delay in delivery of lighting columns, inground and recessed fittings will be accepted.*

*The timing in delivery is essential and must be stated in the offer that the Sub-contractor can deliver promptly.*

*The stainless steel anchor bolts, nuts and washers are to be supplied by the main contractor. However, the owners shall have the right to request for a number of bolts, nuts and washers to be purchased from the tenderer if at any time the delivery of them has been delayed by the main contractor for the construction of concrete block foundations of columns.*

*Unit prices which are requested to be given by the tenderers shall be used for this purchase.*

**119. MATERIALS AND WORKMANSHIP**

*The materials of all parts used shall be new and the best of their respective kind and the most suitable for working under the weather conditions set out in this specification, thus withstanding the winds which might be developed or the variations of temperature and/or other prevailing conditions, without distortion or deterioration of any part of the fittings.*

*The workmanship of all parts shall be of the highest order and defective parts shall not be welded, plugged or fitted in without the written permission of the Engineer.*

*Metal works shall be adequately protected against corrosion and Oxidation bearing in mind the site conditions mentioned and the fact that they shall be installed adjacent to the sea. Corresponding parts shall be made to gauge and shall be interchangeable wherever possible throughout the contract works.*

## SECTION II

### 200. SCOPE AND EXTEND OF WORK

*These specifications cover the design, manufacture, delivery on site, assembly as far as possible before delivery and advise to the Electrical Sub-Contractor in the final assembly, installation/erection, of the following decorative lighting columns, including their extension brackets and luminaires, inground lighting fittings and spotlights to be erected and installed at Limassol sea-side park.*

*39 No Column sets (column with bracket & luminaire) Type ΚΛ (single)*

*22 No Column sets (column with double arm bracket & two luminaires) Type ΚΛ (double)*

*28 No Column sets (column & bracket with out-off light luminaire) Type ΠΟ (single)*

*7 No Column sets (column & bracket with floodlight luminaire) Type ΠΟ (single)*

*51 No Column sets (column & bracket with one cut-off light luminaire & bracket with one flood light luminaire) Type ΠΟ (double)*

*218 No Column sets (column & post-top luminaire) Type ΚΓ*

*22 No Column sets (column & post-top luminaire) Type ΚΕ*

*27 No Column sets (column & bracket & luminaire) Type ΚΑ*

*21 No bracket & luminaire sets similar to Type ΚΑ*

*9 No Column sets (column & bracket & 2 spotlights) Type ΣΚ & ΚΘ*

*15 No Column sets (column & bracket & one spotlight) Type ΚΓΛ*

*223 No Inground lighting fittings type ΕΔ*

*95 No Inground (in-wood) lighting fittings type ΕΧ*

*52 No Inground lighting fittings type ΓΛ*

*31 No Recessed in concrete walls lighting fittings type ΕΝ*

*53 No flood lights fixed on concrete bases, type ΣΡ*

*All lighting columns and their brackets and luminaires, inground lighting fittings and spotlights shall be completely wired and fused and completed with their control systems, lamps and accessories.*

*The details of each type of lighting columns and their extension brackets and luminaires, as well as for the flood lights and in-ground lighting fittings are given in special sections III, IV & V.*

*Some 5% - 10% over and above the required lighting columns and luminaires inground lighting fittings and spotlights shall be delivered as spare to the Municipality as well as some 5% of the lamps required for each type of luminaire, lighting fitting*

*and spotlight.*

*Additional equipment may be ordered from the lists of spare parts which the tenderers shall provide in a list form with their tender and shall guarantee their availability for a 10 year period.*

**Important Note:**

*The owner, the Municipality of Limassol shall have the right to increase and or decrease the number of columns and all types of luminaires and fittings up to 15% from the total number stated in the tender documents on unit price rates.*

### **SECTION III**

#### **SPECIFICATIONS FOR DECORATIVE LIGHTING COLUMNS, AND LUMINAIRE SETS (ALL TYPES)**

##### **300.0 General**

*Tenderers are required to supply several types of columns and luminaire sets with single or double extension brackets of total height about 6-7m or 6,0m approximately (Types ΚΛ, ΠΟ) or 4,5m approximately (types ΚΑ), column sets with post-top luminaire of total height 4,5m and columns sets with one or two spot lights of total height 4,5m (type ΚΓΛ) and 6,0m respectively (Types ΣΚ & ΚΘ). The sets should be the standard product appearing in the luminaire manufacturer's original catalogue copies of which should be supplied with the tender. To this effect, it should be understood that:*

- a) Except as otherwise required or specified elsewhere in this specification, no alterations should be made to the standard product and,*
- b) The luminaire manufacturer shall be considered as the manufacturer of the complete set. He should though, state, the name of the column sub-contractor, if any, who should be a well known and reputable manufacturer.*

*In exceptional cases the opposite may be accepted.*

##### **301. APPEARANCE**

*Appearance of the decorative luminaire/bracket /column lighting systems are of great importance.*

*The decorative lighting systems shall blend with the environment of the area and give the appearance of a decorative structure and not just as a lighting luminaire/bracket/column. The character of the area must be enhanced in the architectural appearance of the column lighting systems to be supplied which must give ample illumination of the main pedestrian walkways, cycling roads, car-parks, pathways, playgrounds and other public areas of the sea-side park of Limassol Town.*

*An indication of the appearance required for the lighting columns sets are given in the attached Drg. Nos 1, 2, 3, 4, 5, 6, 7, 8 & 9 with alternatives.*

*However, it is stressed that the lighting systems should not be viewed as simply the bringing together of luminaires, brackets and a steel column, but should satisfy the employer in terms of appearance and design conception as a whole.*

*The tenderer should include photographs of applications and detailed drawings of the columns lighting systems.*

*In this specification, the luminaire/brackets as well as the post-top luminaires*

*shall be considered as an integral part of the columns.*

*All electrical supply cables shall be totally drawn through the shafts & brackets.*

*It is possible that the columns (and/or brackets) are manufactured by a different company than the manufacturer of the luminaries.. However the whole system should blend together and provide written evidence to this effect and of the close co-operation of the two companies by submitting relevant proof with the tender.*

*“In general, photographs of the proposed column and their lighting systems and as installed should be supplied with the tender, to cover all types.*

### **302.0 CE Marking**

*A manufacturers declaration of its ability to comply with all relevant directives and that the sets shall be CE Marked should be submitted. This should make reference to all relevant directives and standards.*

*The CE Marking and accompanying information required shall be placed on the column or on a label attached to it.*

### **303. Decorative lighting Columns and brackets (Types KA single/double)**

#### **303.1 Column Design**

*The lighting columns shall be of tubular design conical shaft or cylindrical with circular section shaft and made of cold-formed steel electrically welded. The welding should be smoothed-out prior to galvanizing. The steel to be used in the manufacturing of the columns shall be of a suitable for the purpose grade. (The steel grades used and thickness must be stated).*

*The columns (including brackets) to be oven painted with Polyester Electrostatic paint in RAL colour to the Architects choice.*

#### **303.2 Joints**

*Any joints between the sections of the column i.e. shaft, flange, spigot shall be weatherproof, and suitably protected against corrosion.*

#### **303.3 Brackets on columns**

*The extension bracket/s single or double shall be of special curved designs similar to the ones shown indicatively on drawing Nos 1 & 2 and their alternatives.*

*The single or double arm brackets shall be either detachable brackets or be considered as an integral part of the columns. In either case it should be the standard design originating from the luminaire Manufacturer's catalogue.*

*The brackets to be curved and be made of extruded aluminium or steel section arm, integral with a moulded clamp flange fixed on the mast by stainless steel screws for detachable brackets or welded on the column.*

*A similar and approved by the Engineer method of fixing of brackets on the columns will be considered.*

*The outreach of bracket should be between 1,00 – 1,20m for detachable luminaires on brackets or up to 2,2m maximum for brackets incorporating as a fixed feature the luminaire itself and with the light source not in greater distance of 1,5m from the pole.*

*It is to be emphasized that only one type of luminaire with its extension bracket shall be offered by the Tenderers for the columns sets types KA (single & double).*

*The bracket with detachable luminaire to be suitable to accept a side entry horizontal luminaire of up to 80mm diameter entry and shall be provided with 40-80mm spigot.*

**303.4 Inspection door & Inside Services (Columns type KA single/double)  
Applicable also to all other types of columns**

*A weatherproof door of dimensions about 450-500 X 90-100mm provided with a locking device (such as with two captive stainless steel BTR screws) shall be included in the base of the column. The bottom of the door shall be 500mm – 600mm above the flange plate. The door shall have a degree of protection of IP43 minimum.*

*A suitable earthing terminal and galvanized steel plate for the termination & glanding of cables and fixing of the fuse cut outs shall be provided inside the column. The steel plate shall be welded on the column. The loop-in and loop-out method of supply cables is to be used.*

*Separate H.R.C. fuse shall be used for the supply of each luminaire on columns with double arm.*

*The manufacturer's name and year of manufacture of the column must be indelibly marked on the inside of the door.*

*All columns, brackets & luminaires shall be supplied complete with all HRC fuses, MCBs/RCDs boards, wiring, control gear, lamps, earthing facilities etc.*

**303.5 Flange plate for columns Type KΛ single/double.**

**Applicable also to all other types of columns**

*A pressed mild steel or hot – deep galvanized steel flange plate of 300mm X 300mm shall be welded to the base of the columns. This shall be suitable for 4No Φ18mm, foundation bolts, spaced 200 X 200mm apart from each other. The design shall allow of leveling nuts and washers under and above the flange plate.*

**303.6 Height of columns:**

*The height of columns type KΛ are specified to be between 6m – 7m high. The actual height shall be decided by the tenderers depending on the illuminance calculations to be provided so that the required illuminance intensity and uniformity are achieved with the height of 6m or 7m and the offered lamp.*

**303.7 Foundation bolts: - THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**

*The foundation bolts shall be stainless steel Φ18mm for all columns in “J” form. For each column 4No bolts shall be necessary, connected together at the appropriate spacing, so as to avoid displacement during preparation of the concrete block foundations.*

*The bolts shall be complete with stainless steel nuts & washers (3 nuts & 2 washers).*

**303.8 Characteristic Loads**

- a) Ten minutes mean Wind Velocity (Vref): 24m/s, at a height of 10m above ground of terrain category II.
  
- b) Statistical Coefficient (Cs):  $(0,92)^{\frac{1}{2}}$
  
- c) Terrain Category: II
  
- d) i) Lantern weight: 20kg (or the weight of the offered luminaire)  
  
ii) Lantern windage area: The maximum area of each lantern exposed to wind shall be considered to be 0,30m<sup>2</sup> (or the windage area of the offered luminaire).
  
- e) Column Bracket weight, windage area, and outreach:
  - i) For single arm.  
Weight: 10kg  
Windage area: 0,2m<sup>2</sup> or calculated from the length of the offered bracket.
  
  - ii) For double arm.  
Weight: 2 X 10kg  
Windage area: 0,4m<sup>2</sup> or calculated the length of the offered bracket.
  
  - iii) Outreach as proposed by the set's design.

- f) *Should the weight or windage area of the lantern or bracket offered exceed the values given above, then the former prevail.*

Door and Brackets positions

- g) *The most unfavorable position. To this effect two sets of calculations should be submitted, as follows:*

i) ***Door opening plane, parallel to the column/bracket plane. (Door and wind vectors in the same direction).***

ii) *Door opening plane vertical to the column/bracket plane.*

**303.9 Compliance**

***The columns shall comply with EN40 (specifically EN 40-5:2002), or equivalent and approved.***

***Partial load factor: Class B (yf=1,2)***

***Maximum horizontal deflection of lantern connection, caused by the flexure of the column and bracket: 4% (class 1) of the sum of the nominal height of the column plus bracket outreach.***

***Vertical deflection of lantern connection, caused by the flexure of the column and bracket, shall not exceed 0.025 w.***

**303.10 Preliminaries (structural design calculations, manufacturers declaration and Notified Body):**

*The following should be submitted with the tender:*

- a) *Detailed **structural design calculations** indicating that the columns and brackets meet the specification requirements.*

*The calculations to be presented in the form of a complete report, including directions to follow, clearly stated design parameters, calculations results and conclusions.*

- b) ***A Manufacturers declaration of its ability to comply with EU Directive 89/106/EEC and European Standard EN 40-5: 2002, and that the columns shall be CE Marked. The name, address and identification number of the Notified Body should also be stated.***

**303.11 Design verification and attestation of conformity:**

*The structural design verification report for both the column and bracket should be submitted prior to manufacture, as part of working drawings. This should include directions to follow, scope, clearly stated design parameters, calculations results and conclusions. The **EU Certificate of Conformity** and the **EC Declaration of Conformity** should be submitted prior to shipment of columns.*

**303.12 Column installation**

a) *Columns shall be installed in such a way so that the door opening is situated at the back of bracket for single bracket columns. For double bracket columns the door plane shall be in parallel with the column/bracket plane.*

b) *Columns shall be completely vertical, with brackets oriented along the radius curbs vertical to the road boarder line, as appropriate. The light source of the luminaires shall be horizontal.*

*The columns flange plates fixed with s/s nuts and washers on the extended part of the anchor bolts above the concrete base shall be sited*  
c) *on top of the concrete, flush to the finished level or the finished material at the point of installation.*

**303.13 Appearance of columns type KΛ (single & double)**

*An indication of the required appearance of columns type KΛ (single) and KΛ (double) is shown on the attached Drawing No1 (with acceptable alterations) for columns type KΛ (single) and on Drg No2 (with acceptable alterations) for column type KΛ (double).*

*Very small deviations of the figures shown on Drg. Nos 1 & 2 will be accepted to the absolute discretion and final decision of the owners.*

**304. Decorative lighting luminaire with high-pressure sodium lamps (for erection on column types KA single/double)**

**304.1 General**

*The luminaires shall conform to the last published issue of EN60598 or to the last published issue of any other equivalent and approved internationally recognized standard and/or Code of Practice.*

*Copies of the proposed alternative standard or Code of Practice, in the English or Greek language, shall be supplied on request.*

*The lanterns shall be complete with High Pressure Sodium lamps and with integral control gear.*

**304.2 Mounting**

*The luminaires shall be suitable for lighting column mounting for the illumination of major and wide roads and shall be equipped with all necessary accessories for their installation on suitable extension brackets on the columns.*

*The means of attaching the lantern to its support shall be appropriate to its weight. In addition the connection shall be designed to withstand stresses due to wind at speeds of 125 Km/h without suffering undue permanent deflection or distortion, which may impair safety.*

*All fixings, which carry the weight of the lantern and internal accessories, shall be provided with suitable locking devices to prevent the dislodgement of any part of the lantern by vibration either in service or during maintenance.*

**304.3 Construction**

*a) The luminaires (lanterns) shall have an oval-shaped (eagle nose shape) robust body of the closed type and to be made of corrosion resistance die cast aluminium and canopy painted with polyester powder coating. Colour (RAL) is subject to the choice of the Architect at no extra cost. The lamp and control gear compartments shall be separate from each other. A reliable self-latching mechanism shall secure the canopy in the open position. Moving parts giving access to the interior of the compartments shall be hinged and sit into position by a simple closing movement.*

*b) The reflector shall be made of one piece high purity aluminium polished and anodized.*

- c) *The bowl shall be of flat or very shallow curved, clear lempered glass and material resistant to ultra violet light. When in the open position it shall be securely attached to the lantern so that there is no likelihood of it becoming accidentally detached or damaging any part of the lantern. Bowls shall not be drilled for the purpose of being secured into position by screws. It shall be possible for maintenance personnel to replace bowls without affecting the class of protection and the initial quality of construction of the luminaire.*
- d) *Gaskets shall be positively retained in their seating and should not work loose during maintenance of the lantern. Materials used for gasket should prevent the ingress of moisture and should not deteriorate unduly in use due to heat, light or compression to which they are subjected in practice. Felt gaskets should be tropicalized. Adhesives, if used, should be chemically compatible with the gasket material used. Gaskets should be easily replaceable, purpose designed and manufactured, standard components.*
- e) *The lampholder shall be made of ceramic material to BS5042 or equivalent, type E40.*

#### **304.4 Protection**

*Lanterns shall have a degree of protection against dust and moisture of IP65 minimum for the lamp compartment and IP54 for the control gear compartment. The protection against electric shock must be Class I or class II.*

#### **304.5 Wiring/Insulating Materials**

*All wiring and all parts of insulating material providing protection against electric shock or retaining live parts in position shall be sufficiently resistant to heat and moisture.*

*The wiring to be placed and be protected in such a way so that it may be impossible to be pulled, swifter or pressed under normal working conditions or during maintenance.*

**304.6 Control Gear**

*Control gear shall be supplied by plug and socket connection and be removable without tools.*

*The ballast and all other control gear shall be designed for 230V± 10% 50Hz supply and be pre-wired to the lamp socket and terminal board so that the only connection required will be the connection of the power supply leads to the terminal board.*

*The power factor shall not be lower than 0.95 lagging. Ignitors shall be of the digital type and shall prevent failed lamps from attempting to restart after a fixed number (about four) of unsuccessful attempts (**digital pulse control ignitors**).*

*Ballasts shall be of the self-resetting thermo switch (thermal cut-out) type.*

**304.6.1 Supply disconnection**

*Supply to the fitting shall be automatically disconnected when the canopy is open.*

**304.7 Lamp type, Wattage and data:**

*Clear tubular, high lumen output 150W for Type KA (single & double)*

*high-pressure sodium lamps, without internal ignitor.*

*Compliance: EN 61167 or equivalent.*

*Lamp data shall be submitted as per relevant schedule.*

*This shall include lumen maintenance and lamp mortality curves.*

*The lamp offered shall be of the same physical dimensions and lumen output as the one on which photometric quantities and illumination calculations are based.*

**304.8 Illumination calculations & Photometric Information for columns type KA**

**304.8.1** *Shall be based on the requirements of B.S.5489: Part 1:2003 and*

*EN 13201: 2003*

*The procedures specified in the above standards shall be followed in all calculations for the determination of photometric quantities.*

**304.8.2** *Each tenderer, is required to submit a computer report in the form of printouts for the luminance and illuminance levels on representative sections of the major and wide road.*

Overall and longitudinal uniformity ratios, surround ratios and threshold increment values should be given.

