



Sistema de Cadastramento Unificado de Fornecedores - SICAF

Declaração

Declaramos para os fins exigidos na legislação, conforme documentação registrada no SICAF, que a situação do fornecedor no momento é a seguinte:

Dados do Fornecedor

CNPJ: 13.460.002/0001-05 DUNS®: 900803183
Razão Social: MORK TELECOM PRODUTOS E SERVICOS PARA TELECOMUNICACOES LTDA
Nome Fantasia: MORK SOLUCOES EM TELECOMUNICACOES
Situação do Fornecedor: Credenciado Data de Vencimento do Cadastro: 24/11/2025
Natureza Jurídica: SOCIEDADE EMPRESÁRIA LIMITADA
MEI: Não
Porte da Empresa: Micro Empresa

Ocorrências e Impedimentos

Ocorrência: Nada Consta
Impedimento de Licitar: Nada Consta
Ocorrências Impeditivas indiretas: Nada Consta
Vínculo com "Serviço Público": Nada Consta

Níveis cadastrados:

Automática: a certidão foi obtida através de integração direta com o sistema emissor. Manual: a certidão foi inserida manualmente pelo fornecedor.

I - Credenciamento**II - Habilitação Jurídica****III - Regularidade Fiscal e Trabalhista Federal**

Receita Federal e PGFN	Validade:	03/08/2025	Automática
FGTS	Validade:	22/05/2025	Automática
Trabalhista (http://www.tst.jus.br/certidao)	Validade:	06/08/2025	Automática

IV - Regularidade Fiscal Estadual/Distrital e Municipal

Receita Estadual/Distrital	Validade:	06/06/2025
Receita Municipal	Validade:	08/05/2025

VI - Qualificação Econômico-Financeira

Validade: 30/06/2025



CONTROLADORIA-GERAL DA UNIÃO

Certidão Negativa Correccional - Entes Privados (ePAD, CGU-PJ, CEIS, CNEP e CEPIM)

Consultado: **MORK TELECOM PRODUTOS E SERVICOS PARA TELECOMUNICACOES LTDA**

CPF/CNPJ: **13.460.002/0001-05**

Certifica-se que, em consulta aos sistemas ePAD e CGU-PJ e aos cadastros CEIS, CNEP e CEPIM, mantidos pela Corregedoria-Geral da União, **NÃO CONSTAM** registros de penalidades vigentes ou de procedimentos acusatórios em andamento, relativos ao CPF/CNPJ consultado.

Destaca-se que, nos termos da legislação vigente, os referidos cadastros consolidam informações prestadas pelos entes públicos, de todos os Poderes e esferas de governo.

Os Sistemas ePAD e CGU-PJ consolidam os dados sobre o andamento dos processos administrativos de responsabilização de entes privados no Poder Executivo Federal.

O Cadastro Nacional de Empresas Inidôneas e Suspensas (CEIS) apresenta a relação de empresas e pessoas físicas que sofreram sanções que implicaram a restrição de participar de licitações ou de celebrar contratos com a Administração Pública.

O Cadastro Nacional de Empresas Punidas (CNEP) apresenta a relação de empresas que sofreram quaisquer das punições previstas na Lei nº 12.846/2013 (Lei Anticorrupção).

O Cadastro de Entidades Privadas sem Fins Lucrativos Impedidas (CEPIM) apresenta a relação de entidades privadas sem fins lucrativos que estão impedidas de celebrar novos convênios, contratos de repasse ou termos de parceria com a Administração Pública Federal, em função de irregularidades não resolvidas em convênios, contratos de repasse ou termos de parceria firmados anteriormente.

Certidão emitida às 15:11:12 do dia 08/05/2025 , com validade até o dia 07/06/2025.

Link para consulta da verificação da certidão <https://certidoes.cgu.gov.br/>

Código de controle da certidão: 6LQXMiIXMhxPERHuLd1F

Qualquer rasura ou emenda invalidará este documento.



CONTROLADORIA-GERAL DA UNIÃO

Certidão Negativa Correccional - Entes Privados (ePAD, CGU-PJ, CEIS, CNEP e CEPIM)

Consultado: **MARIA IZABEL TULIO DE ALMEIDA**

CPF/CNPJ: **672.328.849-15**

Certifica-se que, em consulta aos sistemas ePAD e CGU-PJ e aos cadastros CEIS, CNEP e CEPIM, mantidos pela Corregedoria-Geral da União, **NÃO CONSTAM** registros de penalidades vigentes ou de procedimentos acusatórios em andamento, relativos ao CPF/CNPJ consultado.

Destaca-se que, nos termos da legislação vigente, os referidos cadastros consolidam informações prestadas pelos entes públicos, de todos os Poderes e esferas de governo.

Os [Sistemas ePAD e CGU-PJ](#) consolidam os dados sobre o andamento dos processos administrativos de responsabilização de entes privados no Poder Executivo Federal.

