

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS Z 9111 : 2022

(IEIJ/JSA)

Recommendation for roads lighting

ICS 93.080.40

Reference number : JIS Z 9111 : 2022 (E)

PROTECTED BY COPYRIGHT

17 S

Z 9111 : 2022

Date of Establishment: 1963-11-01

Date of Revision: 2022-08-22

Date of Public Notice in Official Gazette: 2022-08-22

Investigated by: Japanese Industrial Standards Committee

Standards Board for IEC area

Technical Committee on Electricity

JIS Z 9111 : 2022, First English edition published in 2024-01

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2024

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

HN

PROTECTED BY COPYRIGHT

Contents

		Page
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	General requirements for lighting	3
4.1	General principle	3
4.2	Brightness	3
4.3	Glare	3
4.4	Guidance	3
4.5	Light colour and colour rendering properties	4
4.6	Maintenance factor	4
4.7	Environmental sustainability	4
5	Illumination calculation by point method	4
5.1	Preparation for illumination calculation	4
5.2	Calculation of luminous intensity value	9
5.3	Calculation of photometric values	13
5.4	Calculation of quality characteristics	18
6	Illumination calculation by flux method	23
	Annex A (informative) Measuring method for road surface luminance	24

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Illuminating Engineering Institute of Japan (IEIJ)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act. This edition replaces the previous edition (**JIS Z 9111** : 1988), which has been technically revised.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

Recommendation for roads lighting

1 Scope

This Japanese Industrial Standard specifies the requirements for lighting necessary for safe and smooth road traffic and the methods for calculating the luminance and illuminance required for the design of road lighting (excluding tunnel lighting).

2 Normative references

Part or all of the provisions of the following standards, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS Z 8113 *Lighting vocabulary*

JIS Z 8726 *Method of specifying colour rendering properties of light sources*

JIS Z 9110 *General rules of recommended lighting levels*

JIS Z 9112 *Classification of fluorescent lamps and light emitting diodes by chromaticity and colour rendering property*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions, and those given in **JIS Z 8113** and **JIS Z 9110** apply.

3.1

road

path used for pedestrian and vehicular traffic, including on company premises

3.2

user of road

pedestrians and vehicle drivers using the road

3.3

visual environment

environment which is mainly treated qualitatively, including psychological evaluation, such as light conditions and the way objects are seen, and which in this Standard is mainly visible in the visual field of users of road

3.4

road surface illuminance

horizontal illuminance on the road surface

3.5