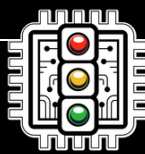
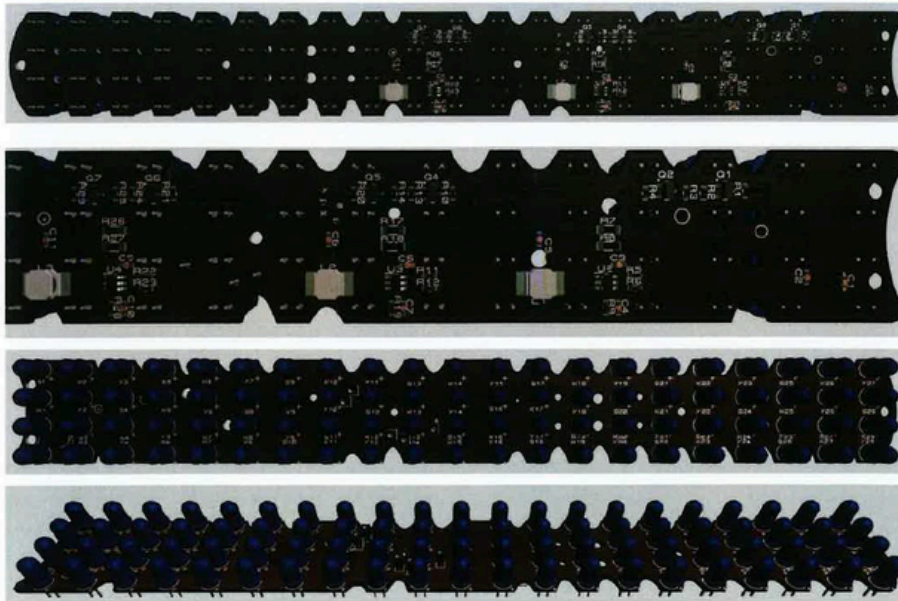
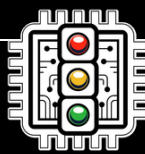


1. LED ALUMINUM STANDARD SIGNAL POLE TECHNICAL SPECIFICATIONS

- 1.1. Signaling poles will be manufactured in accordance with ISO- 9001: 2005 criteria.
 - 1.2. The vector corporate logo will be made on the lower base using the UV printing method.
 - 1.3. There will be an aluminum base made of the profile seen in the technical drawing below on the pole anchor table.
 - 1.4. The aluminum profiles to be used in signaling poles will comply with the forms and dimensions specified in the technical drawing below.
 - 1.5. The profile will be manufactured in a single piece, seamless and without welding.
 - 1.6. There should be no mold lines, tears, burrs or pick-ups on visible surfaces.
 - 1.7. The profiles in question with EN AW-6060 alloy must be subjected to artificial aging heat treatment to provide T66 temper properties. This process and mechanical properties must comply with TS EN 755-2.
 - 1.8. Tensile strength: (Rm) min should be 215 Mpa.
 - 1.9. Percentage elongation: (A50MM) should be at least 6%.
 - 1.10. Profile bending process should be done with CNC bending machine with digital Radius measurement control.
 - 1.11. Steel base plate, steel base pipe and other metal parts should be subjected to hot dip galvanizing process.
 - 1.12. Before galvanizing process, products should be immersed in acidic bath and oil and chemical residues that may be on the material should be cleaned.
 - 1.13. Even if there is no rust on the surface of the products, it is necessary to keep them in acid baths for galvanization activation.
 - 1.14. Hot dip galvanizing process should be done according to TS EN ISO 1461 standard.
 - 1.15. Mounting Table formed by welding with special welding method should be subjected to hot dip galvanizing process.
 - 1.16. The mounting plate used to fix the signaling poles to the anchor concrete will be produced with the approval of the administration, and if necessary, it may be requested to be compatible with the existing poles in the administration.
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- 1.17. LEDs will be 5 mm DIP LEDs in accordance with TSE EN 12368 standards.
 - 1.18. LED module outer dimensions should not exceed 250x36x15 mm.
 - 1.19. PCB should have a black background to prevent light reflection.
 - 1.20. If one of the LEDs used in the modules bursts, the others will continue to work.
 - 1.21. The LEDs to be used will be supplied with constant current and will not operate with constant voltage.
 - 1.22. LED modules should be insulated by coating them with UV-added polymer material that will not be affected by sunlight