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Código de controle da certidão: hmBmO2i0Nefnz6YH0DcH

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PREFEITURA MUNICIPAL DE MARMELEIRO – PR

EDITAL DE PREGÃO Nº 90012/2025
 PROCESSO ADMINISTRATIVO ELETRÔNICO Nº 674/2025
 MODALIDADE: PREGÃO ELETRÔNICO
 TIPO: MENOR PREÇO POR ITEM

OBJETO: REGISTRO DE PREÇOS para futura e eventual contratação de empresa para fornecimento de luminárias de LED e braços de postes para manutenção da iluminação pública do Município de Marmeleiro, atendendo as necessidades do Departamento de Urbanismo

ANEXO II – PROPOSTA FINAL

A empresa MORK TELECOM – Produtos e Serviços para Telecomunicações Ltda, estabelecida na Rua Presidente Faria, 629, sala 01 CEP: 83.411-050 Bairro: Colônia Faria Cidade: Colombo UF: PR, Telefone: (41) 3666-6336, e-mail: licitacao@mork.com.br, inscrita no CNPJ sob nº 13.460.002/0001-05, neste ato representada por Maria Izabel Tulio de Almeida, cargo sócia administradora, RG 772.556-6, CPF 672.328.849-15, residente na Rua Presidente Faria, 654 CEP: 83.411-050 Bairro: Colônia Faria Cidade: Colombo UF: PR, propõe fornecer à Prefeitura Municipal de Marmeleiro, em estrito cumprimento ao previsto no Edital de Pregão Eletrônico nº 012/2025, conforme abaixo discriminado:

Item	Descrição do Produto	Und	Quant.	Valor Unitário Proposta R\$	Valor Total Proposta R\$	Marca	Modelo
3	Luminária LED (100W): Potência nominal mínima de 90W e máxima de 100W, tensão bivolt automática 127V/220V. Fluxo luminoso mínimo de 11.000 lúmens; eficiência luminosa mínima de 110 lúmens / W; índice e reprodução de cores (IRC) mínimo de 70%; temperatura de cor correlata (TCC) de 4500K a 5000K; fator de potência mínimo de 0,95; expectativa de vida útil de no mínimo 50.000h para L80; distorção harmônica total (THD) máxima de 10%; tecnologia dos LED's tipo SMD – Surface Mount Device ou COB; distribuição luminosa transversal tipo II, longitudinal média e/ou curta e controle de distribuição luminosa do tipo limitada ou totalmente limitada, conforme NBR 5101; corpo em alumínio injetado a alta pressão com pintura epóxi na cor cinza ou corpo extrudado; para instalação em postes e/ou braços de iluminação pública com diâmetro de 48,5mm a 60,3mm, fixação realizada por parafusos de aço inox, com controlador eletrônico para módulos de LED (driver) alojado (interno) ao corpo da luminária; conjunto óptico formado por conjuntos modulares; com tomada e relé fotoelétrico (com garantia de 5 anos) compatível com a luminária conforme NBR 5123 incorporada ao corpo da luminária; índice de proteção contra penetração de poeira e água IP 66 para o conjunto óptico e para o compartimento do driver; índice de proteção contra impactos de no mínimo IK08.	UND	675	181,02	122.188,50	RAJIX	RLP1005E
					122.188,50		

Valor Global Total: R\$ 122.188,50 (Cento e vinte e dois mil, cento e oitenta e oito reais e cinquenta centavos)

A validade desta proposta é de 60 (sessenta) dias corridos, contados da data da abertura da sessão pública de PREGÃO ELETRÔNICO.

A apresentação da proposta implicará na plena aceitação das condições estabelecidas neste edital e seus anexos.

Declaro que a proponente atende aos requisitos de habilitação e o declarante atesta a veracidade das informações prestadas (art. 63, I, da Lei nº 14.133/2021).

Responsável pela assinatura do Contrato ou da Ata de Registro de Preços:

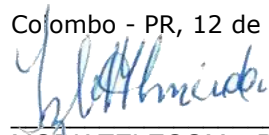
- ☐ Nome: Maria Izabel Tulio de Almeida
- ☐ CPF: 672.328.849-15
- ☐ RG nº: 772556-6 Expedido por: SSP/PR
- ☐ Endereço: Rua Presidente Faria, 654
- ☐ CEP: 83.411-050 Colombo UF: PR
- ☐ E-mail para envio do contrato: licitacao@mork.com.br

Dados Bancários:

- ☐ Banco: Brasil- AGÊNCIA: 1622-5 – CONTA CORRENTE: 23990-9

Nos preços ofertados já estão inclusos os tributos, fretes, taxas, seguros, encargos sociais, trabalhistas e todas as demais despesas necessárias à execução do objeto.

Colombo - PR, 12 de maio de 2025.



MORK TELECOM – Produtos e Serviços para Telecomunicações Ltda

CNPJ: 13.460.002/0001-05- Inscrição Estadual: 90756079-19

Maria Izabel Tulio de Almeida

Responsável Legal

CPF: 672.328.849-15

RG: 772.556-6

13.460.002.0001/05
MORK TELECOM - PRODUTOS E SERVIÇOS
PARA TELECOMUNICAÇÕES LTDA-ME
RUA PRESIDENTE FARIA, 629
COLÔNIA FARIA - CEP: 83411-050
COLOMBO - PR

PREFEITURA MUNICIPAL DE MARMELEIRO – PR

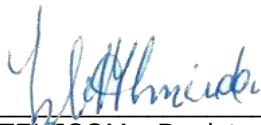
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OBJETO: REGISTRO DE PREÇOS para futura e eventual contratação de empresa para fornecimento de luminárias de LED e braços de postes para manutenção da iluminação pública do Município de Marmeleiro, atendendo as necessidades do Departamento de Urbanismo.