**The report should be produced and certified by the luminaire manufacturer.**

*The report should be presented in a straight forward and easily understandable form and should also include:*

- a) *The road lighting design standard/s,*
- b) ***The Intensity table used and its file (code) number.*** *A single file i.e., **single lampholder position** shall be used for all calculations using the same type of luminaire.*
- c) ***All important features and parameters*** *e.g. lamp make, type and wattage, lampholder or reflector position, reflector and diffuser types etc, which determine the luminaire lighting performance.*
- d) ***Clearly defined luminaire and observer positions*** *(for luminance and threshold increment calculations) and calculation field, in terms of all coordinates.*

*Tenders without computer reports or with reports not conforming to the above presentation requirements may be disqualified.*

*Calculations should be based on the design data given in clause*

**304.8.3**

**304.8.3. Design Data**

**Case 1 Road Layout – Main Walkway**

S/N	Layout	Luminaire	Mounting Height (m)	Set-Back of Column (m)	Spacing (m)	Overhang (m)	Back Pavement Width	Road Width (m)	Lanes No/widht h (m)	Opposite Pavement Width	Sketch No
1.	Staggered	150W HPS	6	0	20/40	1-1,2m	3,8	9	2	3,8 -	Drg. No. 10

**Case 2 Parking Place**

S/N	Layout	Luminaire	Mounting Height (m)	Set-Back of Column (m)	Spacing (m)	Overhang (m)	Back Green area Width	Opposite Pavement Width	Sketch No
1.	Single sided	250W HPS	6+1m(*)	0	15	0	2	17	Drg. No. 11

Note(\*)=Level difference between Parking place (1m lower) Vs Road

Note 1: For Case 2 use design data of Case 1 and column and luminaire type ΠO (single – area Lighting)



- iv) Overall Uniformity Ratio (Uo) : 0,4 (minimum)
- v) Surround ratio (SR) : 0,5 (minimum)
- vi) Threshold increment (TI) : ≤10% (with MF=1 and initial lamp lumen output)

Pavements, Pedestrian Walkways,  
S1

- i) Average/minimum Luminance level (Eav) : 15 Lux (minimum) but not greater than 22,5 lux
- ii) Overall uniformity ratio : 0,4 (minimum)
- k) Lighting Classes : ME3a
- l) Road Surface : CE1 type C2\*<sup>2</sup>
- m) Observer's position along and across road for luminance and TI calculations : As per EN 13201: Part 3: 2003 or equivalent

**NOTES:**

- \*1 The maximum value specified should not be exceeded even if the lamp offered has a higher flux. If the latter holds it should be ensured that the threshold increment limits are not exceeded
- \*2 A single design attitude shall be used.
- \*3 Average luminance coefficient 0.07. Full reflector data: as given in table C2 of BS.5489: Part 1:2003 or equivalent

- 304.8.4.** Every luminaire shall be indelibly marked internally with the design lampholder position.
- 304.8.5.** If requested, the computer software used for calculations shall be provided to the Engineer free of charge, during the evaluation of tenders.
- 304.8.6.** After completion of the project and **before taking over lighting**

***performance shall be verified on site, using a high accuracy luminance meter, which shall be provided by the Sub-Contractor, at the presence and to the satisfaction of the Engineer.***

**305. Decorative Lighting Columns Type KΓ & KE (post - top)**

**305.1 Appearance**

*An indication of the appearance required for the lighting columns is given in the attached Drg. Nos 6.*

*The configuration of the columns and their Post top luminaires should be such as to provide indirect lighting.*

*The total height of the poles and their post-top indirect lighting luminaires should be about 4,5m.*

*The indirect lighting system should consist of a circular or oval reflector above the light source for indirect symmetric light distribution.*

**305.2 Column Design**

*The lighting columns shall be of tubular design conical or cylindrical round shaft seamless type about 3,5m height made of cold-formed Galvanized steel electrically welded. The welding should be smoothed-out prior to galvanizing. The steel to be used in the manufacturing of the columns shall be of a suitable for the purpose grade. (The steel grades used and thickness must be stated as well as the bottom and top diameters).*

*The columns to be oven painted with polyester Electrostatic paint in RAL colour to the Architects choice.*

**305.3 Joints**

*Any joints between the sections of the column i.e. shaft, flange, spigot shall be weatherproof, and suitably protected against corrosion.*

#### **305.4 Inspection door & Inside Services**

*A weatherproof door of 450-500 X 90-100mm provided with a locking device (such as with two captive stainless steel BTR screws) shall be included in the base of the column. The bottom of the door shall be 500mm – 600mm above the flange plate. The door shall have a degree of protection of IP43 minimum.*

*A suitable earthing terminal and galvanized steel plate for the termination & glanding of cables and fixing of the fuse cut outs shall be provided inside the columns. The steel plate shall be welded on the column. The loop-in and loop-out method of supply cables is to be used.*

*The manufacturer's name and year of manufacture of the column must be indelibly marked on the inside of the door.*

*All columns, brackets & luminaires shall be supplied complete with all HRC fuses, boards, wiring, control gear, lamps, earthing facilities etc.*

#### **305.5 Flange plate**

*A pressed mild steel or hot – deep galvanized steel flange plate of 250mm X 250mm or 300mm X 300mm shall be welded to the base of the columns. This shall be suitable for 4Φ18mm, foundation bolts, spaced 200 X 200mm apart from each other. The design shall allow of leveling nuts and washers under and above the flange plate.*

#### **305.6 Height of columns:**

*Total height of columns & Post top luminaires for columns type KΓ & KE shall be about 4,5m.*

#### **305.7 Foundation bolts: - THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**

*The foundation bolts shall be stainless steel 18mm in "J" form. For each column 4No bolts shall be necessary, 450mm long connected together at the appropriate spacing, of 200mm so as to avoid displacement during preparation of the concrete block foundations for column type KΓ or welding on the steel structure of the piers for the columns type KE.*

*The bolts shall be complete with stainless steel nuts & washers (3 nuts & 2 washers for each bolt).*

### **305.8 Characteristic Loads**

- a) Ten minutes mean Wind Velocity (Vref): 24m/s, at a height of 10,0m above ground of terrain category II.
  
- b) Statistical Coefficient (Cs): (0,92)<sup>1/2</sup>
  
- c) Column & luminaire weight & windage area presented  
*All details for the weight of columns & luminaires as well as for the windage area presented for columns Type KF & KE to be extracted from the details of the manufacturer's leaflets that offer the columns and luminaires by each Tenderer.*

### **305.9 Preliminaries (structural design calculations, manufacturers declaration and Notified Body):**

The following should be submitted with the tender:

- a) **Structural design calculations** indicating that the columns and post top luminaires meet the specification requirements.
  
- b) A **Manufacturers declaration** of its ability to comply with EU Directive 89/106/EEC and European Standard EN 40-5: 2002, and that the columns shall be CE Marked. The name, address and identification number of the **Notified Body** should also be stated.

### **305.10 Design verification and attestation of conformity:**

The structural design verification report for both the column and luminaires should be submitted prior to manufacture, as part of working drawings. This should include directions to follow, scope, clearly stated design parameters, calculations results and conclusions. The **EU Certificate of Conformity** and the **EC Declaration of Conformity** should be submitted prior to shipment of columns.

### **305.11 Column installation**

- a) The flange plates of columns type KF, fixed with S/S nuts and washers on the extended part of the anchor bolts above the concrete base, shall be sited on top of the concrete, flush to the finished level on the finished material at the point of installation.
  
- b) The flange plates of columns type KE, welded with S/S bolts on the steel structure of the pier, shall be sited on top of the wooden surface of the pier and be fixed with s/s nuts and washers.

### **306.0 Decorative Lighting Luminaire for Columns type KF & KE (Post-top)**

The luminaire shall be fixed on the top of the column and shall provide indirect symmetrical light distribution. The total height of the pole and the post top luminaire shall be about 4 - 4,5m. The luminaire to be about 0,5 up to 1,0m high.

**306.1** It shall consist of a galvanized steel or a die-cast aluminium grooved stepped conical body (or similar smooth conical) and 3 or 4 arms holding the diffuser.

The optical system to be contained inside the inverted cone of the luminaire.

**306.2** Fixed above the support arms there shall be the curved circular diffuser/reflector of polyester resin reinforced glass or other suitable and approved material.

**306.3** The bowl shall be of curved toughened glass and the reflector in polished and anodized aluminium. The degree of protection against Mechanical Impact to be IK 08. The diameter of bowl to be about  $\Phi 800\text{mm} - \Phi 1000\text{mm}$ .

**306.4** The control gear to be located in the pole in separate box.

**306.5** The degree of protection of the optical part shall be IP65 and class I.

**306.6** The luminaire to be suitable for 100W metal Halide lamps.

**307.0 Decorative Lighting Columns ПО (single & double)**

**307.1 Appearance**

An indication of the appearance required for the lighting columns type ПО (single) cut-off, ПО (single) flood-light (area lighting), and ПО (double) with one cut-off luminaire and one area light luminaire is shown on drawing No 5, 4 & 3 respectively.

The total height of the columns, irrespectively whether they are used as ПО (single) or ПО (double) are to be 6m high approximately for uniformity reasons.

The external appearance of both types of luminaires whether cut-off type or area lighting type shall be the same and shall consist of half cube body Triangle or half oval design fixed with fixing ring directly on the column.

The luminaire for column type ПО (single) cut-off shall be installed on the pole at a height of about 4,5m and the type ПО (single) area lighting luminaire at the top of the column at 6m approximately.

### **307.2 Column Design**

The lighting columns shall be of tubular design conical or cylindrical round shaft seamless type about 6,0m height made of cold-formed Galvanized steel electrically welded. The welding should be smoothed-out prior to galvanizing. The steel to be used in the manufacturing of the columns shall be of a suitable for the purpose grade. (The steel grades used and thickness must be stated as well as the bottom and top diameters).

The columns to be oven painted with polyester Electrostatic paint in RAL colour to the Architects choice.

### **307.3 Joints**

Any joints between the sections of the column i.e. shaft, flange, spigot shall be weatherproof, and suitably protected against corrosion.

### **307.4 Inspection door & Inside Services**

A weatherproof door of 450-500 X 90-100mm provided with a locking device (such as with two captive stainless steel BTR screws) shall be included in the base of the column. The bottom of the door shall be 500mm – 600mm above the flange plate. The door shall have a degree of protection of IP43 minimum.

A suitable earthing terminal and galvanized steel plate for the termination & glanding of cables and fixing of the fuse cut outs shall be provided inside the columns. The steel plate shall be welded on the column. The loop-in and loop-out method of supply cables is to be used.

The manufacturer's name and year of manufacture of the column must be indelibly marked on the inside of the door.

All columns & luminaires shall be supplied complete with all HRC fuses, boards, wiring, control gear, lamps, earthing facilities etc. separate H.R.C. fuse shall be used for the supply of each luminaire on columns type ПО (double).

### **307.5 Flange plate**

A pressed mild steel or hot – deep galvanized steel flange plate of 250mm X 250mm or 300mm X 300mm shall be welded to the base of the columns. This shall be suitable for 4Φ18mm, foundation bolts, spaced 200 X 200mm apart from each other. The design shall allow of leveling nuts and washers under and above the flange plate.

### **307.6 Height of columns:**

Total height of columns whether type ПО (single) or ПО (double) shall be about 6m.

**307.7 Foundation bolts: - THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**

The foundation bolts shall be stainless steel 18mm in “J” form. For each column 4No bolts shall be necessary, 450mm long connected together at the appropriate spacing, of 200mm so as to avoid displacement during preparation of the concrete block foundations.

The bolts shall be complete with stainless steel nuts & washers (3 nuts & 2 washers for each bolt).

**307.8 Characteristic Loads**

a) Ten minutes mean Wind Velocity (Vref): 24m/s, at a height of 10,0m above ground of terrain category II.

b) Statistical Coefficient (Cs):  $(0,92)^{1/2}$

c) Column & luminaire weight & windage area presented

All details for the weight of columns & luminaires as well as for the windage area presented for columns Type ΠΟ (single) & ΠΟ (double) to be extracted from the details of the manufacturer’s leaflets that offer the columns and luminaires by each Tenderer.

**307.9 Preliminaries (structural design calculations, manufacturers declaration and Notified Body):**

The following should be submitted with the tender:

a) **Structural design calculations** indicating that the columns and post top luminaires meet the specification requirements.

b) A **Manufacturers declaration** of its ability to comply with EU Directive 89/106/EEC and European Standard EN 40-5: 2002, and that the columns shall be CE Marked. The name, address and identification number of the **Notified Body** should also be stated.

**307.10 Design verification and attestation of conformity:**

The structural design verification report for both the column and luminaires should be submitted prior to manufacture, as part of working drawings. This should include directions to follow, scope, clearly stated design parameters, calculations results and conclusions. The **EU Certificate of Conformity** and the **EC Declaration of Conformity** should be submitted prior to shipment of columns.

