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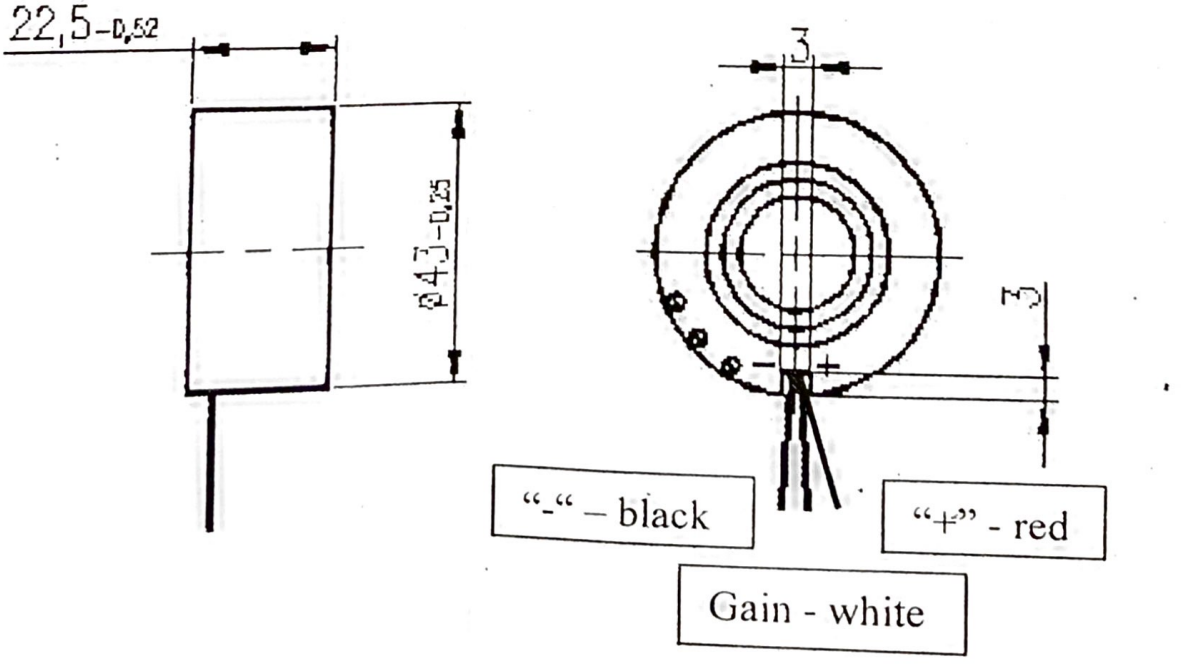
Electro-optical Converter
ЭПМ221Г-10-11AR

DATASHEET

1 GENERAL INFORMATION

Electro-optical converter ЭПМ221Г-10-11AR with a direct image transfer, multialkali photocathode, microchannel plate for electron multiplication at a pitch between the holes' axes over 12.1 μm, embedded power supply, input and output window on the flat glass, designed to amplify weak light fluxes in night-vision equipment for national and economic use.

Individual Number 92941 Date of Manufacturing 10.07



2. BASIC TECHNICAL REQUIREMENTS

2.1 Electrical parameters on the moment of supply are shown in Table 1.

Table 1

Name of parameter, Measure unit	Norm			Measurement data	Comme
	Not less	Nominal	Not more		
Total sensitivity of photocathode, μA/lm	500			830	
Photocathode sensitivity with filter KC-27, μA/lm	240			370	
Photoelectric yield with wave length 850 nm, mA/W	35			51,5	
Conversion efficiency, rel. unit	20000			27000	
Resolution limit, hatch/mm	45			47,3	
Dark background brightness, cd/m2			$1.5x10^{-3}$	$0,9x10^{-3}$	
Degree of vision area purity	Paragraph 3.3.3, table 3 TC			Corresponds with TC	
Monitor brightness within the range from 0,005 to 0,4 lx, cd/m^2	2.0		8.0		Guarante
Power supply range, V	2.0		3.6		Guarante
Useful current, mA			25		Guarante

2.2 Electrical parameters changing in the process of operation:
Conversion efficiency – not less than 15000.

2.3 Electrical parameters changing in the process of storage:
Conversion efficiency – not less than 15000

2.4 Maximum operational modes are shown in Table 2.

Table 2

Name of parameter, Measure unit	Norm		
	Not less	nominal	Not more
Photocathode illumination, lx	-	10^{-4}	10^{-1}*
Power voltage, V	2,0	2,8	3,6

*EOC operation time with photocathode illumination $1 \cdot 10^{-1}$ lx should not exceed 5hrs for all operation time.

2.5 Minimal running hours of EOC provided operation modes and terms set КФСЕ.433240.009Technical Conditions not less than 10 000 hrs.

2.6 Minimal shelf lifetime provided heated storage or humidity and temperature control stora or in any place of storage of the product incorporated into protected equipment or whicl situated in protected SPTA complex is not less than 5 years.

2.7 EOC overall size: diameter, mm – does not exceed 43; length, mm – does not exceed 22.5. Product mass, g – does not exceed 60.

2.8 Non-ferrous metals content:
Copper and its alloys 0.12 g in details and solder
Nickel and its alloys 1.52 g in details

3. INFORMATION ON ACCEPTANCE

ЕОС ЭПМ221Г-10-11А individual number 92941 satisfies technical requirements КФСЕ. 433240.009 ТС and is considered exploitable.

Acceptance date 01.08.2020г.
Date

QCD seal 

Signature_____

Recheck_____
Date

QCD seal

Signature_____

4. MANUAL

4.1 During installation and operation, application of force more than 1N (0.1kgf) to the input and output windows of EOC is prohibited. Touching input and output optical surfaces with fingers or solid objects is prohibited. Maximal axial and lateral force applied to the EOC while fastening is 10N (1kgf)

4.2 Exposing the turned-off EOC to direct sunlight and continuous (more than 1h) exposing it to diffused light with illumination rate more than 100lx is prohibited.

4.3 Switching on the EOC can be made only with photocathode illumination rate less than 0.1lx

4.4 Maximal power supply voltage cannot exceed the established requirements.

4.5 In order to avoid failure of the EOC power supply, the application equipment circuit should allow the installation of a non-polar capacitor with a capacitance 1uf parallel to the voltage input terminals (e.g. model K10-47a)

4.6 Relative humidity in the application equipment during the EOC operation should not exceed 40%. Other operation directives are to be performed according to RD 110708.

5. STORAGE REGULATIONS

EOC should be stored according to the State Standard 21493.

6. MANUFACTURER'S WARRANTY

The Manufacturer guarantees that the quality of EOC corresponds to the КФСЕ.433240.009Technical Conditions, provided the Consumer complies all the terms and conditions of storage, installation and operation listed in the datasheet. The Warranty Period is 2.5 years after first introduction of the Product into service. Warranty life is 10 000 hrs within the Warranty Period. Guaranteed storage life is 5 years from the date of acceptance, for the rechecked EOCs – from the date of recheck.

7. UNSATISFACTORY EQUIPMENT LIST

In case of premature failure, EOC and its datasheet should be returned to the manufacturer with the following information:

Shelf time
Operation commencement date
Date of failure
Basic data of the operational mode_____
Running hours in the described mode, h_____
Reasons for taking EOC out of commission or removing it from custody_____

Data fulfilled _____ signature_____
date

If the fulfilled datasheet is absent, no unsatisfactory equipment list is accepted.