ANEXO III - DECLARAÇÃO DE GARANTIA

A empresa MORK TELECOM – Produtos e Serviços para Telecomunicações, com sede na Rua Presidente Faria, nº 629, sala 01 CEP: 83.411-050 Bairro: Colônia Faria Cidade: Colombo UF: PR, CNPJ nº 13.460.002/0001-05, por intermédio de sua representante legal a Sra. Maria Izabel Tulio de Almeida, inscrita no CPF nº 672.328.849-15, DECLARA, sob as penas da Lei, que se obriga a oferecer garantia da Luminárias de LED, objeto deste edital, conforme constante no Anexo I - Termo de Referência do presente Edital, pelo prazo de 05 (cinco) anos, contados da entrega do objeto, sendo que durante o período de garantia deve realizar substituições e reparos de toda e qualquer peça que apresente anomalia, vício ou defeito de fabricação, bem como, falhas ou imperfeições constatadas em suas características de operação, sem qualquer ônus para a administração.

Colombo - PR, 12 de maio de 2025.



MORK TELECOM – Produtos e Serviços para Telecomunicações Ltda
CNPJ:13.460.002/0001-05- Inscrição Estadual: 90756079-19

Maria Izabel Tulio de Almeida

Responsável Legal
CPF: 672.328.849-15
RG: 772.556-6

13.460.002.0001/05
MORK TELECOM - PRODUTOS E SERVIÇOS
PARA TELECOMUNICAÇÕES LTDA-ME
RUA PRESIDENTE FARIA, 629
COLÔNIA FARIA - CEP: 83411-050
COLOMBO - PR



LUMINÁRIA PÚBLICA LED

30-50-70-90-100-120-150-180-200-220W



5 ANOS DE GARANTIA



VIDA ÚTIL

108.000H



90 ~ 280 VAC

90 ~ 280VAC



PROTEÇÃO IP67



CLASSIFICAÇÃO DE EFICIÊNCIA ENERGÉTICA



DIMERIZÁVEL

DIMERIZAÇÃO

A iluminação pública é um aspecto importante da infraestrutura urbana e pode ter um impacto significativo na segurança e no bem-estar dos cidadãos. As **LUMINARIAS PÚBLICAS LED da RAJIX ENERGY** são uma opção popular para iluminação pública, pois oferecem vários benefícios em comparação com as tecnologias de iluminação convencionais.

Em termos de tecnologia, as luminárias **LUMINARIAS PÚBLICAS LED da RAJIX ENERGY** são projetadas para serem mais eficientes em termos de energia do que as lâmpadas VAPOR DE SÓDIO ou VAPOR METÁLICO. Elas usam diodos emissores de luz (LEDs) para produzir luz, que é mais brilhante e mais uniforme do que a luz produzida por lâmpada. Além disso, as luminárias LED têm uma vida útil mais longa do que as lâmpadas convencionais, o que significa que elas precisam ser substituídas com menos frequência.

Em relação à durabilidade, as **LUMINARIAS PÚBLICAS LED da RAJIX ENERGY** são construídas para durar muito tempo, com uma vida útil estimada em até 108.000 horas. Além disso, as luminárias LED são mais resistentes a vibrações e impactos do que as lâmpadas convencionais, o que as torna ideais para uso em áreas públicas movimentadas.

Destaques do produto

- **5 Anos de garantia**
- **Índice de proteção IP67 / Resistência IK09**
- **Estrutura em alumínio injetado**
- **Certificada no INMETRO**
- **Pintura eletrostática a pó**
- **Vida útil de 108.000 horas**

* Imagens meramente ilustrativas

LUMINÁRIA PÚBLICA LED

POTÊNCIA

30-50-70-90-100-120-150-180-200-220W

INFORMAÇÕES TÉCNICAS

CARACTERÍSTICAS ELÉTRICAS

Tipo do LED	LED SMD 3030
Tensão de alimentação	90 ~ 280 VAC
Frequência de operação	50Hz / 60Hz
Fator de potência	≥0,98
THD	≤10%
Driver de alimentação	Invólucro em Alumínio anodizado / Proteção IP67 <i>* Dimerizável por padrão (0-10V)</i>
DPS (Classe 1)	DPS externo ao driver 10KV / 10KA <i>* Ligação padrão em série</i>
Base para Relé	3 pinos / 7 pinos
Alimentação	Cabo PP 3x1,5mm ² (L; L/N; G)

CARACTERÍSTICAS ÓPTICAS

Abertura de lente	Tipol II Média
Temperatura de cor	4000K / 5000K
IRC	>70
Vida útil	>108.000h (L 70) <i>* Comprovada através de ensaio LM-80 e projeção TM-21</i>

CARACTERÍSTICAS CONSTRUTIVAS

Índice de Proteção	IP67
Resistência mecânica	IK09
Temperatura de operação	-40°C - +50°C
Instalação	Bocal para fixação em braços de Ø48mm até Ø65mm, angulação de -5° até +5°
Material do corpo	Alumínio injetado sob pressão <i>* A.A. 369.00</i>
Pintura	Pintura eletrostática a pó com proteção UV <i>* Pintura Epóxi Poliéster</i>
Cores	Cinza
Material da lente	Lente óptica em policarbonato
Material dos elementos de fixação	Aço inoxidável 304

Norma de referencia:

Portaria 62-2022

Numero de registro INMETRO:

015786/2024

LUMINÁRIA PÚBLICA LED

POTÊNCIA

30-50-70-90-100-120-150-180-200-220W

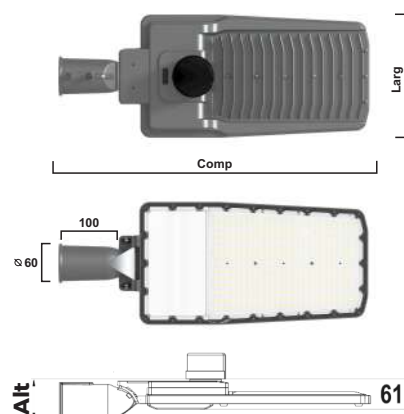
MODELOS DISPONÍVEIS

CÓDIGO	TCC	CORRENTE NOMINAL	POTÊNCIA	EFICIÊNCIA	FLUXO	PESO
LP0304V	4000K	0.45A	30W	180 lm/W	5400 lm	2,45kg
LP0504V		0.45A	50W	180 lm/W	9000 lm	2,45kg
LP0704V		0.63A	70W	180 lm/W	12600 lm	2,45kg
LP0904V		0.81A	90W	180 lm/W	16200 lm	3,15kg
LP1004V		0.90A	100W	180 lm/W	18000 lm	3,15kg
LP1204V		1.08A	120W	180 lm/W	21600 lm	3,50kg
LP1504V		1.35A	150W	180 lm/W	27000 lm	3,50kg
LP1804V		1.62A	180W	180 lm/W	32400 lm	4,50 kg
LP2004V		1.83A	200W	180 lm/W	36000 lm	4,50kg
LP2204V		1.98A	220W	180 lm/W	39600 lm	4,50kg
LP0305V	5000K	0.45A	30W	180 lm/W	5400 lm	2,45kg
LP0505V		0.45A	50W	180 lm/W	9000 lm	2,45kg
LP0705V		0.63A	70W	180 lm/W	12600 lm	2,45kg
LP0905V		0.81A	90W	180 lm/W	16200 lm	3,15kg
LP1005V		0.90A	100W	180 lm/W	18000 lm	3,15kg
LP1205V		1.08A	120W	180 lm/W	21600 lm	3,50kg
LP1505V		1.35A	150W	180 lm/W	27000 lm	3,50kg
LP1805V		1.62A	180W	180 lm/W	32400 lm	4,50 kg
LP2005V		1.83A	200W	180 lm/W	36000 lm	4,50kg
LP2205V		1.98A	220W	180 lm/W	39600 lm	4,50kg

* Valores de eficiência podem variar em $\pm 10\%$ com relação ao valor nominal

Desenho técnico e Dimensões

	Comp	Larg	Alt
30W/50W	423	195	73
70W/90W/100W	501	210	73
120W/150W	597	247	73
180W/200W/220W/240W	686	300	76





ver. - 2024-01-31

CERTIFICADO DE GARANTIA

A **RAJIX** garante ao consumidor do produto adquirido, a garantia pelo período previsto no Código de Defesa do Consumidor de 60 (sesenta) meses. Garantia com validade a contar da data de emissão da Nota Fiscal de venda e conforme condições descritas neste termo.

A **RAJIX** poderá, a qualquer tempo, mediante aviso por escrito em carta AR ou por e-mail enviado ao CLIENTE, dar por rescindido de pleno direito a garantia no caso de constatação do descumprimento de qualquer um dos termos listados no item CONDIÇÕES DA GARANTIA, deste termo.

1. **PRAZO DE COBERTURA**

- 1.1. O prazo de cobertura da garantia começa a ser contado a partir da data de emissão da nota fiscal.

2. **CONDIÇÕES DE GARANTIA**

A garantia fornecida pela RAJIX é limitada, e torna-se inválida ou nula caso seja identificada alguma das condições elencadas:

- 2.1. Defeitos que não sejam provenientes de fabricação.
- 2.2. Operação inadequada ou em desconformidade com as recomendações do Manual de Instruções, ou do Manual de Especificações Técnicas do produto.
- 2.3. Instalação do produto em rede elétrica em desacordo com o range de tensão nominal do equipamento.
- 2.4. Modificações, adaptações, abertura do produto ou serviços de manutenção realizados por empresas ou pessoas não autorizadas.
- 2.5. Danos físicos causados ao produto, como, por exemplo, queda, acidente, transportes ou armazenamento inadequados.
- 2.6. Danos causados por intempéries (descargas atmosféricas, vendavais etc.).
- 2.7. Produtos enviados em condições de notória avaria.
- 2.8. Perdas e danos, lucros cessantes, manutenção de caráter preventivo ou qualquer perda resultante do mal uso e da incapacidade do uso do produto, nem custos de reparação ou substituição de qualquer outro bem que seja danificado.

- 2.9. não se houver por eles responsabilizado. O caso fortuito ou força maior verifica-se no fato necessário, cujos efeito não era possível evitar ou impedir.
- 2.10. Instalação do produto em temperatura ambiente fora dos limites definidos na especificação técnica do produto.
- 2.11. Utilização do produto em ambiente diferente daquele para o qual foi desenvolvido
- 2.12. Oxidação dos terminais de contato da tomada 3 ou 7 pinos do produto devido à exposição a umidade, quando presente esse tipo de equipamento no produto.
- 2.13. Quando aplicável DPS (dispositivo de proteção de surto), e partes de vidro, como refratores, não estão cobertos pelo termo de garantia.
- 2.14. Pintura do corpo, da lente ou qualquer outra parte da luminária, assim como eventuais danos à lente do produto decorrentes do mau uso (riscos, ranhuras, fissuras, manchas etc.).
- 2.15. A instalação elétrica em desacordo com a (i) Norma ABNT NBR 5410; (ii) Norma ABNT NBR 5419; (iii) AVCB (Auto de Vistoria do Corpo de Bombeiros) Instrução Técnica número 41/2011, válido durante todo o período de utilização do Produto; (iv) Lei 11.337 de 23 de julho de 2.006 que "Determina a obrigatoriedade de as edificações possuírem sistema de aterramento e instalações elétricas compatíveis com a utilização de condutor-terra de proteção, bem como torna obrigatória a existência de condutor- terra de proteção nos aparelhos elétricos que especifica".