**307.11 Column installation**

a) The flange plates of columns type ΠΟ, fixed with S/S nuts and washers on the extended part of the anchor bolts above the concrete

*base, shall be sited on top of the concrete, flush to the finished level on the finished material at the point of installation.*

**308.0 Decorative Lighting Luminaires for columns type ΠΟ (single) & ΠΟ (double)**

**General**

*The luminaires shall conform to the last published issue of EN60598 or to the last published issue of any other equivalent and approved internationally recognized standard and/or Code of Practice.*

*Copies of the proposed alternative standard or Code of Practice, in the English or Greek language, shall be supplied on request.*

**308.1 Luminaire type ΠΟ (single) – cut off**

*The luminaire shall be fixed at a height of 4,5m on the 6,0m high column and shall provide cut-off broad spread light distribution via a high quality cut-off reflector for the illumination of 2,5m wide cycling roadway. The columns are situated at a distance of 15,0m on the same side.*

**308.1.1** *The housing to consist of high quality aluminium alloy with high corrosion resistance and integral control gear.*

**308.1.2** *It must be provided with durable silicone rubber gasket and clear toughened glass with quick release hinge stainless steel suspension, for quick and in-position lamp replacement.*

**308.1.3** *The cut-off reflector to be made with anodized high purity aluminium reflector.*

**308.1.4** *The main housing to be powder painted with high corrosion resistance with chemical chromated protection.*

**308.1.5** *The luminaire to be fixed on the column with special split circular collar. All external fixings must be stainless steel.*

**308.1.6** *The luminaire to have a degree of protection IP 54 (minimum), class I and mechanical impact resistance IK 07.*

**308.1.7** *The luminaire to be provided with integral control gear suitable for 100W metal halide lamps.*

**308.1.8** *The dimensions of the horizontal illumination triangle of the luminaire to be about 800mm each side and the height of the half-cube housing above, about 700mm.*

*For oval shape luminaire the largest length to be about 700mm, small length about 400mm and height of half oval housing up to 300mm.*

*The small extension bracket of the luminaire to be about 50-70mm and be fixed at a height of 4,5m on the column using split ring and s/s crews or other similar and approved method.*

**308.2** **Luminaire type ПО (single) – flood area lighting**

*The luminaire shall be fixed at the top of the 6,0m high column and shall provide wide-broad spread light distribution via a high quality asymmetrical reflector, for the illumination of 15,0m wide car-parking area. The columns are situated at a distance of 2,0m away on the pavement from the 15,0m wide car-park and at a distance of 15,0m between each other on the same side of the car-park.*

**308.2.1** *The housing to consist of high quality aluminium alloy with high corrosion resistance and integral control gear.*

**308.2.2** *It must be provided with durable silicone rubber gasket and clear toughened glass with quick release hinge stainless steel suspension, for quick and in-position lamp replacement.*

**308.2.3** *The assymetrical reflector to be made with anodized high purity aluminium.*

**308.2.4** *The main housing to be powder painted with high corrosion resistance with chemical chromatized protection.*

**308.2.5** *The luminaire to be fixed on the top of the column either with special split circular collar or on a spigot top pole of  $\Phi 60$ mm approximately. All external fixings must be stainless steel.*

**308.2.6** *The luminaire to have a degree of protection IP 54 (minimum), class I and mechanical impact resistance IK 07.*

**308.2.7** *The luminaire to be provided with integral control gear suitable for 250W high Pressure sodium lamps.*

**308.2.8** *The dimensions of the horizontal illumination triangle of the luminaire to be about 800mm each side and the height of the half-cube housing above, about 700mm.*

*For oval shape luminaire the largest length to be about 700mm, small length about 400mm and height of half oval housing up to 300mm.*

*The small extension bracket of the luminaire to be about 50-70mm and be fixed at a height of 6,0m on the column.*

**309.0** **Decorative Lighting Columns Type KA**

**309.1** **Appearance**

*An indication of the appearance required for the lighting columns type KA is given in the attached Drg. Nos 7 with alternatives..*

*The configuration of the columns and their extension bracket & luminaire should be such as to provide area lighting to pedestrian walkways of the sea-side park.*

*The total height of the column to be 4,5m approximately.*

**309.2** **Column Design**

*The lighting columns shall be of tubular design conical or cylindrical round shaft seamless type about 4,5m height made of cold-formed Galvanized steel electrically welded. The welding should be smoothed-out prior to galvanizing. The steel to be used in the manufacturing of the columns shall be of a suitable for the purpose grade. (The steel grades used and thickness must be stated as well as the botton and top diameters).*

*The columns to be oven painted with polyester Electrostatic paint in RAL colour to the Architects choise.*

**309.3** **Joints**

*Any joints between the sections of the column i.e. shaft, flange, spigot shall be weatherproof, and suitably protected against corrosion.*

#### **309.4 Inspection door & Inside Services**

*A weatherproof door of 450-500 X 90-100mm provided with a locking device (such as with two captive stainless steel BTR screws) shall be included in the base of the column. The bottom of the door shall be 500mm – 600mm above the flange plate. The door shall have a degree of protection of IP43 minimum.*

*A suitable earthing terminal and galvanized steel plate for the termination & glanding of cables and fixing of the fuse cut outs shall be provided inside the columns. The steel plate shall be welded on the column. The loop-in and loop-out method of supply cables is to be used.*

*The manufacturer's name and year of manufacture of the column must be indelibly marked on the inside of the door.*

*All columns, brackets & luminaires shall be supplied complete with all HRC fuses, boards, wiring, control gear, lamps, earthing facilities etc.*

#### **309.5 Flange plate**

*A pressed mild steel or hot – deep galvanized steel flange plate of 250mm X 250mm or 300mm X 300mm shall be welded to the base of the columns. This shall be suitable for 4Φ18mm, foundation bolts, spaced 200 X 200mm apart from each other. The design shall allow of leveling nuts and washers under and above the flange plate.*

#### **309.6 Height of columns:**

*Total height of columns shall be about 4,5m.*

#### **309.7 Foundation bolts: - THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**

*The foundation bolts shall be stainless steel 18mm in “J” form. For each column 4No bolts shall be necessary, 450mm long connected together at the appropriate spacing, of 200mm so as to avoid displacement during preparation of the concrete block foundations.*

*The bolts shall be complete with stainless steel nuts & washers (3 nuts & 2 washers for each bolt).*

### 309.8 **Brackets on columns**

The detachable bracket shall be considered as an integral part of the column but it should be the standard design originating from the luminaire Manufacturer's catalogue.

The bracket to be single arm, slightly curved or horizontal and be made of extruded aluminium or steel section arm, integral with a moulded clamp flange fixed on the mast by stainless steel screws or permanently welded on the column and be provided with special wing fixtures.

A similar and approved by the Engineer method of fixing of bracket on the columns will be considered.

The outreach of bracket should be between 0,8 – 0,9m for detachable luminaires fixed on bracket with  $\Phi 60\text{mm}$  spigot and s/s screws.

The bracket to be suitable to accept a side entry horizontal luminaire of up to 60mm diameter entry and shall be provided with 40-60mm spigot.

### 309.9 **Characteristic Loads**

a) Ten minutes mean Wind Velocity (Vref): 24m/s, at a height of 10,0m above ground of terrain category II.

b) Statistical Coefficient (Cs):  $(0,92)^{\frac{1}{2}}$

c) Column & luminaire weight & windage area presented

All details for the weight of columns & luminaires as well as for the windage area presented for columns Type KA to be extracted from the details of the manufacturer's leaflets that offer the columns and luminaires by each Tenderer.

### 309.10 **Preliminaries (structural design calculations, manufacturers declaration and Notified Body):**

The following should be submitted with the tender:

a) **Structural design calculations** indicating that the columns and post top luminaires meet the specification requirements.

b) A **Manufacturers declaration** of its ability to comply with EU Directive 89/106/EEC and European Standard EN 40-5: 2002, and that the columns shall be CE Marked. The name, address and identification number of the **Notified Body** should also be stated.

**309.11 Design verification and attestation of conformity:**

*The structural design verification report for both the column and luminaires should be submitted prior to manufacture, as part of working drawings. This should include directions to follow, scope, clearly stated design parameters, calculations results and conclusions. The **EU Certificate of Conformity** and the **EC Declaration of Conformity** should be submitted prior to shipment of columns.*

**309.12 Column installation**

- a) *The flange plates of columns type KA, fixed with S/S nuts and washers on the extended part of the anchor bolts above the concrete base, shall be sited on top of the concrete, flush to the finished level on the finished material (may be wood) at the point of installation.*

**310.0 Decorative lighting luminaire with high-pressure sodium lamps for erection on column type KA**

**310.1 General**

*The luminaires shall conform to the last published issue of EN60598 or to the last published issue of any other equivalent and approved internationally recognized standard and/or Code of Practice.*

*Copies of the proposed alternative standard or Code of Practice, in the English or Greek language, shall be supplied on request.*

*The lanterns shall be complete with High Pressure Sodium lamps and with integral control gear.*

**310.2 Mounting**

*The luminaires shall be suitable for lighting column mounting for the illumination of wide walkways and shall be equipped with all necessary accessories for their installation on suitable extension bracket on the columns.*

*The means of attaching the lantern to its support shall be appropriate to its weight. In addition the connection shall be designed to withstand stresses due to wind at speeds of 125 Km/h without suffering undue permanent deflection or distortion, which may impair safety.*

*All fixings, which carry the weight of the lantern and internal accessories, shall be provided with suitable locking devices to prevent the dislodgement of any part of the lantern by vibration either in service or during maintenance.*

**310.3 Construction**

- a) *The luminaires (lanterns) shall have an oval-shaped (eagle nose shape) robust body of the closed type and to be made of corrosion resistance die cast aluminium and canopy painted with polyester powder coating. Colour (RAL) is subject to the choice of the Architect at no extra cost. The lamp and control gear compartments shall be separate from each other. A reliable self-latching mechanism shall secure the canopy in the open position. Moving parts giving access to the interior of the compartments shall be hinged and sit into position by a simple closing movement.*
- b) *The reflector shall be made of one piece high purity aluminium polished and anodized.*
- c) *The bowl shall be of flat or very shallow curved, clear tempered glass and material resistant to ultra violet light. When in the open position it shall be securely attached to the lantern so that there is no likelihood of it becoming accidentally detached or damaging any part of the lantern. Bowls shall not be drilled for the purpose of being secured into position by screws. It shall be possible for maintenance personnel to replace bowls without affecting the class of protection and the initial quality of construction of the luminaire.*
- d) *Gaskets shall be positively retained in their seating and should not work loose during maintenance of the lantern. Materials used for gasket should prevent the ingress of moisture and should not deteriorate unduly in use due to heat, light or compression to which they are subjected in practice. Felt gaskets should be tropicalized. Adhesives, if used, should be chemically compatible with the gasket material used. Gaskets should be easily replaceable, purpose designed and manufactured, standard components.*
- e) *The lampholder shall be made of ceramic material to BS5042 or equivalent, type E40.*

#### **310.4 Protection**

*Lanterns shall have a degree of protection against dust and moisture of IP65 minimum for the lamp compartment and IP54 for the control gear compartment. The protection against electric shock must be Class I or class II.*

**310.5 Wiring/Insulating Materials**

*All wiring and all parts of insulating material providing protection against electric shock or retaining live parts in position shall be sufficiently resistant to heat and moisture.*

*The wiring to be placed and be protected in such a way so that it may be impossible to be pulled, swifter or pressed under normal working conditions or during maintenance.*

**310.6 Control Gear**

*Control gear shall be supplied by plug and socket connection and be removable without tools.*

*The ballast and all other control gear shall be designed for 230V± 10% 50Hz supply and be pre-wired to the lamp socket and terminal board so that the only connection required will be the connection of the power supply leads to the terminal board.*

*The power factor shall not be lower than 0.95 lagging. Ignitors shall be of the digital type and shall prevent failed lamps from attempting to restart after a fixed number (about four) of unsuccessful attempts (**digital pulse control ignitors**).*

*Ballasts shall be of the self-resetting thermo switch (thermal cut-out) type.*

**310.6.1 Supply disconnection**

*Supply to the fitting shall be automatically disconnected when the canopy is open.*

**310.7 Lamp type, Wattage and data:**

*Clear tubular, high lumen output 100W high-pressure sodium lamps, without internal ignitor.*

*Compliance: EN 61167 or equivalent.*

*Lamp data shall be submitted as per relevant schedule.*

*This shall include lumen maintenance and lamp mortality curves.*

**310.8 Extension brackets and luminaires of Columns Type KA for lighting of Piers**

*The same type of extension brackets and luminaires of columns type KA shall be used for the illumination of the piers.*

*The extension brackets with the luminaires shall be properly fixed with split-ring arrangement or properly welded on the steel columns of the pier that emerge from the sea at a height of 3,5m-4,0m above the wooden walkway of the pier.*

*Electricity supply shall be provided through the steel columns as specified in the Electrical contract.*

**311.0 Lighting Columns Types ΚΓΛ, ΣΚ & ΚΘ**

**311.1 Appearance**

*An indication of the appearance required for the lighting columns type ΚΓΛ is given in the attached Drg. Nos 8 and that for columns type ΣΚ & ΚΘ on Drg. No 9.*

*The configuration of the columns, their mounting arms and spot-lights should be such as to provide flood light illumination of high sculptures, skate part and general theatre lighting.*

*The total height of the poles type ΚΓΛ with single pole mounting arm and one spot-light should be about 4,5m and that of poles type ΣΚ & ΚΘ with double pole mounting arm and two spot-lights should be about 6,0m.*

**311.2 Column Design**

*The lighting columns shall be of tubular design conical or cylindrical round shaft seamless type about 4,5m high (Type ΚΓΛ) and 6,0m high (Types ΣΚ & ΚΘ) made of cold-formed Galvanized steel electrically welded. The welding should be smoothed-out prior to galvanizing. The steel to be used in the manufacturing of the columns shall be of a suitable for the purpose grade. (The steel grades used and thickness must be stated as well as the bottom and top diameters).*

*The columns to be oven painted with polyester Electrostatic paint in RAL colour to the Architects choice.*

**311.3 Joints**

*Any joints between the sections of the column i.e. shaft, flange, spigot and mounting arms shall be weatherproof, and suitably protected against corrosion.*

**311.4 Inspection door & Inside Services (For all types ΚΓΛ, ΣΚ & ΚΘ)**

*A weatherproof door of 450-500 X 90-100mm provided with a locking device (such as with two captive stainless steel BTR screws) shall be included in the base of the column. The bottom of the door shall be 500mm – 600mm above the flange plate. The door shall have a degree of protection of IP43*

minimum.

A suitable earthing terminal and galvanized steel plate for the termination & glanding of cables and fixing of the fuse cut outs shall be provided inside the columns. The steel plate shall be welded on the column. The loop-in and loop-out method of supply cables is to be used.

The manufacturer's name and year of manufacture of the column must be indelibly marked on the inside of the door.

All columns, mounting arms and spot lights shall be supplied complete with all HRC fuses, boards, wiring, control gear, lamps, earthing facilities etc.

**311.5 Flange plate (For all types ΚΓΛ, ΣΚ & ΚΘ)**

A pressed mild steel or hot – deep galvanized steel flange plate of 250mm X 250mm or 300mm X 300mm shall be welded to the base of the columns. This shall be suitable for 4Φ18mm, foundation bolts, spaced 200 X 200mm apart from each other. The design shall allow of leveling nuts and washers under and above the flange plate.

**311.6 Height of columns:**

Total height of columns type ΚΓΛ shall be about 4,5m and of columns type ΣΚ & ΚΘ shall be about 6,0m.

**311.7 Foundation bolts:- THE BOLTS & NUTS WILL BE SUPPLIED BY OTHERS**

The foundation bolts for all types of columns shall be stainless steel Φ18mm in "J" form. For each column 4No bolts shall be necessary, 450mm long connected together at the appropriate spacing, of 200mm so as to avoid displacement during preparation of the concrete block foundations.

The bolts shall be complete with stainless steel nuts & washers (3 nuts & 2 washers for each bolt).

