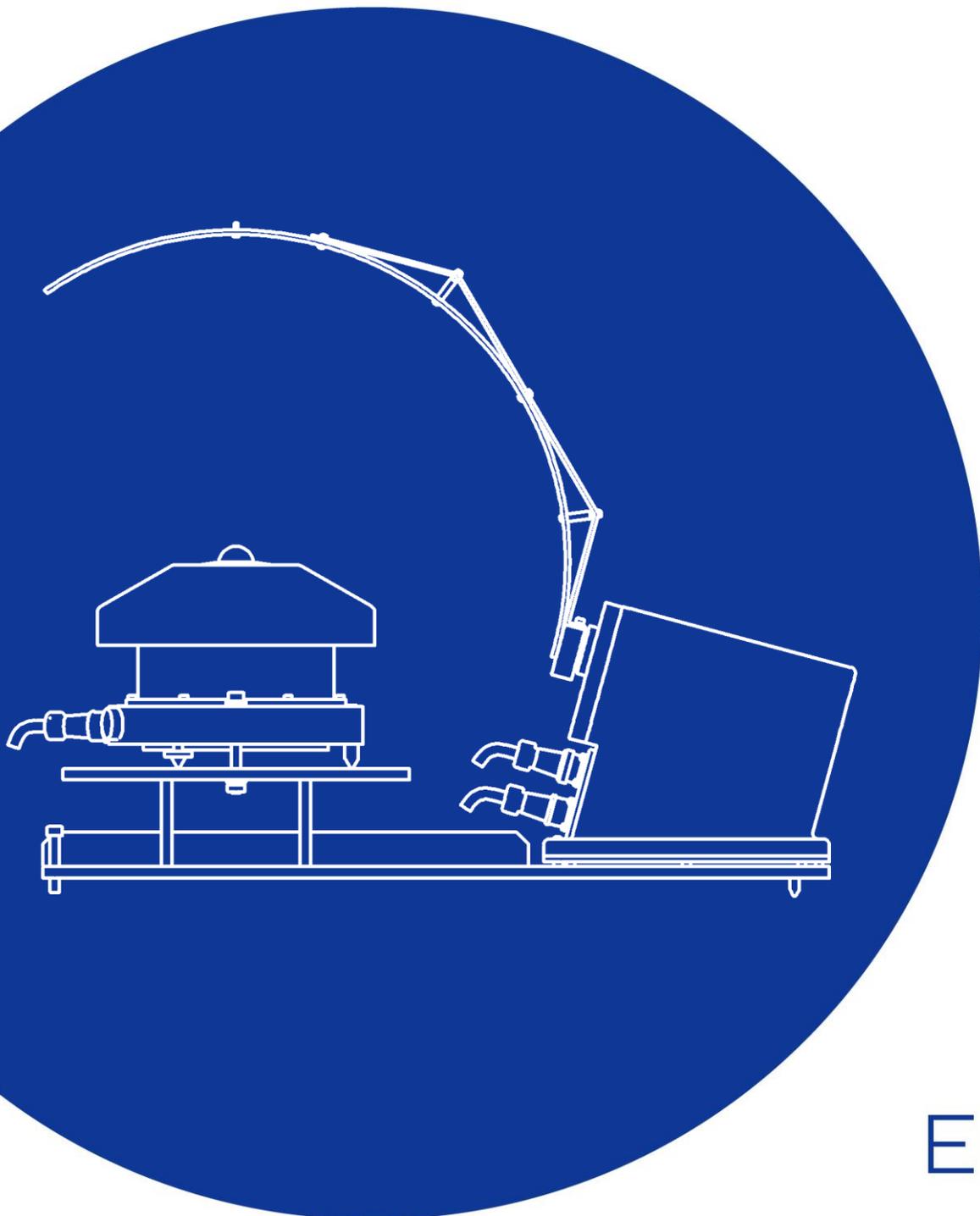


SPECIFICATIONS

Rotating Shadow Band
For Spectroradiometers

RSB-01



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2. Introduction

RSB-01 is a rotating shadow band which is specially designed for spectroradiometers. By using this device, following measurements can be taken:

1. Measurement of GHI

Global component of the solar spectrum can be measured by moving the shadow band to the band resting position which does not block the hemispherical field of view of the spectroradiometer.