3. TÓPICOS GERAIS

- 3.1. Esta garantia inclui a reparação do produto em caso de defeito de fabricação que o torne inadequado ao uso, e à substituição de partes e/ou peças defeituosas de fábrica, sempre mantendo as especificações originais.
- 3.2. A Garantia concedida somente será válida se as obrigações financeiras assumidas pelo cliente estiverem em dia e/ou quitadas.
- 3.3. Os custos de mão de obra para instalação/desinstalação do Produto não estão cobertos por esta Garantia.
- 3.4. Produtos expostos a agentes fertilizantes, ácidos e/ou outros agentes altamente corrosivos terão tempo de garantia reduzido a um total de 24 meses.
- 3.5. Nenhum distribuidor ou revendedor está autorizado a alterar, modificar e/ou estender os termos e prazos da Garantia Contratual ou Garantia Total.
- 3.6. Todo e qualquer dispositivo (Ex.: shorting cap, relé-fotoelétrico, módulo de tele gestão, dimmer etc.) de fornecedores terceiros, que venha a ser integrado ao produto, deve ser novo e possuir grau de proteção IP igual ou superior.

- 3.7. Caso o produto que apresente defeito tenha sido descontinuado ou não esteja disponível, poderemos substituí-lo por um similar ou superior, ainda que apresente diferenças em termos de design e especificação técnica.
- 3.8. Esta garantia é exclusiva e substitui quaisquer outras garantias implícitas ou explícitas, incluindo, mas não se limitando a, garantias de comercialização ou adequação a um determinado propósito. Em nenhum caso a RAJIX será responsável por quaisquer danos indiretos, incidentais ou consequentes decorrentes do uso do produto.
- 3.9. A RAJIX se reserva o direito de atualizar o presente termo de garantia, independentemente de comunicação prévia.

4. MANUTENÇÃO E CUIDADOS

- 4.1. A fim de evitar que haja uma redução no fluxo luminoso causada por meios externos, recomenda-se que seja realizada limpeza nas partes óticas das luminárias de maneira periódica, usando somente pano umedecido e detergente neutro.
- 4.2. Recomenda-se remoção e limpeza em caso de acúmulo de material na área externa da luminária que é responsável pela dissipação térmica, a fim de evitar redução na vida útil do produto.

5. PROCEDIMENTO

- 5.1. Caso o produto apresente algum defeito originário de fábrica, é de responsabilidade do cliente entrar em contato com a RAJIX para relatar o ocorrido. O contato pode ser feito a partir dos seguintes canais disponibilizados:
 - Em nosso site, através do link <https://rajix.com.br/contato/>
 - Via e-mail em rajix@rajix.com.br;
 - Contato via telefone com o SAC, no número (41) 98442-7900, nos horários de segunda à sexta, das 8h00 às 12h00, e das 13h30 às 17h30.
- 5.2. Todo e qualquer procedimento de garantia prestado pela RAJIX será feito somente mediante apresentação da Nota Fiscal de aquisição do produto, a fim de verificar se o produto está dentro do prazo de cobertura de garantia.
- 5.3. Para realizar o envio do produto, o cliente deve emitir Nota Fiscal de Remessa em Garantia, e enviar para rajix@rajix.com.br.
- 5.4. Quando em garantia, o envio do produto e custos atrelados, são de responsabilidade do CLIENTE. O retorno do produto, bem como seus custos, será realizado pela RAJIX.

6. REPAROS APÓS TÉRMINO DO PERÍODO DE GARANTIA, OU DE ITENS EXCLUSOS DA GARANTIA

- 6.1. Em casos de reparo de equipamentos fora do prazo de cobertura, ou não contemplados por garantia por quaisquer motivos citados neste termo, o reparo do equipamento será realizado somente após a aprovação de orçamento de reparo por parte do cliente.
- 6.2. Em todos os casos em que o produto não estiver acobertado pela garantia o envio e recebimento do produto, bem como todos os custos atrelados, são de responsabilidade do cliente.

7. CONDIÇÕES DE DEVOLUÇÃO

- 7.1. Para condições de devolução, a mesma deve ser feita dentro do prazo de até 7(sete) dias após o recebimento do produto.
- 7.2. A mercadoria deve retornar nas mesmas condições do ato de recebimento, com sua embalagem original, lacrada, sem rasuras, completa, com todos os manuais e acessórios que fazem parte do conjunto.
- 7.3. O produto não poderá ter sido usado/energizado.

As informações contidas neste documento estão sujeitas a alteração sem aviso prévio.

CERTIFICADO / CERTIFICATE BRA25/00267

SGS Order Ref. BRA-CERT250200145-01 | Family Ref.: 001



Empresa Solicitante / Applicant

Rajix Energy Ltda.