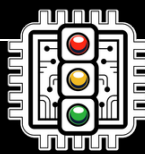
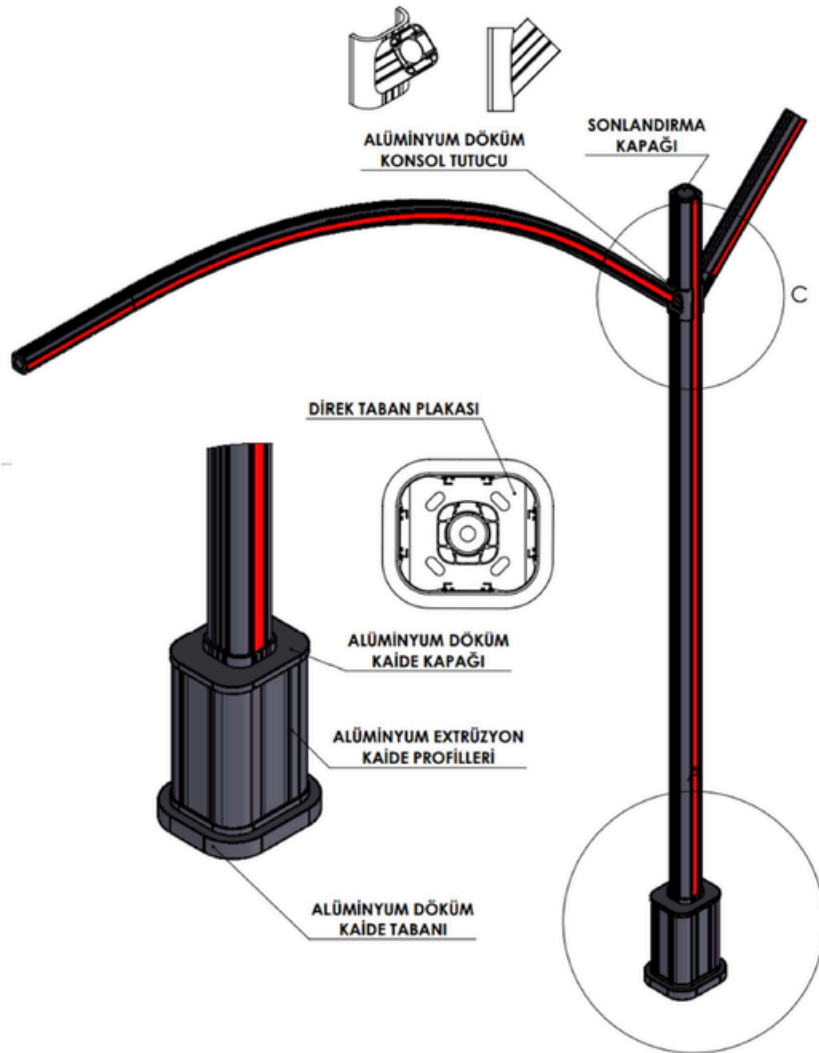