### **311.8 Characteristic Loads**

- a) *Ten minutes mean Wind Velocity (Vref): 24m/s, at a height of 10,0m above ground of terrain category II.*
- b) *Statistical Coefficient (Cs): (0,92)<sup>1/2</sup>*
- c) *Column & mounting arm & spot lights weight & windage area presented*  
*All details for the weight of columns, mounting arms and spot lights as well as for the windage area presented for columns to be extracted from the details of the manufacturer's leaflets that offer the columns and spot lights by each Tenderer.*

### **311.9 Preliminaries (structural design calculations, manufacturers declaration and Notified Body):**

*The following should be submitted with the tender:*

- a) **Structural design calculations** indicating that the columns and post top luminaires meet the specification requirements.
- b) A **Manufacturers declaration** of its ability to comply with EU Directive 89/106/EEC and European Standard EN 40-5: 2002, and that the columns shall be CE Marked. The name, address and identification number of the **Notified Body** should also be stated.

### **311.10 Design verification and attestation of conformity:**

*The structural design verification report for both the column and luminaires should be submitted prior to manufacture, as part of working drawings. This should include directions to follow, scope, clearly stated design parameters, calculations results and conclusions. The **EU Certificate of Conformity** and the **EC Declaration of Conformity** should be submitted prior to shipment of columns.*

### **311.11 Column installation**

- a) *The flange plates of columns type ΚΓΛ, ΣΚ & ΚΘ fixed with S/S nuts and washers on the extended part of the anchor bolts above the concrete base, shall be sited on top of the concrete, flush to the finished level on the finished material at the point of installation.*

### **311.12 Mounting arms on columns**

*The detachable mounting arms shall be considered as an integral part of the columns but it should be the standard design originating from the luminaire manufacturers catalogue.*

*The mounting arms shall be of two types. The single pole mounting arm, to be erected on columns type ΚΓΛ for installing one bracket and spot light and the double pole mounting arm to be erected on columns type ΣΚ & ΚΘ for installing two sets of brackets and spotlights, one on each side of the column.*

*The mounting arms to be made of special aluminium or steel and be fixed on the columns with special cylindrical adaptor and s/s screws at a height of about 0,5m from the top of the column.*

*A similar and approved by the Engineer method of fixing of the arms on the columns will be considered.*

*The outreach of the mounting arms shall be about 350mm from the pole on each side and be provided with special small mounting circular platform for the fixing of the bracket with the spotlight.*

*The mounting arms shall be suitable protected against corrosion similar the to anticorrosion protection of the columns.*

**312.0 Night spotlights with mounting brackets for columns type ΚΓΛ, ΣΚ & ΚΘ**

**312.1** *The night spotlights shall be provided with special aluminium or s/steel mounting bracket with tilt scale and tilt range of 120° minimum (up-down) of the spotlight, which shall be properly fixed with s/s screws at the edge of the mounting arm of the columns.*

**312.2** *The housing of the spot light shall be half oval shape, made of cast aluminium and incorporating rotationally symmetrical aluminium reflector for wide beam light distribution of about 60°.*

**312.3** *The spotlight to be provided with tempered safety glass, silicon gasket, closure with s/s screws and cable gland.*

**312.4** *The internal ballast and ignitor to be suitable for 150W metal halide lamps for columns type ΚΓΛ and 250W Metal Halide lamps for columns type ΣΚ & ΚΘ.*

**312.5** *The whole structure to be power coated to RAL colour of the owners choice and be suitably protected against corrosion similar to the anticorrosion protection of the columns.*

### **313.0 Protection against corrosion (For all types of Columns)**

*The lighting columns including their flange plates shall be hot-dip galvanized according to ISO 1459 and ISO 1461 or equivalent. The minimum local zinc coating thickness shall be 55 µm. In addition they shall be painted with external use, u.v. resistant polyester coating and special "anticorrosion coating" - seaside coating.*

*The anticorrosion coating process should include:*

- a) After galvanizing, a surface preparation by chemical treatment of the galvanization*
- b) A layer of wash primer (liquid paint)*
- c) A layer of epoxy coating*
- d) A layer of polyester coating*

*The total thickness of the "anticorrosion coating" should not be less than 130 microns.*

#### **Warranty**

*A 10 year anticorrosion guarantee certificate must be provided for the "anticorrosion coating" as follows:*

*7 + 3 years (3 liquid painting layers) for liquid coating*

*A full description of the guarantee for the painting and the anticorrosion process should be given.*

*Colour (RAL) is subject to the choice of the Architects at no extra cost.*

#### **IMPORTANT NOTE:**

*The anticorrosion coating process shall be used for all types of columns and their brackets and proof to this effect shall be presented by the Tenderers together with the 10 year anticorrosion guarantee.*

## **SECTION IV – SPECIFICATIONS FOR INGROUND LIGHTING FITTINGS**

### **401.0: INGROUND LIGHTING FITTINGS TYPE "FL"**

**401.1** *This lighting fitting shall be recessed in concrete ground to provide up-light for the illumination of trees, sculptures, walls, flag, poles etc. in parks and pedestrian areas.*

*The fitting must be able to take the load and impact from motor vehicles of up to 2,0 tones.*

- 401.2** *The lighting fitting to have cylindrical shape for its inground part, with separate installation housing suitable for installation inside concrete ground.*
- 401.3** *All parts of the fitting, the recessing box, the housing (frame) and the body to be constructed all in high grade **stainless steel**. (Recessing box may also be made of high density polyethylene). The closing ring must be made only in high grade stainless steel.*
- 401.4** *The recessing box to be cylindrical with maximum length of 350mm, and appropriate width to take in the fitting as described on paragraph 401.5.*
- 401.5** *The length of the cylindrical stainless steel housing must be minimum of 200mm and maximum of 300mm. The external diameter of the stainless steel closing ring to be minimum of 210mm and maximum 310mm, complete with s.s. fastening screws*
- 401.6** *The fitting to be supplied complete with its control gear and reflector assembly and 35W metal halide (HIT) lamp, the S.S. cover ring, durable silicone rubber gasket and clear toughened glass of adequate thickness to withstand 2 tones, W/P glanding and 1m long entry cable 3 X 2.5mm<sup>2</sup>.*
- 401.7** *The lamp position to be adjustable  $\pm 20\%$  and rotate 180° or more up to 360°.*  
*The emerging light beam to be able to vary about from 6° up to 60°. The actual beam spread to be decided by Architects before ordering. (An indication is that the narrow beam may be between 6°-10° and for wide beam 25°-30° or more.*
- 401.8** *The lighting fitting to be provided with extra facilities such as colour filter, anti-glare louver and heat filter touchable lens to reduce touchable temperature of the glass surface.*
- 401.9** *For each lighting fitting a suitable additional and separate junction–box shall be provided for connecting the supply cable of the fitting and for through supply cable passing under the inground fitting.*  
*The junction box to be made of hard drawn PVC IP68 and complete with 2No cable compression glands for cable 13,5-17,0mm passing through and one cable compression gland for 3-C, 2,5mm<sup>2</sup> cable, for connection the 1,0m long cable provided on the inground fitting.*
- 401.10** *The class of protection against ingress of dust and moisture shall be minimum IP67.*
- 401.11** *Protection against electric shock shall be class 1.*

**401.12** *The fitting to be suitable for pressure strength IK10 and Roll-over weight 2,0 tones.*

**401.13** *Compliance to BS.EN.60598 or equivalent and approved and CE certified.*

**402.0** **INGROUND LIGHTING FITTINGS TYPE “EA & EX”**

**402.1** *The lighting fitting type “EA” shall be semi-recessed in ground and shall have conical/cylindrical shape for its inground part, with separate installation housing to be suitable for installation inside concrete curbstones (or concrete ground with wooden finish on top of concrete).*

**402.2** *The lighting fitting type “EX” shall be similar in construction to type “EA” but shall have conical/cylindrical shape with separate installation sleeve/housing to be suitable for installation in the wood and its housing properly fixed on the steel structure under the wooden platform and piers.*

**402.3** *The body of the lighting fittings to be made of stainless steel or die cast aluminium power painted and treated fully against corrosion.*

*The length of the inground body to be as small as possible with ample space for glanding in the installation sleeve. The top part of the body to be as small as possible and maximum  $\Phi$  220mm.*

**402.4** *The closing dome, on top of the recessed body to be made with robust stainless steel or die cast aluminium and shall close on the body with stainless steel screws. Colouring by Architects.*

*The overall diameter of the closing dome to be as small as possible and maximum  $\Phi$  225mm. Its height above finished wooden pier floor or concrete curbstones shall be as small as possible and not more than 45mm.*

**402.5** *PVC sleeve with fiberglass – reinforced nylon locking ring to be provided.*

**402.6** *The closing dome to have 3 windows, (openings) at 0°, 90° & 180°.*

*The 3 lighting windows shall be made of clear tempered glass with high impact resistance.*

**402.7.** *The lighting fitting to be furnished complete with 35W M/H lamp distributing light equally from the 3 openings.*

*It shall be fully dry and the supply cable to be treated with resin to prevent condensation inside the lighting fitting.*

**402.8** *The internal reflector shall be made of pure anodized aluminium.*

**402.9** *Installation sleeve (Housing) to be provided, cylindrical with dimensions up to  $\Phi$  180mm for the recessed part and  $\Phi$ 220mm for the top part for installing and fixing the body of the fitting. The length of the installation sleeve to be appropriate with ample space for jointing and breathing of the fitting.*

**402.10** *The lighting fitting to be supplied complete and sealed for 230V, including its*

control gear, W/P glanding and 1m long bottom entry cable 3 X 2.5mm<sup>2</sup> PVC/PVC flexible cable. In case of fittings with 2 cable glands the one of them to be sealed.

- 402.11 The class of protection against ingress of dust and moisture shall be IP67 minimum and protection against electric shock shall be class I.
- 402.12 The lighting fitting to be suitable for pressure strength IK.9 and Roll-over weight of 2.000 Kg (minimum)
- 402.13 Compliance: BS.EN.60598 or Equivalent and approved.

**402.14 Description of W/P Junction Box**

For each lighting fitting a suitable additional and separate junction box shall be provided for connecting the PVC/PVC cable of the fitting and for the supply through cable passing under or near the inground fitting.

- 402.15 The junction box shall be made of stainless steel, IP.68 and complete with 2No. cable compression grands for the passing through cable of up to 2-C, 6.0mm<sup>2</sup> PVC/PVC + E and 1No. cable compression grand for 3-C, 2.5mm<sup>2</sup> PVC/PVC cable supplying the inground fitting "EX" (wood) and hard drawn Plastic IP.68 for fittings "EΔ" (concrete).

**SECTION V: SPECIFICATION FOR RECESSED LIGHTING FITTINGS AND FLOODLIGHTS**

**501.0 RECESSED IN WALL LIGHTING FITTING TYPE "EN"**

This is a lighting fitting recessed in vertical concrete walls and is intended to provide accent lighting for ramps and walkways.

- 501.1 The body of this location light luminaire as well as its front cover to be made with die-cast aluminium and shall be fully treated against corrosion.

- 501.2 It shall have a degree of protection of at least IP.65 and shall provide location downlight only without glare through a shield light source.

- 501.3 Energy saving lamps to be used TC-D, 26W, 230V.

- 501.4 The fitting to be fixed in housing to be recessed in concrete. The dimensions of the housing must be as small as possible and its preferred not to exceed 260 x 260 x 95mm (depth) for square fitting or 250 x 275 x 95mm for rectangular fitting.

The front cover of the luminaire to be made of die-cast aluminium and to be fixed

**501.5** *in the in-concrete housing box by s.s. screws. The dimensions of the front cover not to exceed 300 x 300mm for square fitting or 250 x 300mm for rectangular fitting.*

**501.6** *The luminaire to be provided with durable silicone gasket, clear tempered glass lens, diffuser and anodized high purity aluminium reflector for indirect down lighting.*

**501.7** *The fitting to be provided with double entry W/P glands for through cables up to 2-C, 6.0mm<sup>2</sup> PVC/PVC & E cables.*

**501.8** *Degree of Impact protection IK.09.*

#### **502.0 FLOOD-LIGHTS TYPE “SP” ON SEA-SIDE ROCKS**

*The Flood-lights are to be installed on special concrete bases to be constructed on the rocks towards the sea of the sea-side park in order to illuminate on special occasions all the sea-side rocky flont.*

*For this reason the flood light itself shall be of robust construction and fully protected against the sea waves as regards materials of construction and degree of protection,*

**502.1** *The body of the flood light to be made of stainless steel or cast bronze as well as the fixing bracket on the concrete base.*

**502.2** *All exposed fixing screws, nuts and washers shall be stainless steel. S/s fixing screws  $\Phi$ 10mm and 250mm long to be provided with s/s nuts & washers for fixing the bracket on the concrete base.*

**502.3** *The external housing body to be of cylindrical shape  $\Phi$ 200- $\Phi$ 300mm, length between 150-250mm and or rectangular or square shape of similar dimensions, fixed with s/s rotating screws on its bracket and thus be able to rotate vertically at least 15° from C/L downwards and up to 90° upwards.*

**502.4** *The total height of the flood light and its bracket to be from 250-400mm.*

- 502.5** *The flood light to be provided with s/s or cast bronze locking ring fixed with s/s screws and clear flat tempered glass cover and in addition to be protected with special anti-vandalism protection grid of bronze or s/steel.*
- 502.6** *To be provided with internal control gear for 35W M/H special lamp & reflector for wide light distribution.*
- 502.7** *The flood light to be fully dry, IP 68 and have mechanical protection IK 10 (58 Joules).*
- 502.8** *To be provided with 3m long special 2-C, 6.0mm<sup>2</sup> cable (HQ7RNF) sealed on the floodlight with special ceiling gland IP 68 and with connector boxes IP 68 s/s T-type for 17mm/11mm or straight through up to  $\Phi$  17mm for end flood lights for connecting the floodlights on the supplying cables.*

## **SECTION VI: APPENDICES**

### **APPENDIX No 1**

*The following drawings and sketches are issued with the tender:*

1. Drg. No.1: *Decorative Lighting column, bracket and luminaire set Type "ΚΛ" (single).*  
                   Alternative 1  
                   Alternative 2  
                   Alternative 3
2. Drg. No.1: *Decorative Lighting column, with double arm bracket and two luminaires Type "ΚΛ" (double)*  
                   Alternative 1  
                   Alternative 2  
                   Alternative 3
3. Drg. No. 3 *Decorative Lighting column, with one bracket & cut-off light luminaire and one bracket & flood light area luminaire Type "ΠΟ"(double)*
4. Drg. No. 4 *Decorative Lighting column, with bracket & flood light area luminaire Type "ΠΟ"(single)*
5. Drg. No. 5 *Decorative Lighting column, with bracket & cut-off lighting luminaire Type "ΠΟ"(single)*
6. Drg. No. 6 *Decorative Lighting column, with post-top luminaire Type "ΚΓ & ΚΕ".*
7. Drg. No. 7 *Decorative Lighting column with extension bracket and luminaire*

set Type "KA" (single).

Alternative 1

Alternative 2

8. Drg. No.8 Lighting column with extension bracket and one spot light type "ΚΓΛ"
9. Drg. No.9 Lighting column with extension bracket and two spot lights type "ΣΚ & ΚΘ"
10. Drg. No. 10 Extract from electrical Drawings for the illumination design Data Case 1 of the main walkway.
11. Drg. No. 11 Extract from electrical Drawings for the illumination design Data Case 2 of the car-park areas.

### **1.3. ΑΠΑΙΤΗΣΕΙΣ ΕΚΘΕΣΕΩΝ**

Ο Ανάδοχος θα πρέπει να υποβάλει στην Αναθέτουσα Αρχή της παρακάτω Εκθέσεις σχετικά με την εκτέλεση των δραστηριοτήτων του Αντικειμένου της Σύμβασης και τα αποτελέσματα που επιτεύχθηκαν:

- Έκθεση έναρξης εντός <2 εβδομάδων> από την υπογραφή της Σύμβασης.
- Έκθεση ολοκλήρωσης – στο τέλος της περιόδου υλοποίησης της Σύμβασης.