CNPJ: 57.171.302/0001-40

Rua XV de Novembro, 964 - Conj 30 Andar 03 Cond Inter Walter Spreng, Centro, 80.060-000, Curitiba, PR, Brazil

Empresa Fabricante / Manufacturer

Normas de Referência / Standards

Portaria INMETRO n.º 62, de 17 de fevereiro de 2022 -

Escopo da Certificação / Scope of Certification

Luminaria LED para Vias Públicas / Road and street luminaire with LED module



Data de emissão / Issue date

12/03/2025

Data de revisão / Revision date

12/03/2025

Data de validade / Valid until

12/03/2029

Modelo de Certificação / Certification Model: 5

A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da SGS previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do INMETRO.

The validity of this Certificate depends upon the fulfillment of the surveillance process and the resolution of any non eventual non conformity, in accordance with the guidelines from SGS foreseen in specific RAC. To check the updated condition and regularity of this Certificate, INMETRO's database for certified products and services shall be consulted.

Autorizado por

Luiz Ferri

Business Unit Sr Manager

SGS do Brasil Ltda.

CNPJ: 33.182.809/0083-87

Av. Piracema, 1341 - Galpão Horizon - 2º Andar, Tamboré

CEP 06460-030, Barueri/SP, Brasil

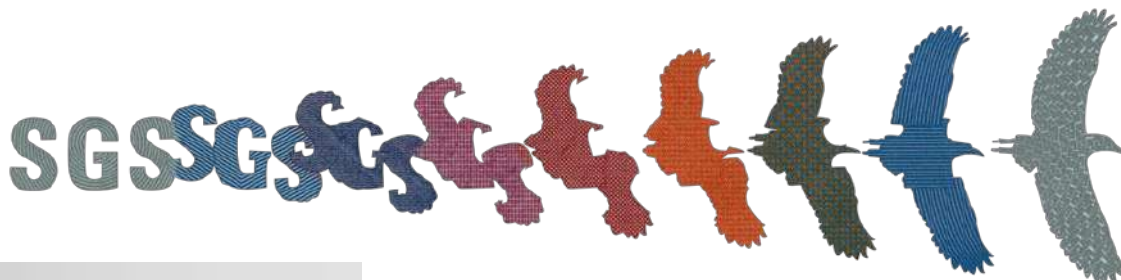
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Certificado de Conformidade válido somente acompanhado das páginas de 1 a 7

This Conformity Certificate is valid only with the pages 1 to 7

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This certificate is issued by the company under its General Conditions for Certification Services accessible at www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitations of liability defined therein and in the Test Report here above mentioned which findings are reflected in this Certificate. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Relatórios de Ensaio / Test Report References

Laboratório/ Laboratory	Número do Relatórios/ Test Report No	Data de emissão/ Issue Date
SGS Guangzhou	GZEE240300111201	18/10/2024
SGS Guangzhou	GZEM240900564101	14/10/2024

Data da Auditoria de Fábrica / Factory Inspection Date: 08/04/2024**Data da Auditoria de SAC / Customer Services Inspection Date:** 17/12/2024**Histórico de Revisões / Revision History**

Revisão 00 - 12/03/2025 - Inicial

Informações Adicionais / Additional Information

-

Família / Family

Luminária LED/Zhongshun - 3030/IP66/100000h

Especificações do Produto / Product Specifications

Marca / Trademark	Modelo / Model	Descrição Técnica / Technical Description	Código de Barras / Bar Code
RAJIX	YR05045-30-H	Luminária Pública LED; 50W; 7500lm; 150lm/W; FP>0,92; 3000K; 100-260V; 50/60Hz	7898727313601
RAJIX	YR05045-40-H	Luminária Pública LED; 50W; 7500lm; 150lm/W; FP>0,92; 4000K; 100-260V; 50/60Hz	7898727313656
RAJIX	YR05045-50-H	Luminária Pública LED; 50W; 7500lm; 150lm/W; FP>0,92; 5000K; 100-260V; 50/60Hz	7898727313700
RAJIX	YR05045-60-H	Luminária Pública LED; 50W; 7500lm; 150lm/W; FP>0,92; 6500K; 100-260V; 50/60Hz	7898727313755
RAJIX	YR10045-30-H	Luminária Pública LED; 100W; 15000lm; 150lm/W; FP>0,92; 3000K; 100-260V; 50/60Hz	7898727313618
RAJIX	YR10045-40-H	Luminária Pública LED; 100W; 15000lm; 150lm/W; FP>0,92; 4000K; 100-260V; 50/60Hz	7898727313663
RAJIX	YR10045-50-H	Luminária Pública LED; 100W; 15000lm; 150lm/W; FP>0,92; 5000K; 100-260V; 50/60Hz	7898727313717
RAJIX	YR10045-60-H	Luminária Pública LED; 100W; 15000lm; 150lm/W; FP>0,92; 6500K; 100-260V; 50/60Hz	7898727313762

