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Kenya Power

LINE INSPECTION BINOCULARS — SPECIFICATION

A Document of the Kenya Power & Lighting Company Plc.

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01. Circulation List

COPY NO.	COPY HOLDER
1	Manager, Standards
Electronic copy (pdf) on Kenya Power server (http://172.16.1.40/dms/browse.php?fFolderId=23)	

REVISION OF KPLC STANDARDS

In order to keep abreast of progress in the industry, KPLC standards shall be regularly reviewed. Suggestions for improvements to approved standards, addressed to the Manager, Standards Department, are welcome.

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Issued by: Head of Section, Standards Development	Authorized by: Head of Department, Standards
Signed:	Signed:
Date: 2022-12-19	Date: 2022-12-19

0.2 Amendment Record

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
Issue 1 Rev 0	2011-04-15	New Issue	G. Gathige	S. Kimitei
Issue 2 Rev 0	2022-12-19	I. Replaces Issue 1 Rev. 0 II. Renamed 'Line Inspection Binoculars' to differentiate it from the normal binoculars	Rotich Benard	Dr. Eng. P. Kimemia

FOREWORD

This Specification has been prepared by the Standards Department in collaboration with Technical Audit Department, both of The Kenya Power and Lighting Company Plc (herein called KPLC) and it lays down requirements for Line Inspection Binoculars for Transmission and Distribution power lines inspection.

This specification is for Line Inspection Binoculars for outdoor use on distribution and transmission power lines inspection including Live Lines.

This specification stipulates the minimum requirements for Line Inspection Binoculars acceptable for use in the company and it shall be the responsibility of the suppliers and manufacturer to ensure that the offered design is of the highest quality and guarantees excellent service to KPLC, good workmanship and good engineering practice in the manufacture of Line Inspection Binoculars for KPLC.

Users of this Kenya Power specification are responsible for its correct interpretation and application.

The following are members of the team that developed this specification:

No	Name	Department
1.	Peter Mulandi	Technical Audit
2.	Alex Kiptoo	Technical Audit
3.	Rotich Benard	Standards

1. SCOPE

This specification is for Line Inspection Binoculars for outdoor use on distribution and transmission power lines inspection and Live Lines.

2. NORMATIVE REFERENCES

The following standard and guidelines contain provision, which, through reference in this text, constitute provisions of this specification. For dated editions, the cited edition will apply; for undated editions, the latest edition of the referenced document shall apply:

IEC 60529: Degree of Ingress protection provided by covers

ISO 14133-1: General requirement for Optical and optics instruments.

OIML D11: General environmental requirements for measuring instruments

3. DEFINITIONS AND ABBREVIATIONS

For the purpose of this specification, the definitions and abbreviations given in the reference standards shall apply.

4. REQUIREMENTS

4.1. SERVICE CONDITIONS

The binoculars shall be suitable for use in tropical areas and harsh climatic conditions including areas exposed to:

a) Altitudes of up to 2200m above sea level;
b) Humidity of up to 95% without condensing;
c) Average ambient temperature of +30ºC with a minimum of -1ºC and a maximum of +40ºC;
d) Heavy Saline conditions along the coast.

4.2. DESIGN, CONSTRUCTION AND WORKMANSHIP

4.2.1. The binoculars shall be ideal for power line inspection and other electrical installations, and shall be capable of giving a clear view of objects like insulators, conductors and other line hardware items

4.2.2. The binoculars shall be compact, lightweight and rugged, and easy-to-hold design.

4.2.3. The binoculars housing shall be nitrogen-purged, waterproof, and fogproof, with a rubberized armoring to ensure a non-slip grip.

4.2.4. The design shall feature a multicoated lens coating to optimize light transmission for a brighter image and enhanced contrast.

4.2.5. The binoculars shall have phase-coated roof prisms to increase resolution thus resulting in crystal-clear images.

4.2.6. The binoculars shall be supplied complete with eyepiece covers and tethered lens covers. To accommodate anyone with glasses, the eyepieces have twist-up eyecups.

4.2.7. The binoculars shall have smooth Central Focus Knob for quick view adjustment.

4.2.8. The binoculars shall meet following technical particulars;

Table 1: Binoculars Minimum Requirements

No	Particulars	Requirements
1.	Lens type	Multicoated glass lens
2.	Body Design	Waterproof and Nitrogen filled (optional)
3.	Focus Knob	Centrally positioned
4.	Focusing System	Central Focus
5.	Magnification	10 x
6.	Objective Diameter	At least 30mm
7.	Angular Field of View (Real)	At least 7 °
8.	Close Focus Distance	At least 10.0ft
9.	Exit Pupil	At least 2.7 mm
10.	Power	Not less than 8x42
11.	FOV at 1000 yards	At least 362 ft.
12.	Prisms	Phase coated roof
13.	Lens cover	Tethered
14.	Eye piece covers	Required
15.	Weight	At least 0.40kgs

4.2.9. The binoculars shall be supplied complete with following accessories;

a) Carrying case.
b) Detach neoprene neck strap.
c) Eyepiece covers.
d) Tethered lens covers.

5. TESTS AND INSPECTION

The Line Inspection Binoculars shall be tested and inspected as per relevant standards.