Η Έκθεση έναρξης θα πρέπει να περιλαμβάνει:

- τα συμπεράσματα των αρχικών συζητήσεων με την Αναθέτουσα Αρχή και τις πρώτες διαπιστώσεις του Αναδόχου σχετικά με τις συνθήκες του Αντικειμένου της Σύμβασης όπως έχουν διαμορφωθεί κατά την έναρξη του τα κύρια θέματα που εντοπίστηκαν
- τις άμεσες ενέργειες που προτείνονται και τις προτεραιότητες που τίθενται
- το επικαιροποιημένο χρονοδιάγραμμα των παραδόσεων, εγκαταστάσεων και λοιπών τυχόν απαιτούμενων δραστηριοτήτων του Αντικειμένου της Σύμβασης, με σημειωμένα τα κρίσιμα σημεία.

Η Έκθεση ολοκλήρωσης θα πρέπει να περιλαμβάνει:

- καταγραφή όλων των παραδόσεων, εγκαταστάσεων και λοιπών τυχόν απαιτούμενων δραστηριοτήτων που υλοποιήθηκαν και των παραδοτέων που τυχόν εκπονήθηκαν
- εκτίμηση των αποτελεσμάτων που επιτεύχθηκαν
- προτάσεις για μελλοντικές ανάγκες της Αναθέτουσας Αρχής με το αντικείμενο της σύμβασης που υλοποιήθηκε.

Έκτακτες υποβάλλονται σε <3> αντίγραφα στην Αναθέτουσα Αρχή υπόψη του Υπεύθυνου Συντονιστή. Ο Υπεύθυνος Συντονιστής είναι αρμόδιος για την υποβολή των Εκθέσεων στην αρμόδια Επιτροπή Παραλαβής.

## **2. ΥΠΟΣΤΗΡΙΚΤΙΚΑ ΜΕΣΑ ΠΟΥ ΠΑΡΕΧΟΝΤΑΙ ΑΠΟ ΤΗΝ ΑΝΑΘΕΤΟΥΣΑ ΑΡΧΗ**

**ΔΕΝ ΕΦΑΡΜΟΖΕΤΑΙ**

## **3. ΠΑΡΑΔΟΣΗ – ΠΑΡΑΛΑΒΗ ΤΟΥ ΑΝΤΙΚΕΙΜΕΝΟΥ ΤΗΣ ΣΥΜΒΑΣΗΣ**

### **3.1 Τόπος παράδοσης και Εγκατάστασης**

Ο τόπος παράδοσης και εγκατάστασης θα είναι το Πολυλειτουργικό Παραθαλάσσιο Πάρκο στον Μύλο Λεμεσού.

Η παραλαβή θα γίνεται από την Συντονιστική Ομάδα του Δήμου Λεμεσού και των Μελετητών που είναι υπεύθυνη για το Έργο Ανάπλασης του κέντρου της πόλης Λεμεσού - Πολυλειτουργικό Παραθαλάσσιο Πάρκο.

Ο Ανάδοχος να ειδοποιεί γραπτώς, ενημερώνει τηλεφωνικώς και να συντονίζεται μαζί του Υπεύθυνου της Συντονιστικής Ομάδας για την διαδικασία, τον τόπο και χρόνο παράδοσης και εγκατάστασης του Αστικού Εξοπλισμού για το Έργο Ανάπλασης του κέντρου πόλης Λεμεσού Πολυλειτουργικό Παραθαλάσσιο Πάρκο.

Ο Ανάδοχος να φροντίζει όπως η τυχόν διευθέτηση συναντήσεων με την Συντονιστική Ομάδα του έργου που είναι υπεύθυνη για το Έργο Ανάπλασης του Πολυλειτουργικού Παραθαλάσσιου Πάρκου να γίνεται στα πλαίσια του ωραρίου λειτουργίας του Δήμου Λεμεσού.

### **3.2 Χρονοδιάγραμμα παράδοσης**

Το 1/3 (ένα- τρίτο) του ολικού αριθμού των κολόνων και των φωτιστικών όλων των τύπων, να παραδοθεί εντός τριών μηνών από την ημερομηνία αποδοχής της επιστολής ανάθεσης και κατακύρωσης της προσφοράς για την προμήθεια κολόνων και Φωτιστικών.

Τα υπόλοιπα (2/3) θα παραδίδονται σύμφωνα με το πρόγραμμα εργασιών των κύριων Εργολάβων του έργου και τουλάχιστο 1 (ένα) μήνα πριν την ημερομηνία εγκατάστασής τους.

Το έργο θα παραδοθεί σε διάστημα 24 μηνών από την ημερομηνία έναρξης των δομικών εργασιών. Ημερομηνία έναρξης του συμβολαίου δομικών εργασιών Δεκέμβριος 2010.

### **3.3 Έλεγχος και παραλαβή παραδοτέων**

Ο έλεγχος και η οριστική παραλαβή των προϊόντων θα γίνεται μόνο με μακροσκοπική εξέτασή τους από την αρμόδια Επιτροπή Παραλαβής, κατά την οποία ο Ανάδοχος θα κληθεί να παρίσταται, εφόσον το επιθυμεί.

#### **4. ΑΠΑΙΤΗΣΕΙΣ ΣΕ ΠΡΟΣΩΠΙΚΟ**

Σύμφωνα με την παράγραφο 6.2.2 του «Μέρους Α: Οδηγίες προς τους Οικονομικούς φορείς», ο Ανάδοχος θα πρέπει να έχει στην υπηρεσία του, εκτός από προσωπικό ικανό στην διαχείριση και παράδοση των προϊόντων που προσφέρει και Τεχνικό Προσωπικό ικανό και με γνώσεις και εμπειρία στην συναρμολόγηση κολόνων και φωτιστικών και στον τρόπο λειτουργίας τους.

##### **4.1 Υπεύθυνος Αναδόχου**

ΔΕΝ ΕΦΑΡΜΟΖΕΤΑΙ

##### **4.2 Λοιπά στελέχη της Ομάδας Έργου του Αναδόχου**

Δύο άτομα τουλάχιστον της ομάδας του Αναδόχου θα πρέπει να είναι απόφοιτοι Τεχνικής Σχολής στην Ηλεκτρολογία (ΑΤΙ, ΑΕΙ κλπ.) ή ισοδύναμη της χώρας εγκατάστασής τους και να είναι ικανοί να δίδουν τις αναγκαίες Τεχνικές Οδηγίες, να ελέγχουν την ορθότητα της διαδικασίας συναρμολόγησης, συρμάτωσης, εγκατάστασης και λειτουργίας των κολόνων και φωτιστικών και να έχουν τουλάχιστο 5ετή πείρα στο τομέα αυτό.

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ  
ΠΡΟΔΙΑΓΡΑΦΕΣ**

**1. Ζητούμενο προϊόν (1):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου ΚΛ (μονό) για την Ανάπλαση του κέντρου της

Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 1 του παραρτήματος II και section III items 303, 304 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (2):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου ΚΛ (διπλό) για την Ανάπλαση του κέντρου της

Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

Α/Α	Χαρακτηριστικά – Προδιαγραφές	Απαίτηση	Απάντηση – Προσφορά	Παραπομπή
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. Α/Α 2 του παραρτήματος II και section III items 303, 304 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (3):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου ΠΟ (μονό – cut off) για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 3 του παραρτήματος II και section III items 307, 308 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (4):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου ΠΟ (μονό – flood light) για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 4 του παραρτήματος II και section III items 307, 308 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (5):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου ΠΟ (διπλό) για την Ανάπλαση του

κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 5 του παραρτήματος II και section III items 307, 308 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (6):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου “ΚΓ” & “ΚΕ” post - top για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 6 & A/A9 του παραρτήματος II και section III items 305, 306 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (7):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου “ΚΓΛ” για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 8 του παραρτήματος II και section III items 311, 312 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ  
ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)**

**1. Ζητούμενο προϊόν (8):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου "ΣΚ" & "ΚΘ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων  (Σύμφωνα με την παράγραφο 1.1. A/A 7 του παραρτήματος II και section III items 311, 312 της παραγράφου 1.2 του παραρτήματος II)	ΝΑΙ		
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (9):** Διακοσμητικά Σύνολα κολόνων και Φωτιστικών Τύπου "ΚΑ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 10 του παραρτήματος II και section III items 309, 310 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (10):** Διακοσμητικά Πρακέττα & Φωτιστικά του Τύπου "ΚΑ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

A/A	Χαρακτηριστικά – Προδιαγραφές	Απαίτηση	Απάντηση – Προσφορά	Παραπομπή
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 11 του παραρτήματος II και section III items 309, 310 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ  
ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)**

**1. Ζητούμενο προϊόν (11):** Ενδοδαπέδια Φωτιστικά Τύπου "ΕΔ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. A/A 12 του παραρτήματος II και section IV item 402 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (12):** Ενδοδαπέδια Φωτιστικά Τύπου "ΓΛ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

A/A	Χαρακτηριστικά – Προδιαγραφές	Απαίτηση	Απάντηση – Προσφορά	Παραπομπή
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. Α/Α 13 του παραρτήματος II και section IV item 401 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ  
ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)**

**1. Ζητούμενο προϊόν (13):** Ενδοδαπέδια Φωτιστικά Τύπου "ΕΧ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. Α/Α 14 του παραρτήματος II και section IV item 402 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)

**1. Ζητούμενο προϊόν (14):** Εντοιχισμένα Φωτιστικά Τύπου "ΕΝ" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

A/A	Χαρακτηριστικά – Προδιαγραφές	Απαίτηση	Απάντηση – Προσφορά	Παραπομπή
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων	ΝΑΙ		
	(Σύμφωνα με την παράγραφο 1.1. Α/Α 15 του παραρτήματος II και section V item 501 της παραγράφου 1.2 του παραρτήματος II)			
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ  
ΠΡΟΔΙΑΓΡΑΦΕΣ (συνέχεια)**

**1. Ζητούμενο προϊόν (15):** Επιδαπέδιοι Φωτιστικοί προβολείς Τύπου "SP" για την Ανάπλαση του κέντρου της Πόλης Λεμεσού (Πολυλειτουργικό Παραθαλάσσιο Πάρκο).

<b>A/A</b>	<b>Χαρακτηριστικά – Προδιαγραφές</b>	<b>Απαίτηση</b>	<b>Απάντηση – Προσφορά</b>	<b>Παραπομπή</b>
<b>1.</b>	<b><u>ΓΕΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
1.1.	Αριθμός μονάδων  (Σύμφωνα με την παράγραφο 1.1. A/A 16 του παραρτήματος II και section V item 502 της παραγράφου 1.2 του παραρτήματος II)	ΝΑΙ		
<b>2.</b>	<b><u>ΕΙΔΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ</u></b>			
2.1.	Χρήση τυποποιημένων καταλόγων	ΝΑΙ		
2.2.	Σειρά/συλλογή αστικού εξοπλισμού	ΝΑΙ		
2.3.	Ομοιόμορφα υλικά, βάψιμο και προστασία.	ΝΑΙ		

## ΕΝΤΥΠΟ 8

### ΜΕΡΟΣ Α': ΠΙΝΑΚΑΣ ΠΡΟΣΦΟΡΑΣ ΚΑΙ ΣΥΜΜΟΡΦΩΣΗΣ ΜΕ ΤΙΣ ΤΕΧΝΙΚΕΣ ΠΡΟΔΙΑΓΡΑΦΕΣ (Συνέχεια)

#### ΣΗΜΕΙΩΣΕΙΣ:

1. Είναι υποχρεωτική η απάντηση σε όλα τα σημεία του Πίνακα. Σε περίπτωση που δεν έχει απαντηθεί οποιοδήποτε σημείο, θεωρείται αρνητική.
2. Στη στήλη «ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ – ΠΡΟΔΙΟΑΓΡΑΦΕΣ» ή «ΑΠΑΙΤΗΣΕΙΣ – ΠΡΟΔΙΑΓΡΑΦΕΣ», περιγράφονται αναλυτικά οι αντίστοιχοι τεχνικοί όροι, υποχρεώσεις ή επεξηγήσεις για τα οποία θα πρέπει να δοθούν αντίστοιχες απαντήσεις.
3. Αν στη στήλη «ΑΠΑΙΤΗΣΗ» έχει συμπληρωθεί η λέξη «ΝΑΙ», που σημαίνει ότι η αντίστοιχη προδιαγραφή είναι υποχρεωτική για το υποψήφιο Ανάδοχο ή ένας αριθμός που σημαίνει υποχρεωτικό αριθμητικό μέγεθος της προδιαγραφής και απαιτεί συμμόρφωση, θεωρούνται ως απαράβατοι όροι και οι Προσφορές που δεν καλύπτουν τέτοιες απαιτήσεις απορρίπτονται ως απαράδεκτες.
4. Στη στήλη «ΑΠΑΝΤΗΣΗ» σημειώνεται η απάντηση του Προσφέροντα που είτε είναι το συγκεκριμένο προϊόν που προσφέρει είτε έχει τη μορφή ΝΑΙ/ΟΧΙ εάν η αντίστοιχη προδιαγραφή πληρούται ή όχι από την Προσφορά ή ένα αριθμητικό μέγεθος που δηλώνει την ποσότητα του αντίστοιχου χαρακτηριστικού στην προσφορά.
5. Στη στήλη «ΠΑΡΑΠΟΜΠΗ» θα καταγραφεί η σαφής παραπομπή σε Παράρτημα της Τεχνικής Προσφοράς το οποίο θα περιλαμβάνει αριθμημένα Τεχνικά Φυλλάδια κατασκευαστών, ή αναλυτικές τεχνικές περιγραφές των προσφερομένων προϊόντων, που κατά την κρίση του προσφέροντα τεκμηριώνουν τα δηλούμενα στον Πίνακα Στοιχεία. Οι παραπομπές πρέπει να είναι συγκεκριμένες (π.χ. Τεχνικό Φυλλάδιο 3, Σελ. 4 Παράγραφος 4, κλπ.) ενώ αντίστοιχα στο τεχνικό φυλλάδιο ή την αναφορά θα υπογραμμίζεται το σημείο τεκμηρίωσης και θα σημειώνεται η αντίστοιχη παράγραφος του Πίνακα στην οποία καταγράφεται το ζητούμενο χαρακτηριστικό.