2. Measurement of DHI and DNI

Diffuse component of the solar spectrum can be measured by moving the shadow band to the sun position and blocking the direct component. And, Diffused light which is excessively blocked by the shadow band can be compensated by combining the above GHI and blocking the direct component (uncorrected DHI) measurements, by measuring the global component with shadow band moved to arbitrary angle θ towards east and west from the sun position.

*In this text, above mentioned "arbitrary angle θ " is called as "edge angle".

3. Specifications

3-1. Main Unit

Table 3-1 Main Unit Specification

Characteristics	Details
Precision of Shadow Band Position	$\pm 2^\circ$
Measurement Time (4 positions)	20 to 50 seconds (depends on the exposure time)
Measurement Frequency (4 positions)	1 rotation / minute
Operating Temperature Range	-10 to +50°C
Storage Temperature Range	-25 to +80°C
Power Supply	100-240VAC
Power Consumption	RSB: Standby status: 8W, Maximum 15W
	Spectroradiometer: Maximum 50W
Communication	RS-422
Dimension (Shadow Band: Perpendicular position)	W300 x D702.7 x H587.5 mm
Weight	11kg

3-2. Shadow Band

Table 3-2 Shadow Band Specifications

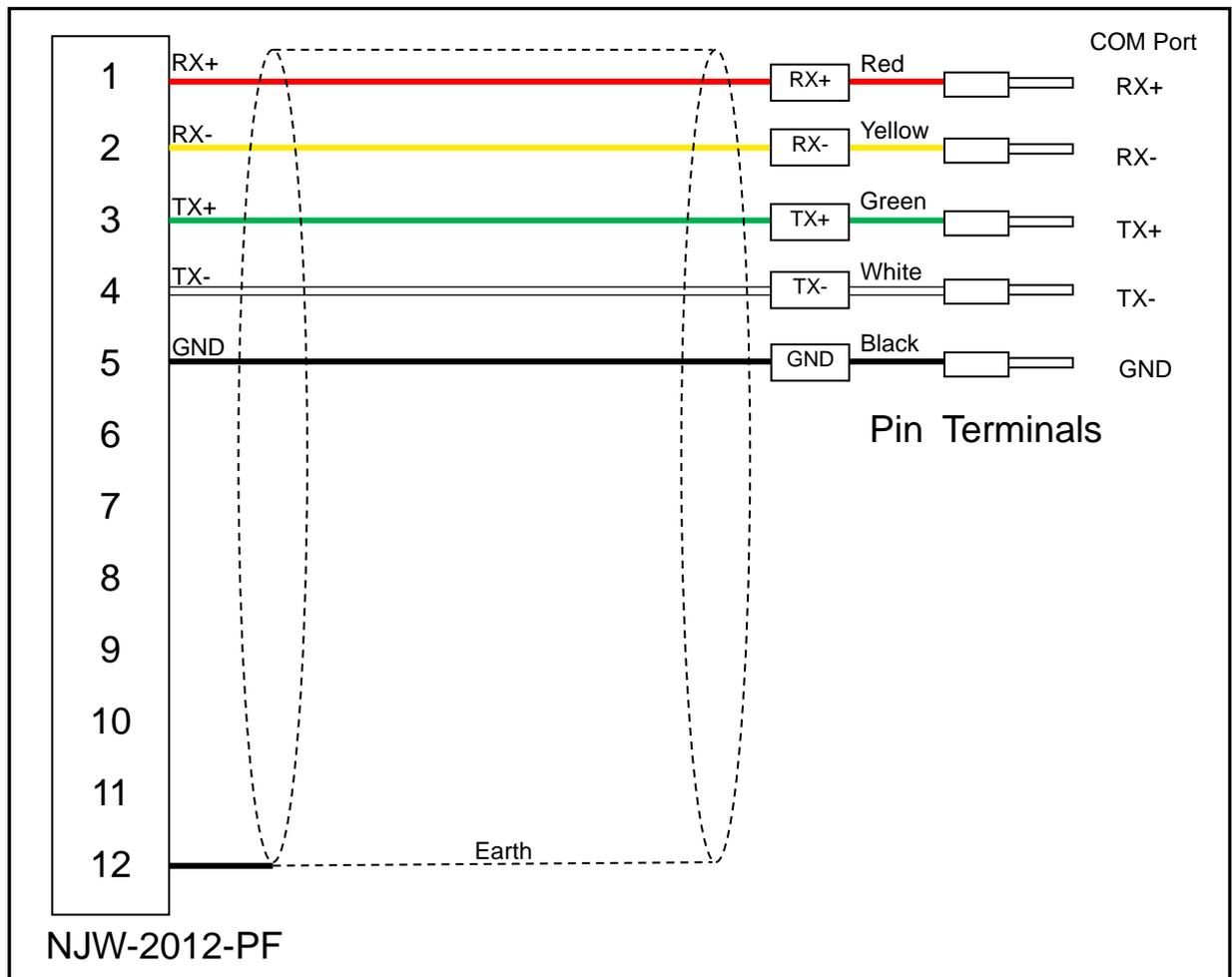
Characteristics	Details
Shielding Angle	5°
Shadow Band Radius	Radius 285mm