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RAJIX	YR15045-30-H	Luminária Pública LED; 150W; 22500lm; 150lm/W; FP>0,92; 3000K; 100-260V; 50/60Hz	7898727313625
RAJIX	YR15045-40-H	Luminária Pública LED; 150W; 22500lm; 150lm/W; FP>0,92; 4000K; 100-260V; 50/60Hz	7898727313670
RAJIX	YR15045-50-H	Luminária Pública LED; 150W; 22500lm; 150lm/W; FP>0,92; 5000K; 100-260V; 50/60Hz	7898727313724
RAJIX	YR15045-60-H	Luminária Pública LED; 150W; 22500lm; 150lm/W; FP>0,92; 6500K; 100-260V; 50/60Hz	7898727313779
RAJIX	YR20045-30-H	Luminária Pública LED; 200W; 30000lm; 150lm/W; FP>0,92; 3000K; 100-260V; 50/60Hz	7898727313632
RAJIX	YR20045-40-H	Luminária Pública LED; 200W; 30000lm; 150lm/W; FP>0,92; 4000K; 100-260V; 50/60Hz	7898727313687
RAJIX	YR20045-50-H	Luminária Pública LED; 200W; 30000lm; 150lm/W; FP>0,92; 5000K; 100-260V; 50/60Hz	7898727313731
RAJIX	YR20045-60-H	Luminária Pública LED; 200W; 30000lm; 150lm/W; FP>0,92; 6500K; 100-260V; 50/60Hz	7898727313786
RAJIX	YR24045-30-H	Luminária Pública LED; 240W; 36000lm; 150lm/W; FP>0,92; 3000K; 100-260V; 50/60Hz	7898727313649
RAJIX	YR24045-40-H	Luminária Pública LED; 240W; 36000lm; 150lm/W; FP>0,92; 4000K; 100-260V; 50/60Hz	7898727313694
RAJIX	YR24045-50-H	Luminária Pública LED; 240W; 36000lm; 150lm/W; FP>0,92; 5000K; 100-260V; 50/60Hz	7898727313748
RAJIX	YR24045-60-H	Luminária Pública LED; 240W; 36000lm; 150lm/W; FP>0,92; 6500K; 100-260V; 50/60Hz	7898727313793

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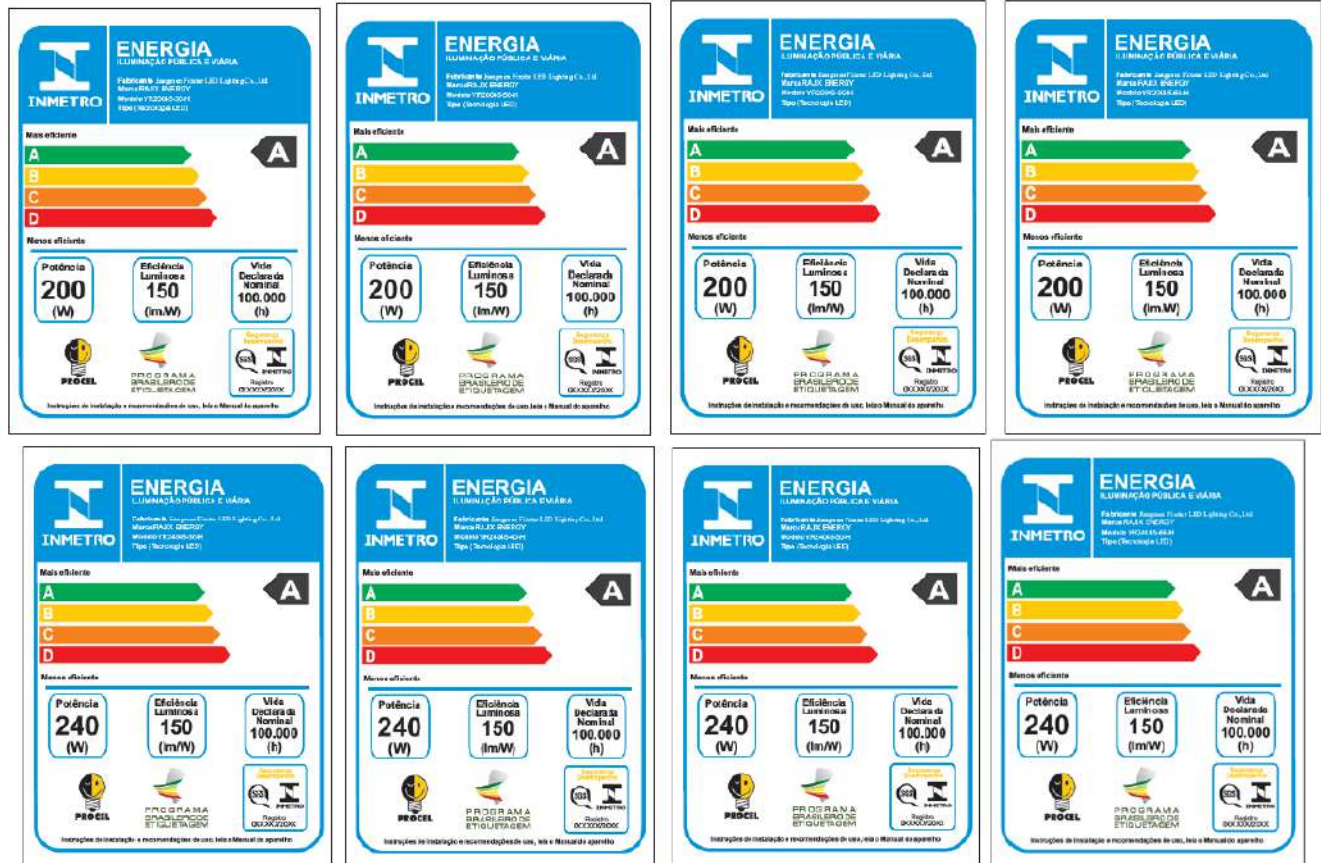
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**Certificação
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OCP 0040



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1 - DENOMINAÇÃO COMERCIAL	
MARCA	RAJIX
FORNECEDOR	Rajix Comercial Ltda.
FABRICANTE	