Υπογραφή Προσφέροντος ή

Εξουσιοδοτημένου Αντιπροσώπου και Σφραγίδα  
Εταιρείας:.....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': ΤΕΧΝΙΚΑ ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ ΤΩΝ ΠΡΟΣΦΕΡΟΜΕΝΩΝ ΥΛΙΚΩΝ**

**SECTION I: ΔΙΑΚΟΣΗΜΙΤΙΚΕΣ ΚΟΛΟΝΕΣ ΦΩΤΙΣΜΟΥ ΟΛΩΝ ΤΩΝ ΤΥΠΩΝ**

<b>LIGHTING COLUMN TYPE:</b> <b>(As per Drg. Nos 1 &amp; 2)</b>	<b>ΚΛ</b> <b>(single)</b>	<b>ΚΛ</b> <b>(double)</b>
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft/arm)</i></p> <p>8. <i>Bracket outreach:</i></p> <p>    a) <i>Length</i></p> <p>    b) <i>Material</i></p> <p>9. <i>Bracket tilt angle (<u>Consult luminaire manufacturer for design altitude</u>):</i></p> <p>10. <i>Lantern connection dimensions (spigot diameter/penetration):</i></p>		

**ΕΝΤΥΠΟ 8**

ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)

<b>LIGHTING COLUMN TYPE:</b>	<b>ΚΑ (single)</b>	<b>ΚΑ (double)</b>
11. <i>Inspection door:</i>		
a) <i>Locking device:</i>	YES/NO	YES/NO
b) <i>Opening dimensions:</i>		
c) <i>Height above flange plate:</i>		
d) <i>Weatherproof door</i>	YES/NO	YES/NO
e) <i>Protection (IP)</i>		
12. <i>Flange plate:</i>		
a) <i>Dimensions</i>		
b) <i>Spacing of Foundation bolts holes</i>		
c) <i>Material</i>		
13. <i>Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></i>		
a) <i>Number</i>		
b) <i>Size</i>		
c) <i>Material</i>		
14. <i>Height:</i>		
a) <i>Shaft:</i>		
b) <i>Arm.:</i>		

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE:</b>	<b>ΚΑ (single)</b>	<b>ΚΑ (double)</b>
15. <i>Weight:</i>		
a) <i>Shaft:</i>		
b) <i>Arm:</i>		
16. <i>Compliance of hot dip galvanizing:</i>		
16.1. <i>Zinc coating (minimum)</i>		
a) <i>Weight (g/m<sup>2</sup>)</i>		
b) <i>Thickness on one side (im)</i>		
c) <i>Special anticorrosion Coating</i>	YES/NO	YES/NO
17. <i>Load conditions:</i>		
a) <i>Wind velocity/vector:</i>		
b) <i>Door vector</i>		
c) <i>Lantern weight/windage area:</i>		
d) <i>Shaft weight:</i>		
e) <i>Bracket weight/outreach:</i>		
18. <i>Weatherproof joints:</i>	YES/NO	YES/NO
19. <i>Earthing terminal inside column:</i>	YES/NO	YES/NO

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE:</b>	<b>ΚΑ (single)</b>	<b>ΚΑ (double)</b>
20. <i>Welded fuse cut out and gland plate inside column</i>	YES/NO	YES/NO
21. <i>Top/bottom diameters</i>		
22. <i>Recommended concrete foundation dimensions:</i>		
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO	YES/NO
24. <i>Characteristics loads</i>		
a) <i>Vref</i>	YES/NO	YES/NO
b) <i>Cs</i>		
c) <i>Ce(12)</i>		
d) <i>Terrain Category</i>	YES/NO	YES/NO
e) <i>yf</i>		
f) <i>Door vector</i>		
g) <i>Lantern weight</i>		
h) <i>Lantern windage area</i>		
i) <i>Shaft weight</i>		
j) <i>Bracket weight</i>		
k) <i>Bracket outreach</i>		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE:</b>	<b>ΚΛ (single)</b>	<b>ΚΛ (double)</b>
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO	YES/NO
26. <i>Special anticorrosion coating</i>	YES/NO	YES/NO
27. <i>Other</i>		
a)		
b)		
c)		
28. <i>Remarks</i>		
a)		
b)		
c)		

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
Και Σφραγίδα Εταιρείας: .....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – cut off) (As per Drg. No 5)</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft)</i></p> <p>8. <i>Diameter of bottom part of shaft</i></p> <p>9. <i>Diameter of top part of shaft</i></p> <p>10. <i>Control Gear &amp; Housing</i></p>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I** (Συνέχεια)

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – cut off)</b> <b>(As per Drg. No 5)</b>	
<p>11. <i>Inspection door:</i></p> <ul style="list-style-type: none"><li>a) <i>Locking device:</i></li><li>b) <i>Opening dimensions:</i></li><li>c) <i>Height above flange plate:</i></li><li>d) <b>Weatherproof door</b></li><li>e) <i>Protection (IP)</i></li></ul> <p>12. <i>Flange plate:</i></p> <ul style="list-style-type: none"><li>a) <i>Dimensions</i></li><li>b) <i>Spacing of Foundation bolts holes</i></li><li>c) <i>Material</i></li></ul> <p>13. <i>Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></i></p> <ul style="list-style-type: none"><li>a) <i>Number</i></li><li>b) <i>Size</i></li><li>c) <i>Material</i></li></ul> <p>14. <i>Height of erection of luminaire</i></p> <p>15. <i>Height of erection of Reflector</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – cut off) (As per Drg. No 5)</b>	
<p>16. <i>Compliance of hot dip galvanizing of column:</i></p> <p>17. <i>Zinc coating (minimum)</i></p> <p>a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>b) <i>Thickness on one side (ίm)</i></p> <p>c) <i>Special anticorrosion coating</i></p> <p>18. <i>Load conditions:</i></p> <p>a) <i>Wind velocity/vector:</i></p> <p>b) <i>Door vector</i></p> <p>c) <i>Luminaire complete/windage area:</i></p> <p>d) <i>Shaft windage area:</i></p> <p>19. <i>Weatherproof joints:</i></p> <p>20. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – cut off)</b> <b>(As per Drg. No 5)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i> <i>a) Luminaire total weight</i> <i>b) Reflector weight</i> <i>c) Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i> <i>a)</i> <i>b)</i> <i>c)</i>	
27. <i>Remarks</i> <i>a)</i> <i>b)</i> <i>c)</i>	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
Και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – area lighting) (As per Drg. No 4)</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft)</i></p> <p>8. <i>Diameter of bottom part of shaft</i></p> <p>9. <i>Diameter of top part of shaft</i></p> <p>10. <i>Control Gear &amp; Housing</i></p>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I** (Συνέχεια)

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – area lighting)</b> <b>(As per Drg. No 4)</b>	
<p>11. <i>Inspection door:</i></p> <p>a) <i>Locking device:</i></p> <p>b) <i>Opening dimensions:</i></p> <p>c) <i>Height above flange plate:</i></p> <p>d) <i>Weatherproof door</i></p> <p>e) <i>Protection (IP)</i></p> <p>12. <i>Flange plate:</i></p> <p>a) <i>Dimensions</i></p> <p>b) <i>Spacing of Foundation bolts holes</i></p> <p>c) <i>Material</i></p> <p>13. <i>Foundation bolts - <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></i></p> <p>a) <i>Number</i></p> <p>b) <i>Size</i></p> <p>c) <i>Material</i></p> <p>14. <i>Height of erection of luminaire</i></p> <p>15. <i>Height of erection of Reflector</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – area lighting) (As per Drg. No 4)</b>	
<p>16. <i>Compliance of hot dip galvanizing of column:</i></p> <p>17. <i>Zinc coating (minimum)</i></p> <p>    a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>    b) <i>Thickness on one side (ίm)</i></p> <p>    c) <i>Special anticorrosion coating</i></p> <p>18. <i>Load conditions:</i></p> <p>    a) <i>Wind velocity/vector:</i></p> <p>    b) <i>Door vector</i></p> <p>    c) <i>Luminaire complete/windage area:</i></p> <p>    d) <i>Shaft windage area:</i></p> <p>19. <i>Weatherproof joints:</i></p> <p>20. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (single – area lighting) (As per Drg. No 4)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Luminaire total weight</i>	
b) <i>Reflector weight</i>	
c) <i>Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i>	
a)	
b)	
c)	
27. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (double) (As per Drg. No 3)</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft)</i></p> <p>8. <i>Diameter of bottom part of shaft</i></p> <p>9. <i>Diameter of top part of shaft</i></p> <p>10. <i>Control Gear &amp; Housing</i></p>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<p><b>LIGHTING COLUMN FOR TYPE ΠΟ (double)</b> <b>(As per Drg. No 3)</b></p>	
<p>11. <i>Inspection door:</i></p> <p>a) <i>Locking device:</i></p> <p>b) <i>Opening dimensions:</i></p> <p>c) <i>Height above flange plate:</i></p> <p>d) <b>Weatherproof door</b></p> <p>e) <i>Protection (IP)</i></p> <p>12. <i>Flange plate:</i></p> <p>a) <i>Dimensions</i></p> <p>b) <i>Spacing of Foundation bolts holes</i></p> <p>c) <i>Material</i></p> <p>13. <i>Foundation bolts-</i> <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></p> <p>a) <i>Number</i></p> <p>b) <i>Size</i></p> <p>c) <i>Material</i></p> <p>14. <i>Height of erection of luminaires</i></p> <p>15. <i>Height of erection of Reflectors</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (double) (As per Drg. No 3)</b>	
16. <i>Compliance of hot dip galvanizing of column:</i>	
17. <i>Zinc coating (minimum)</i>	
a) <i>Weight (g/m<sup>2</sup>)</i>	
b) <i>Thickness on one side (ίm)</i>	
c) <i>Special anticorrosion coating</i>	YES/NO
18. <i>Load conditions:</i>	
a) <i>Wind velocity/vector:</i>	
b) <i>Door vector</i>	
c) <i>Luminaire complete/windage area:</i>	
d) <i>Shaft windage area:</i>	
19. <i>Weatherproof joints:</i>	YES/NO
20. <i>Earthing terminal inside column:</i>	YES/NO

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE ΠΟ (double) (As per Drg. No 3)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Luminaire total weight</i>	
b) <i>Reflector weight</i>	
c) <i>Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i>	
a)	
b)	
c)	
27. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΛΓ" (As per Drg. No 8)</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft)</i></p> <p>8. <i>Diameter of bottom part of shaft</i></p> <p>9. <i>Diameter of top part of shaft</i></p> <p>10. <i>Control Gear &amp; Housing</i></p>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΛΓ" (As per Drg. No 8)</b>	
<p>11. <i>Inspection door:</i></p> <ul style="list-style-type: none"><li>a) <i>Locking device:</i></li><li>b) <i>Opening dimensions:</i></li><li>c) <i>Height above flange plate:</i></li><li>d) <b>Weatherproof door</b></li><li>e) <i>Protection (IP)</i></li></ul> <p>12. <i>Flange plate:</i></p> <ul style="list-style-type: none"><li>a) <i>Dimensions</i></li><li>b) <i>Spacing of Foundation bolts holes</i></li><li>c) <i>Material</i></li></ul> <p>13. <i>Foundation bolts-</i> <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></p> <ul style="list-style-type: none"><li>a) <i>Number</i></li><li>b) <i>Size</i></li><li>c) <i>Material</i></li></ul> <p>14. <i>Height of erection of spotlights</i></p> <p>15. <i>Height of erection of Reflector</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΛΓ" (As per Drg. No 8)</b>	
<p>16. <i>Compliance of hot dip galvanizing of column:</i></p> <p>17. <i>Zinc coating (minimum)</i></p> <p>    a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>    b) <i>Thickness on one side (ίm)</i></p> <p>    c) <i>Special anticorrosion coating</i></p> <p>18. <i>Load conditions:</i></p> <p>    a) <i>Wind velocity/vector:</i></p> <p>    b) <i>Door vector</i></p> <p>    c) <i>Spotlight complete/windage area:</i></p> <p>    d) <i>Shaft windage area:</i></p> <p>19. <i>Weatherproof joints:</i></p> <p>20. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΛΓ" (As per Drg. No 8)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Spotlight total weight</i>	
b) <i>Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i>	
a)	
b)	
c)	
27. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή

Εξουσιοδοτημένου Αντιπροσώπου

Και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΣΚ &amp; ΚΘ" (As per Drg. No 9)</b>	
<ol style="list-style-type: none"><li>1. <i>Make:</i></li><li>2. <i>Type/Catalogue No.:</i></li><li>3. <i>Country of:</i><ol style="list-style-type: none"><li>a) <i>Origin</i></li><li>b) <i>Manufacture</i></li></ol></li><li>4. <i>Compliance:</i></li><li>5. <i>Shape:</i></li><li>6. <i>Steel thickness (shaft/arm):</i></li><li>7. <i>Steel grade (shaft)</i></li><li>8. <i>Diameter of bottom part of shaft</i></li><li>9. <i>Diameter of top part of shaft</i></li><li>10. <i>Control Gear &amp; Housing</i></li></ol>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΣΚ &amp; ΚΘ" (As per Drg. No 9)</b>	
<p>11. <i>Inspection door:</i></p> <p>a) <i>Locking device:</i></p> <p>b) <i>Opening dimensions:</i></p> <p>c) <i>Height above flange plate:</i></p> <p>d) <b>Weatherproof door</b></p> <p>e) <i>Protection (IP)</i></p> <p>12. <i>Flange plate:</i></p> <p>a) <i>Dimensions</i></p> <p>b) <i>Spacing of Foundation bolts holes</i></p> <p>c) <i>Material</i></p> <p>13. <i>Foundation bolts-</i> <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></p> <p>a) <i>Number</i></p> <p>b) <i>Size</i></p> <p>c) <i>Material</i></p> <p>14. <i>Height of erection of spotlights</i></p> <p>15. <i>Height of erection of Reflectors</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΣΚ &amp; ΚΘ" (As per Drg. No 9)</b>	
<p>16. <i>Compliance of hot dip galvanizing of column:</i></p> <p>17. <i>Zinc coating (minimum)</i></p> <p>    a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>    b) <i>Thickness on one side (ίm)</i></p> <p>    c) <i>Special anticorrosion coating</i></p> <p>18. <i>Load conditions:</i></p> <p>    a) <i>Wind velocity/vector:</i></p> <p>    b) <i>Door vector</i></p> <p>    c) <i>Spotlights windage area:</i></p> <p>    d) <i>Shaft windage area:</i></p> <p>19. <i>Weatherproof joints:</i></p> <p>20. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΣΚ &amp; ΚΘ" (As per Drg. No 9)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Spotlight total weight</i>	
b) <i>Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i>	
a)	
b)	
c)	
27. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE "KA" (As per Drg. No 7)</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Type/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Shape:</i></p> <p>6. <i>Steel thickness (shaft/arm):</i></p> <p>7. <i>Steel grade (shaft/arm)</i></p> <p>8. <i>Bracket outreach:</i></p> <p>    a) <i>Length</i></p> <p>    b) <i>Material</i></p> <p>9. <i>Bracket tilt angle (<u>Consult luminaire manufacturer for design altitude</u>):</i></p> <p>10. <i>Lantern connection dimensions (spigot diameter/penetration):</i></p>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE "KA" (As per Drg. No 7)</b>	
<p>11. <i>Inspection door:</i></p> <ul style="list-style-type: none"><li>a) <i>Locking device:</i></li><li>b) <i>Opening dimensions:</i></li><li>c) <i>Height above flange plate:</i></li><li>d) <b>Weatherproof door</b></li><li>e) <i>Protection (IP)</i></li></ul> <p>12. <i>Flange plate:</i></p> <ul style="list-style-type: none"><li>a) <i>Dimensions</i></li><li>b) <i>Spacing of Foundation bolts holes</i></li><li>c) <i>Material</i></li></ul> <p>13. <i>Foundation bolts-</i> <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></p> <ul style="list-style-type: none"><li>a) <i>Number</i></li><li>b) <i>Size</i></li><li>c) <i>Material</i></li></ul> <p>14. <i>Height:</i></p> <ul style="list-style-type: none"><li>a) <i>Shaft:</i></li><li>b) <i>Arm.:</i></li></ul>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE "KA" (As per Drg. No 7)</b>	
<p>15. <i>Weight:</i></p> <p>a) <i>Shaft:</i></p> <p>b) <i>Arm:</i></p> <p>16. <i>Compliance of hot dip galvanizing:</i></p> <p>16.1. <i>Zinc coating (minimum)</i></p> <p>a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>b) <i>Thickness on one side (im)</i></p> <p>c) <i>Special anticorrosion Coating</i></p> <p>17. <i>Load conditions:</i></p> <p>a) <i>Wind velocity/vector:</i></p> <p>b) <i>Door vector</i></p> <p>c) <i>Lantern weight/windage area:</i></p> <p>d) <i>Shaft weight:</i></p> <p>e) <i>Bracket weight/outreach:</i></p> <p>18. <i>Weatherproof joints:</i></p> <p>19. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE "KA" (As per Drg. No 7)</b>	
20. <i>Welded fuse cut out and gland plate inside column</i>	YES/NO
21. <i>Top/bottom diameters</i>	
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Vref</i>	YES/NO
b) <i>Cs</i>	
c) <i>Ce(12)</i>	
d) <i>Terrain Category</i>	YES/NO
e) <i>yf</i>	
f) <i>Door vector</i>	
g) <i>Lantern weight</i>	
h) <i>Lantern windage area</i>	
i) <i>Shaft weight</i>	
j) <i>Bracket weight</i>	
k) <i>Bracket outreach</i>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN TYPE "KA" (As per Drg. No 7)</b>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Special anticorrosion coating</i>	YES/NO
27. <i>Other</i>	
<i>a)</i>	
<i>b)</i>	
<i>c)</i>	
28. <i>Remarks</i>	
<i>a)</i>	
<i>b)</i>	
<i>c)</i>	