3-3. Cables Specifications

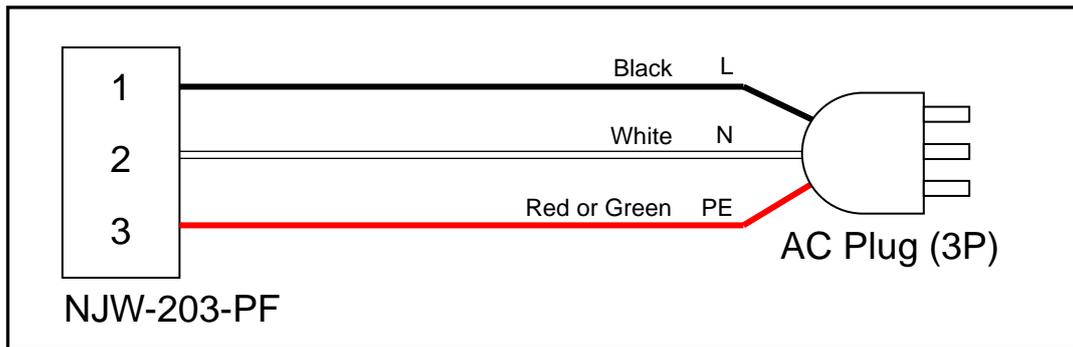
Table 3-3 Cable Specifications

Cables	Details	
Communication Cable	Material:	PVC (Gray)
	Diameter:	0.3 mm ² x 5pins
	Outer Diameter:	φ 7 mm
	Cable end	Pin Terminal (1.25Y-4)
Power Cable	Material:	PVC (Gray)
	Diameter:	0.75 mm ² x 3pins
	Outer Diameter:	φ 7mm
	Cable end	AC Plug (3P)
Spectroradiometer Connection Cable	Material:	PVC (Black)
	Diameter:	0.3 mm ² x 12 pins
	Outer Diameter:	φ 10 mm
	Cable end	Waterproof Plug (12P)