6. MARKING AND PACKING

6.1. MARKING

The Line Inspection Binoculars shall be marked in a permanent manner with the following information (in English Language):

a) Manufacturer's Name
b) Tool model no and serial no
c) Optimal Operating temperature
d) Year of Manufacture
e) The words **"PROPERTY OF KPLC"**

6.2. PACKING

6.2.1. The packaging for the items shall be on an easy-to-see, bright-yellow protective bag made of double vinyl-laminated open-weave nylon cloth, which shall be lightweight and durable with nylon stitching throughout.

6.2.2. The cases shall be furnished with an illustrated operating and maintenance instructions for the items.

……**THIS SPACE IS INTENTIONALLY LEFT BLANK**……

APPENDICES

APPENDIX A: TESTS AND INSPECTION (NORMATIVE)

A.1 On receipt of the binoculars, Kenya Power shall inspect them for acceptance at stores and may perform or have tests performed in order to verify compliance with this specification. The supplier shall replace without charge to Kenya Power binoculars, which upon examination, test or use fail to meet any or all of the requirements in the specification.

APPENDIX B: QUALITY MANAGEMENT SYSTEM (Normative)

B.1 The Manufacturer's Declaration of Conformity to applicable standards and copies of quality management certifications including copy of valid and relevant ISO 9001: 2015 certificate shall be submitted with the tender for evaluation.

APPENDIX C: DOCUMENTATION (Normative)

C.1 The bidder shall submit its tender complete with technical documents for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:

a) Fully-filled clause by clause Guaranteed Technical Particulars (GTP) signed by the manufacturer, specific values shall be filled in. Terms like "Yes", "Agree", "Complied" **shall not be acceptable;**

b) Copies of the Manufacturer's catalogues, brochures, drawings and technical data;

c) Product datasheets

C.2 The successful bidder (supplier) shall submit the following documents/details to KPLC for approval before manufacture:

a) Fully-filled clause by clause Guaranteed Technical Particulars (GTP) signed by the manufacturer, specific values shall be filled in. Terms like "Yes", "Agree", "Complied" **shall not be acceptable;**

b) Product datasheets, manufacturer's catalogues and brochures

c) Marking details;

d) Packaging details (including packaging materials).

APPENDIX D: GUARANTEED TECHNICAL PARTICULARS (Normative)

(To be filled and signed by the Manufacturer and submitted together with relevant copies of the Manufacturer's catalogues, brochures, drawings, technical data, sales records for previous five years, four customer reference letters, details of suppliers' capacity and experience; and copies of complete type test certificates and test reports for tender evaluation, all in English Language)

Tender No. .....

Clause number	KPLC requirement	Bidder's offer (indicate full details)
Manufacturer's Name and address		*Specify*
Country of Manufacture		*Specify*
Bidder's Name and address		*Specify*
1.	Scope	*Specify*
2.	References	*Specify*
3.	Definitions and abbreviations	*Specify*
4.	**Requirements**	
4.1	**Service Conditions**	*State*
4.2	**Design, Construction and workmanship**	
4.2.1	Use of the binoculars	Specify
4.2.2	Design of the binoculars	Specify
4.2.3	Binoculars housing properties	Specify
4.2.4	The type of binoculars' lens	Specify
4.2.5	The binoculars has roof prism	Specify
4.2.6	The binoculars has eyepiece covers and tethered lens covers	Specify
	the eyepieces have twist-up eyecups	State
4.2.7	Binoculars has Central Focus Knob for quick view adjustment	State
4.2.8	**Binoculars Minimum Requirements**	
1.	Lens type	Specify
2.	Body Design	Specify
3.	Focus Knob	Specify
4.	Focusing System	Specify
5.	Magnification	Specify
6.	Objective Diameter	Specify
7.	Angular Field of View (Real)	Specify
8.	Close Focus Distance	Specify
9.	Exit Pupil	Specify
10.	Power	Specify
11.	FOV at 1000 yards	Specify

Clause number	KPLC requirement	Bidder's offer (indicate full details)
12.	Prisms	Specify
13.	Lens cover	Specify
14.	Eye piece covers	Specify
15.	Weight	Specify
4.2.9	**Accessories to be supplied with the Binoculars**	
a)	Carrying case	*Specify*
b)	Detach neoprene neck strap	*Specify*
c)	Eyepiece covers	*Specify*
d)	Tethered lens covers	*Specify*
5	**Test Requirements**	
	Test standards and responsibility of testing	*Specify*
6	**Marking and Packing**	
6.1	Marking details	*Specify*
6.2	**Packing**	
6.2.1	Packaging	*Specify*
6.2.2	Instructions for use	*Specify*
	APPENDICES	
A	**TESTS AND INSPECTION (NORMATIVE)**	
A.1	Local inspection and acceptance & Replacement of faulty binoculars	*State*
B	**Quality Management System**	
B.1	Manufacturer's declaration of conformity to applicable standards including ISO 9001:2015 certificate	*Provide*
C	**Documentation**	
C.1	Documents submitted with tender	*State*
C.2	Documents to be submitted by supplier to KPLC for approval before manufacture	*State*
	Statement of compliance to specification (indicate deviations if any & supporting documents)	*State*

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Manufacturer's Name, Signature, Stamp and Date