Υπογραφή Προσφέροντος ή  
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Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΓ &amp; ΚΕ" (As per Drg. No 6)</b>	
<ol style="list-style-type: none"><li>1. <i>Make:</i></li><li>2. <i>Type/Catalogue No.:</i></li><li>3. <i>Country of:</i><ol style="list-style-type: none"><li>a) <i>Origin</i></li><li>b) <i>Manufacture</i></li></ol></li><li>4. <i>Compliance:</i></li><li>5. <i>Shape:</i></li><li>6. <i>Steel thickness (shaft/arm):</i></li><li>7. <i>Steel grade (shaft)</i></li><li>8. <i>Diameter of bottom part of shaft</i></li><li>9. <i>Diameter of top part of shaft</i></li><li>10. <i>Control Gear &amp; Housing</i></li></ol>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΓ &amp; ΚΕ" (As per Drg. No 6)</b>	
<p>11. <i>Inspection door:</i></p> <ul style="list-style-type: none"><li>a) <i>Locking device:</i></li><li>b) <i>Opening dimensions:</i></li><li>c) <i>Height above flange plate:</i></li><li>d) <b>Weatherproof door</b></li><li>e) <i>Protection (IP)</i></li></ul> <p>12. <i>Flange plate:</i></p> <ul style="list-style-type: none"><li>a) <i>Dimensions</i></li><li>b) <i>Spacing of holes</i></li><li>c) <i>Material</i></li></ul> <p>13. <i>Foundation bolts-</i> <b><u>THE BOLTS &amp; NUTS WILL BE SUPPLIED BY OTHERS</u></b></p> <ul style="list-style-type: none"><li>a) <i>Number</i></li><li>b) <i>Size</i></li><li>c) <i>Material</i></li></ul> <p>14. <i>Height of erection of luminaire</i></p> <p>15. <i>Height of erection of Reflectors</i></p>	<p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΓ &amp; ΚΕ" (As per Drg. No 6)</b>	
<p>16. <i>Compliance of hot dip galvanizing of column:</i></p> <p>17. <i>Zinc coating (minimum)</i></p> <p>    a) <i>Weight (g/m<sup>2</sup>)</i></p> <p>    b) <i>Thickness on one side (ίm)</i></p> <p>    c) <i>Special anticorrosion coating</i></p> <p>18. <i>Load conditions:</i></p> <p>    a) <i>Wind velocity/vector:</i></p> <p>    b) <i>Door vector</i></p> <p>    c) <i>Spotlights windage area:</i></p> <p>    d) <i>Shaft windage area:</i></p> <p>19. <i>Weatherproof joints:</i></p> <p>20. <i>Earthing terminal inside column:</i></p>	<p>YES/NO</p> <p>YES/NO</p> <p>YES/NO</p>

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β': - SECTION I (Συνέχεια)**

<b>LIGHTING COLUMN FOR TYPE "ΚΓ &amp; ΚΕ" (As per Drg. No 6)</b>	
21. <i>Welded fuse cut out and gland plate inside column:</i>	YES/NO
22. <i>Recommended concrete foundation dimensions:</i>	
23. <i>Test Certificate shall be provided prior to shipment</i>	YES/NO
24. <i>Characteristics loads</i>	
a) <i>Luminaire total weight</i>	
b) <i>Reflector weight</i>	
c) <i>Shaft weight</i>	
25. <i>Design verification report shall be provided prior to manufacture</i>	YES/NO
26. <i>Other</i>	
a)	
b)	
c)	
27. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή  
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Όνομα Υπογράφοντος:

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ΕΝΤΥΠΟ 8

ΜΕΡΟΣ Β'

SECTION II: ΦΩΤΙΣΤΙΚΑ (LIGHTING LUMINAIRES) ΓΙΑ ΚΟΛΟΝΕΣ ΦΩΤΙΣΜΟΥ  
ΚΑΙ ΦΩΤΙΣΤΙΚΑ

<i>POST – TOP LIGHTING LUMINAIRE FOR 100W M/H ON COLUMN TYPES “ΚΓ &amp; ΚΕ”</i>	
<ol style="list-style-type: none"><li>1. <i>Make:</i></li><li>2. <i>Model/Catalogue No.:</i></li><li>3. <i>Country of:</i><ol style="list-style-type: none"><li>a) <i>Origin</i></li><li>b) <i>Manufacture</i></li></ol></li><li>4. <i>Compliance:</i></li><li>5. <i>Method of anticorrosion treatment:</i></li><li>6. <i>Total power consumption including control gear losses:</i></li><li>7. <i>Recommended local fuse rating:</i></li><li>8. <i>Power factor:</i></li><li>9. <i>Rated voltage:</i></li><li>10. <i>Protection:</i><ol style="list-style-type: none"><li>a) <i>against electric shock</i></li><li>b) <i>against ingress of dust and moisture (IP):</i></li></ol></li><li>11. <b>Reflector material:</b></li><li>12. <i>Reflector type (Symmetric/Asymmetric)</i></li><li>13. <i>Body material</i></li></ol>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>POST – TOP LIGHTING LUMINAIRE FOR 100W M/H ON COLUMN TYPES “ΚΓ &amp; ΚΕ”</b>	
14. <i>Holding arm/s material</i>	
15. <i>Lampholder (type/material):</i>	
16. <i>Bowl type/material</i>	
17. <i>Overall weight including lamp and control gear (Kg):</i>	
18. <i>Windage area (m<sup>2</sup>):</i>	
19. <i>Automatic disconnection of supply</i>	YES/NO
20. <i>Top access luminaire for maintenance and lamp replacement</i>	YES/NO
21. <i>Paint type/colours</i>	
22. <i>Other details</i>	
<i>a)</i>	
<i>b)</i>	
23. <i>Remarks</i>	
<i>a)</i>	
<i>b)</i>	

Υπογραφή Προσφέροντος ή  
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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 150W HPS ON COLUMN TYPE ΚΑ (single) &amp; ΚΑ (double)</b>	<b>1<sup>st</sup> luminaire</b>	<b>2<sup>nd</sup> luminaire</b>
<p>1. <i>Make:</i></p> <p>2. <i>Model/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Method of anticorrosion treatment:</i></p> <p>6. <i>Total power consumption including control gear losses:</i></p> <p>7. <i>Recommended local fuse rating:</i></p> <p>8. <i>Power factor:</i></p> <p>9. <i>Rated voltage:</i></p> <p>10. <i>Protection:</i></p> <p>    a) <i>against electric shock</i></p> <p>    b) <i>against ingress of dust and moisture (IP):</i></p> <p>11. <i>Reflector material:</i></p> <p>12. <i>Body material:</i></p>		

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 150W HPS ON COLUMN TYPE ΚΑ (single) &amp; ΚΑ (double)</b>	<b>1<sup>st</sup> Luminaire</b>	<b>2<sup>nd</sup> Luminaire</b>
13. <i>Canopy material:</i>		
14. <i>Lampholder (type/material):</i>		
15. <i>Gasket material:</i>		
16. <i>Bowl type/material</i>		
17. <i>Side entry (diameter/penetration):</i>		
18. <i>Overall weight including lamp and control gear (Kg):</i>		
19. <i>Windage area (m<sup>2</sup>):</i>		
20. <i>Adjustable tilt luminaire</i>	YES/NO	YES/NO
21. <i>Downward light output ratio Luminaire:</i>		
22. <i>Design attitude:</i>		
23. <i>Installed luminous intensities</i>		
a) <i>At 90°</i>		
b) <i>Above 95°</i>		
24. <i>Computer report submitted</i>	YES/NO	YES/NO
25. <i>Design tables submitted</i>	YES/NO	YES/NO
26. <i>Lantern intensity table (I-table) submitted</i>	YES/NO	YES/NO

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 150W HPS ON COLUMN TYPE ΚΑ (single) &amp; ΚΛ (double)</b>	<b>1<sup>st</sup> luminaire</b>	<b>2<sup>nd</sup> Luminaire</b>
27. Lampholder position (if adjustable)		
28. Reflector type (code)		
29. Reflector position (if adjustable)		
30. Lamp on which illumination calculations are based (make/type)		
31. Automatic disconnection of supply	YES/NO	YES/NO
32. Top access luminaire for maintenance and lamp replacement	YES/NO	YES/NO
33. Paint type/colours		
34. Computer programme can be provided on request	YES/NO	YES/NO
35. Other details		
a)		
b)		
c)		
36. Remarks		
a)		
b)		
c)		

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 250W HPS ON COLUMN TYPE "ΠΟ" (Area lighting) &amp; 100W M/H or COLUMN TYPE ΠΟ (cut-off)</b>	<b>"ΠΟ" Area lighting</b>	<b>"ΠΟ" Area lighting</b>
<ol style="list-style-type: none"><li>1. <i>Make:</i></li><li>2. <i>Model/Catalogue No.:</i></li><li>3. <i>Country of:</i><ol style="list-style-type: none"><li>a) <i>Origin</i></li><li>b) <i>Manufacture</i></li></ol></li><li>4. <i>Compliance:</i></li><li>5. <i>Method of anticorrosion treatment:</i></li><li>6. <i>Total power consumption including control gear losses:</i></li><li>7. <i>Recommended local fuse rating:</i></li><li>8. <i>Power factor:</i></li><li>9. <i>Rated voltage:</i></li><li>10. <i>Protection:</i><ol style="list-style-type: none"><li>a) <i>against electric shock</i></li><li>b) <i>against ingress of dust and moisture (IP):</i></li></ol></li><li>11. <i>Reflector material:</i></li><li>12. <i>Body material:</i></li></ol>		

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 250W HPS ON COLUMN TYPE "ΠΟ" (Area lighting) &amp; 100W M/H or COLUMN TYPE ΠΟ (cut-off)</b>	<b>"ΠΟ" Area lighting</b>	<b>"ΠΟ" Area lighting</b>
13. <i>Canopy material:</i>		
14. <i>Lampholder (type/material):</i>		
15. <i>Gasket material:</i>		
16. <i>Bowl type/material</i>		
17. <i>Side entry (diameter/penetration):</i>		
18. <i>Overall weight including lamp and control gear (Kg):</i>		
19. <i>Windage area (m<sup>2</sup>):</i>		
20. <i>Adjustable tilt luminaire</i>	YES/NO	YES/NO
21. <i>Downward light output ratio Luminaire:</i>		
22. <i>Design attitude:</i>		
23. <i>Installed luminous intensities</i>		
a) <i>At 90°</i>		
b) <i>Above 95°</i>		
24. <i>Computer report submitted</i>	YES/NO	YES/NO
25. <i>Design tables submitted</i>	YES/NO	YES/NO
26. <i>Lantern intensity table (I-table) submitted</i>	YES/NO	YES/NO

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 250W HPS ON COLUMN TYPE "ΠΟ" (Area lighting) &amp; 100W M/H or COLUMN TYPE ΠΟ (cut-off)</b>	<b>"ΠΟ" Area lighting</b>	<b>"ΠΟ" Area lighting</b>
27. <i>Lampholder position (if adjustable)</i>		
28. <i>Reflector type (code)</i>		
29. <i>Reflector position (if adjustable)</i>		
30. <i>Lamp on which illumination calculations are based (make/type)</i>		
31. <i>Automatic disconnection of supply</i>	YES/NO	YES/NO
32. <i>Top access luminaire for maintenance and lamp replacement</i>	YES/NO	YES/NO
33. <i>Paint type/colours</i>		
34. <i>Computer programme can be provided on request</i>	YES/NO	YES/NO
35. <i>Other details</i>		
a)		
b)		
c)		
36. <i>Remarks</i>		
a)		
b)		
c)		

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας: .....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 1000W HPS ON COLUMN TYPE "KA"</b>	
<p>1. <i>Make:</i></p> <p>2. <i>Model/Catalogue No.:</i></p> <p>3. <i>Country of:</i></p> <p>    a) <i>Origin</i></p> <p>    b) <i>Manufacture</i></p> <p>4. <i>Compliance:</i></p> <p>5. <i>Method of anticorrosion treatment:</i></p> <p>6. <i>Total power consumption including control gear losses:</i></p> <p>7. <i>Recommended local fuse rating:</i></p> <p>8. <i>Power factor:</i></p> <p>9. <i>Rated voltage:</i></p> <p>10. <i>Protection:</i></p> <p>    a) <i>against electric shock</i></p> <p>    b) <i>against ingress of dust and moisture (IP):</i></p> <p>11. <i>Reflector material:</i></p> <p>12. <i>Body material:</i></p>	

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 100W HPS ON COLUMN TYPE "KA"</b>		
13.	Canopy material:	
14.	Lampholder (type/material):	
15.	Gasket material:	
16.	Bowl type/material	
17.	Side entry (diameter/penetration):	
18.	Overall weight including lamp and control gear (Kg):	
19.	Windage area (m <sup>2</sup> ):	
20.	Adjustable tilt luminaire	YES/NO
21.	Downward light output ratio Luminaire:	
22.	Design attitude:	
23.	Installed luminous intensities	
	a) At 90°	
	b) Above 95°	
24.	Computer report submitted	YES/NO
25.	Design tables submitted	YES/NO
26.	Lantern intensity table (I-table) submitted	YES/NO

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>LIGHTING LUMINAIRES FOR 100W HPS ON COLUMN TYPE "KA"</b>	
27. <i>Lampholder position (if adjustable)</i>	
28. <i>Reflector type (code)</i>	
29. <i>Reflector position (if adjustable)</i>	
30. <i>Lamp on which illumination calculations are based (make/type)</i>	
31. <i>Automatic disconnection of supply</i>	YES/NO
32. <i>Top access luminaire for maintenance and lamp replacement</i>	YES/NO
33. <i>Paint type/colours</i>	
34. <i>Computer programme can be provided on request</i>	YES/NO
35. <i>Other details</i>	
a)	
b)	
c)	
36. <i>Remarks</i>	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή

Εξουσιοδοτημένου Αντιπροσώπου

και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>INGROUND LIGHTING FITTINGS with 35W M/H LAMPS TYPE "ΕΔ" &amp; "ΕΧ"</b>	<b>TYPE "ΕΔ"</b>	<b>TYPE "ΕΧ"</b>
16. <i>Toughened glass openings</i> 17. <i>Overall weight including lamp and control gear (Kg):</i> 18. <i>Shape: round – cylindrical</i> 19. <i>Overall height</i> 20. <i>Height above Ground/wood</i> 21. <i>Diameter of portion above ground/wood</i> 22. <i>Height inside Ground/wood</i> 23. <i>Diameter of portion inside ground/wood</i> 24. <i>Mechanical impact resistance (joules) (IK)</i> 25. <i>Other:</i> a) b) c) 26. <i>Remarks:</i> a) b) c)	YES/NO	YES/NO

