Optical landing system
LUNA-3E

PROVIDES

the pilot with continuous visual data on the carrier aircraft position on the glideslope at the final approach

FUNCTIONS:

- Generates five main monochrome and four additional mixed light information sectors using five red, green, and yellow indicating lights comprised in indicating lights unit (ILU) thus realizing color and positional data coding principles
- Adjusts ILU to the required glideslope angle α_G
- Gyrostabilizes glideslope angle α_G with respect to averaged deck position
- Provides response to hook-to-eye compensation angles β_{HE} for some aircraft types
- Monitors the performance of component devices
- Generates the following current parameters and transmits them to other visual landing aids in digital form:
  - glideslope angle with respect to averaged deck position α_G
  - ILU tilt angles with respect to the deck α_{ILU}
  - hook-to-eye compensation angle β_{HE}
  - averaged pitch of landing area ψ_0
  - errors of main (or standby) drives $\Delta\alpha_G$, $\Delta\beta_{HE}$
- Reproduction of angles α_G, β_{HE} and errors $\Delta\alpha_G$, $\Delta\beta_{HE}$ for any period within the last 24 h using the connected PC

ЭЛЕКТРОПРИБОР

COMPONENTS:

- Stabilization and tilt device (CH) – 1 pc.
- Case of device CH – 1 pc.
- Control and monitoring device (УК) – 2 pcs.
- Power supply system
- Data display device (И) – 1 pc.
- Deck structures for datum and waveoff lights
- Lighting system Luna-3ST comprising:
  - indicating lights (IL) – 5 pcs.
  - datum lights (DL) – 10 pcs.
  - waveoff lights (WL) – 2 pcs.
  - power supply and switching unit – 2 pcs.
  - monitoring and control panel – 1 pc.
  - remote control panel – 1 pc.
  - control console – 1 pc.

FEATURES:

- MTBF – min 600 h
- Life to major repair – 2000 h
- Total operational life – 5000 h
- Service life to medium repair – 10 years
- Total service life – 20 years

SPECIFICATIONS

	Value
Angular dimensions of ILU lighting information sectors in vertical plane:	
• yellow flashing indicating light (IL1)	55′ ±5′
• yellow, green, and red indicating lights (IL2-IL4)	25′ ±1′
• red flashing indicating light (IL5)	25′ ±5′
• overlapping of adjacent sectors	7′ ±1′
Angular dimensions of green light beams of datum lights (DL1 – DL10) in vertical plane	-3° to 6°
Angular dimensions of light beams of indicating lights IL1 – IL5 with 0.05 axial lighting force and datum lights DL1 – DL10 with 0.01 of axial lighting force in horizontal plane	-20° to 20°
Angular dimensions of red flashing light beams of waveoff lights WL1, WL2	-20° to 20°
Detection range of datum lights DL1 - DL10 at the atmosphere transparency coefficient $\tau \geq 0.9$	min 5.0/3.0 km
Precise recognition range of indicating lights IL1 –IL5, datum lights DL1 – DL10 with $\tau \geq 0,9$ at night/daytime	min 3.0/2.5 km
Gradual adjustment of the axial lighting force of datum lights DL1 –DL10	3%, 5%, 7%, 10%, 30%, 50%, 70%, 100%
ILU angular freedom:	
• about axis α_{ILU}	-2° to 9°
• about axis β_{HE}	-5° to 5°
Errors of drive performance:	
• direct drive about axis α_{ILU}	-5′ to 5′
• gear drive about axis β_{HE}	-8′ to 8′
Transient at automatic switching α_{ILU}, β_{HE} drives from main to standby	max 1 s
Readiness time	1h

ЭЛЕКТРО ПРИБОР

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