1. Communication Cable



2. Power Cable



3-4. Dimensions

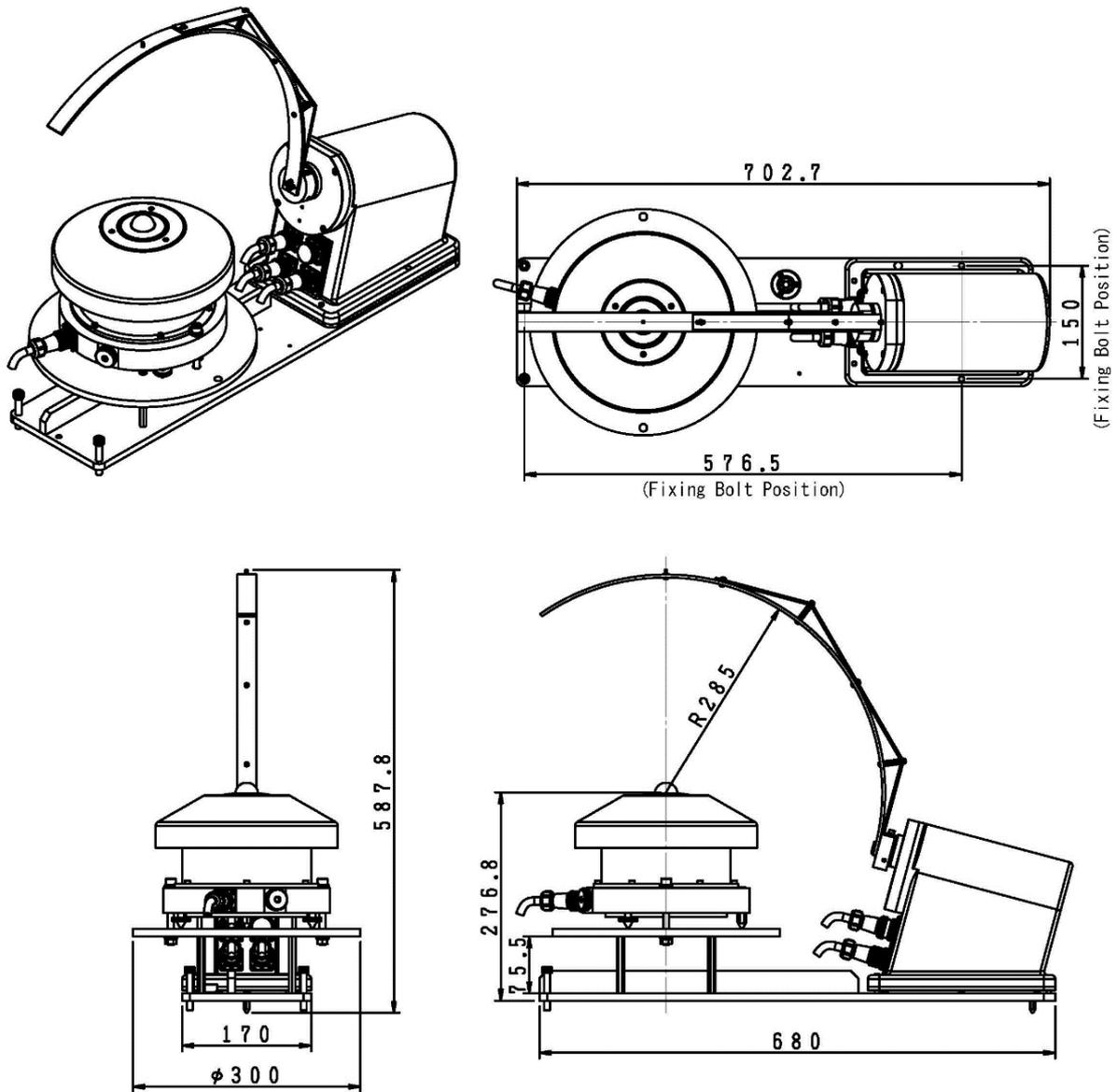


Figure 3-4-1. RSB-01 & MS-711

4. Standard Items & Accessories

Table 4-1. Package Contents

Standard Items	Qty.	Remarks
RSB-01 Main Unit	1	
Shadow Band	1	
Spectroradiometer Connection Cable	1	0.8m
GPS Antenna	1	
Communication Cable	1	Standard Length: 10m
Power Supply Cable	1	Standard Length: 10m
Fixing Bolts & Nuts	1 Set	M6 x 50 Bolt, Washer, Nut (3pcs each)
Inspection Report	1	
Instruction Manual	1	