- 1.23. LED module connections will be made with protected sockets.
- 1.24. LED modules will be mounted in a way that can withstand shocks that may occur on aluminum profiles.
- 1.25. Modules can be replaced individually in case of failure.
- 1.26. LED modules under the vertical signaling group should be protected by being enclosed in UVresistant transparent polycarbonate profiles that are resistant to impacts and external interventions.
- 1.27. The entire LED system used throughout the signaling pole must be controlled by a converter circuit board that will enable the system to operate by receiving signals from the traffic signal controller.
- 1.28. The circuit board must be in an IP66 box to ensure insulation .
- 1.29. The control unit must have an internal clock unit and a battery that preserves the clock information memory in case of power outage.
- 1.30. Sunrise and sunset times will be calculated automatically every day according to the relevant location coordinates and time zone, in line with the information entered from the menu in the control unit.
- 1.31. Day/night will be detected automatically by the GPS connection module in the control unit and the brightness of the relevant LED channel at night should be adjusted with the night mode percentage of that channel. Otherwise (day mode) it should be operated with the day mode percentage of the relevant channel. The location where the poles will be installed and the day/night time information of the relevant location will be automatically provided via the GPS module and the automatic brightness level change will be realized without requiring any additional settings.
- 1.32. Signaling transition sensitivity is determined in milliseconds and will be at most 50 ms .
- 1.33. Signaling transition sensitivity must be synchronized with traffic signal transmitters. LEDs will be turned on synchronously with signal transmitters that comply with TS EN 12368 standard.
- 1.34. The device must be protected against short circuit and reverse polarity.



2. LED ALUMINUM OVERHEAD SIGNAL POLE TECHNICAL SPECIFICATIONS

- 2.1. Signaling poles will be manufactured in accordance with ISO- 9001: 2005 criteria.
- 2.2. The vector corporate logo will be made on the lower base using the UV printing method.
- 2.3. There will be an aluminum base made of the profile seen in the technical drawing below on the pole anchor table.
- 2.4. The dimensional tolerances of the profile to be used must be in accordance with EN -755-9.
- 2.5. The aluminum profiles to be used in signaling poles will comply with the forms and dimensions specified in the technical drawing below.
- 2.6. The profile will be manufactured in a single piece, seamless and without welding.
- 2.7. mold lines, tears, burrs or pick-ups on visible surfaces .
- 2.8. The profiles in question with EN AW-6060 alloy must be subjected to artificial aging heat treatment to provide T66 temper properties. This process and mechanical properties must comply with TS EN 755-2.
- 2.9. Tensile strength: (Rm) should be at least 215 Mpa .
- 2.10. Yield strength (Rp 0.2) should be at least 160 Mpa .
- 2.11. Percentage elongation: (A50MM) should be at least 6%.
- 2.12. The bending process of the profiles should be done with a CNC bending machine with digital Radius measurement control.
- 2.13. Strength and heat treatment properties must be as specified in the table below in accordance with EN AW 6060 (AlMg0.7Si) standards.
- 2.14. Steel base plate, steel base pipe and other metal parts should be hot dip galvanized.
- 2.15. Before the galvanizing process, the products should be immersed in an acidic bath to clean any oil and chemical residue that may be on the material.



- 2.30. LED module connections will be made with protected sockets.
- 2.31. LED modules will be mounted in a way that can withstand any shocks that may occur on aluminum profiles.
- 2.32. Modules can be replaced individually in case of failure.
- 2.33. LED modules under the vertical signaling group should be protected by being enclosed in UVresistant transparent polycarbonate profiles that are resistant to impacts and external interventions.
- 2.34. The entire LED system used throughout the signaling pole must be controlled by the converter circuit board to enable the system to operate the signals coming from the traffic signal controller.
- 2.35. It should be in an IP66 box to ensure the insulation of the circuit board .
- 2.36. The control unit must have an internal clock unit and a battery that preserves the clock information memory in case of power outage.
- 2.37. Sunrise and sunset times will be calculated automatically every day according to the relevant location coordinates and time zone, in line with the information entered from the menu in the control unit.
- 2.38. Thanks to the GPS connection module in the control unit, day/night will be detected automatically and at night, the brightness of the relevant LED channel should be adjusted with the night mode percentage of that channel. Otherwise (day mode), it should be operated with the day mode percentage of the relevant channel. The location where the poles will be installed and the day/night time information of the relevant location will be automatically provided via the GPS module and the automatic brightness level change will occur without requiring any additional settings.
- 2.39. Signaling transition sensitivity is determined in milliseconds and will be at most 50 ms .
- 2.40. Signaling transition sensitivity must be synchronized with traffic signal transmitters. LEDs will be turned on synchronously with signal transmitters that comply with TS EN 12368 standard.
- 2.41. The device must be protected against short circuits and reverse polarity.