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>INGROUND LIGHTING FITTINGS TYPE "ΓΛ" WITH 35W M/H HIT. LAMP</b>	
16. Overall weight including lamp and control gear (Kg): 17. Shape: round – cylindrical – other 18. Overall height 19. Height above Ground/wood 20. Diameter of portion above ground/wood 21. Height inside Ground/wood 22. Diameter of portion inside ground/wood 23. Mechanical impact resistance (joules) (IK) 24. Other: a) b) c) 25. Remarks: a) b) c)	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>SPOTLIGHTS ON COLUMNS TYPE ΚΛΓ WITH 150W M/H LAMP AND ΣΚ &amp; ΚΘ WITH 250W M/H</b>	<b>FOR ΚΛΓ</b>	<b>FOR ΣΚ &amp; ΚΘ</b>
1. <i>Make:</i>		
2. <i>Model/Catalogue No.:</i>		
3. <i>Origin:</i>		
4. <i>Compliance:</i>		
5. <i>Total power consumption including control gear losses:</i>		
6. <i>Recommended local fuse rating:</i>		
7. <i>Power factor:</i>		
8. <i>Rated voltage:</i>		
9. <i>Protection:</i>		
a) <i>Against electric shock</i>		
b) <i>Against ingress of dust and moisture (IP)</i>		
c) <i>Special anticorrosion coating</i>	YES/NO	YES/NO
10. <i>Reflector material:</i>		
11. <i>Body material:</i>		
12. <i>Fixing Bracket material:</i>		
13. <i>Tilting up/down (degrees)</i>		
14. <i>Beam distribution (degrees)</i>		
15. <i>Lampholder (type/material):</i>		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>SPOTLIGHTS ON COLUMNS TYPE ΚΛΓ WITH 150W M/H LAMP AND ΣΚ &amp; ΚΘ WITH 250W M/H</b>	<b>FOR ΚΛΓ</b>	<b>FOR ΣΚ &amp; ΚΘ</b>
16. <i>Toughened safety glass</i>		
17. <i>Overall weight including lamp and control gear (Kg):</i>		
18. <i>Shape:</i>		
19. <i>Dimensions</i>		
20. <i>Height of installation above Ground on column</i>		
21. <i>Diameter of diffusing glass</i>		
22. <i>Mechanical impact resistance (joules) (IK)</i>		
23. <i>Other:</i>		
a)		
b)		
c)		
24. <i>Remarks:</i>		
a)		
b)		
c)		

Υπογραφή Προσφέροντος ή

Εξουσιοδοτημένου Αντιπροσώπου

και Σφραγίδα Εταιρείας: .....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>FLOODLIGHTS TYPE "SP"</b>		
1.	<i>Make:</i>	
2.	<i>Model/Catalogue No.:</i>	
3.	<i>Origin:</i>	
4.	<i>Compliance:</i>	
5.	<i>Total power consumption including control gear losses:</i>	
6.	<i>Recommended local fuse rating:</i>	
7.	<i>Power factor:</i>	
8.	<i>Rated voltage:</i>	
9.	<i>Protection:</i>	
	a) <i>Against electric shock</i>	
	b) <i>Against ingress of dust and moisture (IP)</i>	
	c) <i>Special anticorrosion coating</i>	YES/NO
10.	<i>Reflector material:</i>	
11.	<i>Body material:</i>	
12.	<i>Fixing bracket material</i>	
13.	<i>Tilting up/down (degrees)</i>	
14.	<i>Aiming angles beam distribution (degrees)</i>	
15.	<i>Lampholder (type/material):</i>	
16.	<i>Toughened safety glass</i>	YES/NO

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>FLOODLIGHTS TYPE "SP"</b>	
17. Overall weight including lamp and control gear (Kg):	
18. Shape:	
19. Dimensions	
20. Mesh anti-vandal protection	YES/NO
21. Diameter of diffusing glass	
22. Sealing Gland IP 68 with 3m wire 2-C, 6mm <sup>2</sup>	YES/NO
23. Mechanical impact resistance (joules)	
24. Other:	
a)	
b)	
c)	
25. Remarks:	
a)	
b)	
c)	

Υπογραφή Προσφέροντος ή

Εξουσιοδοτημένου Αντιπροσώπου

και Σφραγίδα Εταιρείας:

.....

Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>RECESSED IN WALL LIGHTING FLOODLIGHTS TYPE "EN"</b>	
1. <i>Make:</i>	
2. <i>Model/Catalogue No.:</i>	
3. <i>Origin:</i>	
4. <i>Compliance:</i>	
5. <i>Total power consumption including control gear losses:</i>	
6. <i>Recommended local fuse rating:</i>	
7. <i>Power factor:</i>	
8. <i>Rated voltage:</i>	
9. <i>Protection:</i>	
a) <i>Against electric shock</i>	
b) <i>Against ingress of dust and moisture (IP)</i>	
c) <i>Special anticorrosion coating</i>	
10. <i>Reflector material:</i>	YES/NO
11. <i>Body material:</i>	
12. <i>Housing material</i>	
13. <i>Lamp make &amp; size</i>	
14. <i>Indirect downlight distribution</i>	YES/NO
15. <i>Lampholder (type/material):</i>	
16. <i>Toughened shield light source</i>	YES/NO

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION II (Συνέχεια)**

<b>INGROUND LIGHTING FITTINGS TYPE "ΓΛ" WITH 35W M/H HIT. LAMP</b>		
17.	<i>Overall weight including lamp and control gear (Kg):</i>	
18.	<i>Dimensions of Luminaire</i>	
	a) <i>Depth</i>	
	b) <i>Width</i>	
	c) <i>Length</i>	
19.	<i>Dimensions of front cover</i>	
	a) <i>Width</i>	
	b) <i>Length</i>	
20.	<i>Dimensions of Housing</i>	
	a) <i>Depth</i>	
	b) <i>Width</i>	
	c) <i>Length</i>	
21.	<i>Anti-vandal construction luminaire</i>	YES/NO
22.	<i>Mechanical impact resistance (joules) (IK)</i>	
23.	<i>W/P Double entry cable glands provided</i>	YES/NO
24.	<i>Remarks/Other:</i>	
	a)	
	b)	
	c)	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας: .....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION III**

<b><u>CLEAR TUBULAR – HIGH OUTPUT</u></b> <b><u>HIGH PRESSURE SODIUM LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>100W</b>	<b>150W</b>
1.	<i>Make</i>		
2.	<i>Model/Catalogue No.:</i>		
3.	<i>Origin:</i>		
4.	<i>Compliance:</i>		
5.	<u>Lamp characteristics and photometric data</u>		
	a) <i>Lamp watts</i>		
	b) <i>Nominal lumens after 100 Hrs operation</i>		
	c) <i>Nominal Lumens after 2000 Hrs operation</i>		
	d) <i>Nominal Lumens after 16.000 Hrs operation</i>		
	e) <i>Run-up Time</i>		
	f) <i>Re-strike Time</i>		
	g) <i>Voltage at lamp terminals</i>		
	h) <i>Minimum starting Voltage at lamp terminals</i>		
	i) <i>Minimum voltage at lamp terminals for stable operation</i>		
	j) <i>Lamp current</i>		
	k) <i>Lamp starting current</i>		
	l) <i>Frequency</i>		
	m) <i>Average Life Hours*</i>		
	n) <i>Maximum manufacturers's Life guarantee**</i>		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION III (Συνέχεια)**

<b><u>CLEAR TUBULAR – HIGH OUTPUT</u></b> <b><u>HIGH PRESSURE SODIUM LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>100W</b>	<b>150W</b>
6.	<u>General</u> a) <i>Cap Type and Material</i> b) <i>Type of Lamp finish</i> c) <i>Burning position</i> d) <i>Overall length (including cap)</i> e) <i>Bulb Diameter</i>		
7.	<i>Other lamp information</i> a) <i>Lamp mortality curves submitted</i> b) <i>Lumen maintenance curves (based on 10 hrs/start) submitted</i>	YES/NO  YES/NO	YES/NO  YES/NO
8.	<i>Remarks:</i> <i>*Average Life Hours:</i> <i>No. of operating hours after which 50% of the lamps will have failed if operated at 10 hours per start.</i>  <i>**Maximum Manufacturer's Life Guarantee:</i> <i>Enter the maximum number of operating hours guaranteed. Free lamp replacement will be required for all lamps that fail before the expiration of the guaranteed operating hours.</i>		

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION III (Συνέχεια)**

<b><u>CLEAR TUBULAR – HIGH OUTPUT</u></b> <b><u>HIGH PRESSURE SODIUM LAMPS</u></b>		
<b>A/A</b>	<b>Description</b>	<b>250W</b>
1.	<i>Make</i>	
2.	<i>Model/Catalogue No.:</i>	
3.	<i>Origin:</i>	
4.	<i>Compliance:</i>	
5.	<u>Lamp characteristics and photometric data</u>	
	a) <i>Lamp watts</i>	
	b) <i>Nominal lumens after 100 Hrs operation</i>	
	c) <i>Nominal Lumens after 2000 Hrs operation</i>	
	d) <i>Nominal Lumens after 16.000 Hrs operation</i>	
	e) <i>Run-up Time</i>	
	f) <i>Re-strike Time</i>	
	g) <i>Voltage at lamp terminals</i>	
	h) <i>Minimum starting Voltage at lamp terminals</i>	
	i) <i>Minimum voltage at lamp terminals for stable operation</i>	
	j) <i>Lamp current</i>	
	k) <i>Lamp starting current</i>	
	l) <i>Frequency</i>	
	m) <i>Average Life Hours*</i>	
	n) <i>Maximum manufacturers's Life guarantee**</i>	

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION III (Συνέχεια)**

<b><u>CLEAR TUBULAR – HIGH OUTPUT</u></b> <b><u>HIGH PRESSURE SODIUM LAMPS</u></b>		
<b>A/A</b>	<b>Description</b>	<b>250W</b>
6.	<u>General</u> a) <i>Cap Type and Material</i> b) <i>Type of Lamp finish</i> c) <i>Burning position</i> d) <i>Overall length (including cap)</i> e) <i>Bulb Diameter</i>	
7.	<i>Other lamp information</i> a) <i>Lamp mortality curves submitted</i> b) <i>Lumen maintenance curves (based on 10 hrs/start) submitted</i>	YES/NO  YES/NO
8.	<i>Remarks:</i> <i>*Average Life Hours:</i> <i>No. of operating hours after which 50% of the lamps will have failed if operated at 10 hours per start.</i>  <i>**Maximum Manufacturer's Life Guarantee:</i> <i>Enter the maximum number of operating hours guaranteed. Free lamp replacement will be required <b>for all lamps</b> that fail before the expiration of the guaranteed operating hours.</i>	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION IV**

<b><u>METAL HALIDE LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>35W</b>	<b>100W</b>
1.	<i>Make</i>		
2.	<i>Model/Catalogue No.:</i>		
3.	<i>Origin:</i>		
4.	<i>Compliance:</i>		
5.	<u>Lamp characteristics and photometric data</u>		
	a) <i>Lamp watts</i>		
	b) <i>Nominal lumens after 100 Hrs operation</i>		
	c) <i>Nominal Lumens after 2000 Hrs operation</i>		
	d) <i>Nominal Lumens after 16.000 Hrs operation</i>		
	e) <i>Run-up Time</i>		
	f) <i>Re-strike Time</i>		
	g) <i>Voltage at lamp terminals</i>		
	h) <i>Minimum starting Voltage at lamp terminals</i>		
	i) <i>Minimum voltage at lamp terminals for stable operation</i>		
	j) <i>Lamp current</i>		
	k) <i>Lamp starting current</i>		
	l) <i>Frequency</i>		
	m) <i>Average Life Hours*</i>		
	n) <i>Maximum manufacturers's Life guarantee**</i>		

**ΕΝΤΥΠΟ 8**

ΜΕΡΟΣ Β' - SECTION IV (Συνέχεια)

<b><u>METAL HALIDE LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>35W</b>	<b>100W</b>
6.	<u>General</u> a) <i>Cap Type and Material</i> b) <i>Type of Lamp finish</i> c) <i>Burning position</i> d) <i>Overall length</i> e) <i>Bulb Diameter</i>		
7.	<i>Other lamp information</i> a) <i>Lamp mortality curves submitted</i> b) <i>Lumen maintenance curves (based on 10 hrs/start) submitted</i>	YES/NO  YES/NO	YES/NO  YES/NO
8.	<i>Remarks:</i> <i>*Average Life Hours:</i> <i>No. of operating hours after which 50% of the lamps will have failed if operated at 10 hours per start.</i>  <i>**Maximum Manufacturer's Life Guarantee:</i> <i>Enter the maximum number of operating hours guaranteed. Free lamp replacement will be required for all lamps that fail before the expiration of the guaranteed operating hours.</i>		

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας: .....

Όνομα Υπογράφοντος: .....

**ΕΝΤΥΠΟ 8**

ΜΕΡΟΣ Β' - SECTION IV (Συνέχεια)

<b><u>METAL HALIDE LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>150W</b>	<b>250W</b>
1.	<i>Make</i>		
2.	<i>Model/Catalogue No.:</i>		
3.	<i>Origin:</i>		
4.	<i>Compliance:</i>		
5.	<u>Lamp characteristics and photometric data</u>		
	a) <i>Lamp watts</i>		
	b) <i>Nominal lumens after 100 Hrs operation</i>		
	c) <i>Nominal Lumens after 2000 Hrs operation</i>		
	d) <i>Nominal Lumens after 16.000 Hrs operation</i>		
	e) <i>Run-up Time</i>		
	f) <i>Re-strike Time</i>		
	g) <i>Voltage at lamp terminals</i>		
	h) <i>Minimum starting Voltage at lamp terminals</i>		
	i) <i>Minimum voltage at lamp terminals for stable operation</i>		
	j) <i>Lamp current</i>		
	k) <i>Lamp starting current</i>		
	l) <i>Frequency</i>		
	m) <i>Average Life Hours*</i>		
	n) <i>Maximum manufacturer's Life guarantee**</i>		

**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION IV (Συνέχεια)**

<b><u>METAL HALIDE LAMPS</u></b>			
<b>A/A</b>	<b>Description</b>	<b>150W</b>	<b>250W</b>
6.	<u>General</u> a) <i>Cap Type and Material</i> b) <i>Type of Lamp finish</i> c) <i>Burning position</i> d) <i>Overall length</i> e) <i>Bulb Diameter</i>		
7.	<i>Other lamp information</i> a) <i>Lamp mortality curves submitted</i> b) <i>Lumen maintenance curves (based on 10 hrs/start) submitted</i>	YES/NO  YES/NO	YES/NO  YES/NO
8.	<i>Remarks:</i> <i>*Average Life Hours:</i> <i>No. of operating hours after which 50% of the lamps will have failed if operated at 10 hours per start.</i>  <i>**Maximum Manufacturer's Life Guarantee:</i> <i>Enter the maximum number of operating hours guaranteed. Free lamp replacement will be required for all lamps that fail before the expiration of the guaranteed operating hours.</i>		

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
και Σφραγίδα Εταιρείας:

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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8**

**ΜΕΡΟΣ Β' - SECTION V**

<b><u>FUSE CUT – OUTS</u></b> <b>(Typical – To be completed for all columns)</b>		
1.	<i>Manufacturer:</i>	
2.	<i>Country of origin:</i>	
3.	<i>Compliance:</i>	
4.	<i>Rated current:</i>	
5.	<i>Max. cable size:</i>	
6.	<i>Dimensions:</i>	
7.	<i>Flame retardant insulating material</i>	YES/NO
8.	<i>Impact resistant material</i>	YES/NO
9.	<i>Shrouded live terminals</i>	YES/NO
10.	<i>Earthing terminal</i>	YES/NO
11.	<i>Single phase</i>	YES/NO
12.	<i>Other details/Remarks</i>	
	a)	
	b)	
	c)	

Υπογραφή Προσφέροντος ή  
Εξουσιοδοτημένου Αντιπροσώπου  
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Όνομα Υπογράφοντος:

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**ΕΝΤΥΠΟ 8****ΜΕΡΟΣ Β' - SECTION VI**

<b>LIGHTING FITTING CONTROL GEAR</b> <b>(Typical – To be completed for all columns)</b>				
		<i>Ballast</i>	<i>Capacitor</i>	<i>Ignitor</i>
1.	<i>Manufacturer:</i>			
2.	<i>Country of origin:</i>			
3.	<i>Catalogue No:</i>			
4.	<i>Compliance:</i>			
5.	<i>Rated Voltage:</i>			
6.	<i>Rated Frequency:</i>			
7.	<i>Rating/Tolerance:</i>			
8.	<i>Power Factor:</i>			
9.	<i>Maximum/operating temperature:</i>			
10.	<i>Digital pulse control ignitor</i>			YES/NO
11.	<i>Self resetting thermo switch ballast</i>	YES/NO		
12.	<i>Other details/Remarks</i>			
	a)			
	b)			
	c)			

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