Table 4-2. Accessories List

Option Items	Remarks
Communication Cable	Cable Length: 20m, 30m, 50m
Power Supply Cable	Cable Length: 20m, 30m, 50m

5. APPENDIX

5-1. Warranty and Liability

For warranty terms and conditions, contact EKO or your distributor for further details.

EKO guarantees that the product delivered to customer has been verified, checked and tested to ensure that the product meets the appropriate specifications. The product warranty is valid only if the product has been installed and used according to the directives provided in this instruction manual.

In case of any manufacturing defect, the product will be repaired or replaced under warranty. However, the warranty does not apply if:

- Any modification or repair was done by any person or organization other than EKO service personnel.
- The damage or defect is caused by not respecting the instructions of use as given on the product brochure or the instruction manual.

5-2. Environment

1. WEEE Directive 2002/96/EC (Waste Electrical and Electronic Equipment)



In August of 2005, the European Union (EU) implemented the EU WEEE Directive 2002/96/EC and later the WEEE Recast Directive 2012/19/EU requiring Producers of electronic and electrical equipment (EEE) to manage and finance the collection, reuse, recycling and to appropriately treat WEEE that the Producer places on the EU market after August 13, 2005. The goal of this directive is to minimize the volume of electrical and electronic waste disposal and to encourage re-use and recycling at the end of life.

EKO products are subject to the WEEE Directive 2002/96/EC. EKO Instruments has labeled its branded electronic products with the WEEE Symbol (figure Trash bin) to alert our customers that products bearing this label should not be disposed of in a landfill or with municipal or household waste in the EU.

If you have purchased EKO Instruments branded electrical or electronic products in the EU and are intending to discard these products at the end of their useful life, please do not dispose of them with your other household or municipal waste. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

2. RoHS Directive 2002/95/EC

EKO Instruments has completed a comprehensive evaluation of its product range to ensure compliance with RoHS Directive 2002/95/EC regarding maximum concentration values for substances. As a result all products are manufactured using raw materials that do not contain any of the restricted substances referred to in the RoHS Directive 2002/95/EC at concentration levels in excess of those permitted under the RoHS Directive 2002/95/EC, or up to levels allowed in excess of these concentrations by the Annex to the RoHS Directive 2002/95/EC.

5-3. CE Declaration



IMPORTANT USER INFORMATION



DECLARATION OF CONFORMITY

We: EKO INSTRUMENTS CO., LTD
1-21-8 Hatagaya Shibuya-ku,
Tokyo 151-0072 JAPAN

Declare under our sole responsibility that the product:

Product Name: Rotating Shadow Band
Model No.: RSB-01

To which this declaration relates is in conformity with the following harmonized standards of other normative documents:

Harmonized standards:

EN 61326-1:2013 Class A (Emission)
EN 61326-1:2013 (Immunity)
ETSI EN 303 413 V1.1.1

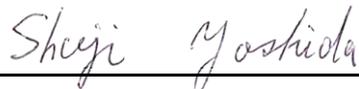
Following the provisions of the directive:

EMC-directive: 89/336/EEC
Amendment to the above directive: 93/68/EEC

Date: Apr. 12, 2019

Position of Authorized Signatory: Technology Research Institute Director

Name of Authorized Signatory: Shuji Yoshida

Signature of Authorized Signatory: 



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