2 - IDENTIFICAÇÃO DA FAMÍLIA	
FAMÍLIA	Luminária LED/Zhongshun - 3030/IP66/100000h
MARCA/MODELO DO LED	Zhongshun - 3030
TIPO DA LUMINÁRIA	Luminária LED
VIDA DECLARADA (h)	100000h

(*) Composição do Código de Família:

LUMINÁRIA TECNOLOGIA LED: Tecnologia de luminária / Marca e Modelo do LED / IP da luminária / Vida nominal

LUMINÁRIA COM LÂMPADA DESCARGA: Tecnologia de luminária / Tipo de lâmpada / Tipo de refletor e difusor / IP da Luminária / Vida nominal

CÓDIGO BARRAS	MODELO	TENSÃO DE ENSAIO (V)	FREQ.(Hz)	POTÊNCIA(W)	FATOR DE POTÊNCIA	FLUXO LUMINOSO (lm)	RENDIMENTO ÓTICO (***)(lm/W)	EE (**)(lm/W)	IRC	TCQ(K)	Nº RELATÓRIO ENSAIO/LABORATÓRIO
7898727313601	YR05045-30-H	127-220	50/60	50	>0,92	7500	-	150	≥70	3000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313656	YR05045-40-H	127-220	50/60	50	>0,92	7500	-	150	≥70	4000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313700	YR05045-50-H	127-220	50/60	50	>0,92	7500	-	150	≥70	5000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313755	YR05045-60-H	127-220	50/60	50	>0,92	7500	-	150	≥70	6500	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313618	YR10045-30-H	127-220	50/60	100	>0,92	15000	-	150	≥70	3000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313663	YR10045-40-H	127-220	50/60	100	>0,92	15000	-	150	≥70	4000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313717	YR10045-50-H	127-220	50/60	100	>0,92	15000	-	150	≥70	5000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313762	YR10045-60-H	127-220	50/60	100	>0,92	15000	-	150	≥70	6500	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313625	YR15045-30-H	127-220	50/60	150	>0,92	22500	-	150	≥70	3000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313670	YR15045-40-H	127-220	50/60	150	>0,92	22500	-	150	≥70	4000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313724	YR15045-50-H	127-220	50/60	150	>0,92	22500	-	150	≥70	5000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313779	YR15045-60-H	127-220	50/60	150	>0,92	22500	-	150	≥70	6500	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313632	YR20045-30-H	127-220	50/60	200	>0,92	30000	-	150	≥70	3000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313687	YR20045-40-H	127-220	50/60	200	>0,92	30000	-	150	≥70	4000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313731	YR20045-50-H	127-220	50/60	200	>0,92	30000	-	150	≥70	5000	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313786	YR20045-60-H	127-220	50/60	200	>0,92	30000	-	150	≥70	6500	GZEE2403001112 01:GZEM240900 564101/SGS G2
7898727313649	YR24045-30-H	127-220	50/60	240	>0,92	36000	-	150	≥70	3000	GZEE2403001112 01:GZEM240900 564101/SGS G2

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Certificação
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OCP 0040

7898727313694	YR24045-40-H	127-220	50/60	240	>0,92	36000	-	150	≥70	4000	GZEE2403001112 01;GZEM240900 564101/SGS G2
7898727313748	YR24045-50-H	127-220	50/60	240	>0,92	36000	-	150	≥70	5000	GZEE2403001112 01;GZEM240900 564101/SGS G2
7898727313793	YR24045-60-H	127-220	50/60	240	>0,92	36000	-	150	≥70	6500	GZEE2403001112 01;GZEM240900 564101/SGS G2

(**) EE – Eficiência Energética. (***) Aplicável somente para Luminárias com lâmpadas de descarga

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CERTIFICADO DE AVALIAÇÃO DA CONFORMIDADE
 EMITIDO POR ORGANISMO DE CERTIFICAÇÃO DE PRODUTOS ACREDITADO PELA CGCRE
 CONFORMITY ASSESSMENT CERTIFICATE ISSUED BY A CERTIFICATION BODY ACCREDITED BY CGCRE

Certificado Nº: NCC 24.10993 Revisão nº/revision no.: 0
Certificate No.

Data de emissão: 17/09/2024 Certificado de Conformidade válido somente acompanhado das páginas de 1 a 6
Issued date: Certificate valid only accompanied of pages 1 through 6

Data de validade: 17/09/2028
Validity date:

Solicitante: **RAJIX ENERGY LTDA / RAJIX ENERGY**
Applicant: R. XV de Novembro, nº 964, Conj 30 andar 03 cond. Inter Walter Spreng, Centro - Curitiba/PR - **Brasil**
 CEP: 80.060-000 / CNPJ: 57.171.302/0001-40

Produto: **Luminárias para a Iluminação Pública Viária com Tecnologia LED**
Product:

Marca: **RAJIX**
Brand:

Família: **SMD / TS1-E30FL / IP67 / 108000h**
Family:

Modelo: **LP0304V, LP0504V, LP0704V, LP0904V, LP1004V, LP1204V, LP1504V, LP1804V, LP2004V, LP2204V, LP0305V, LP0505V, LP0705V, LP0905V, LP1005V, LP1205V, LP1505V, LP1805V, LP2005V, LP2205V.**
Model:

Fabricante
 (Unidade Fabril):
Manufacturer
(Manufacturing locations):

Aprovado para emissão em conformidade com o regulamento e normas aplicáveis
Approved for issuing in conformity with the applicable regulation and standards

Mariana Pinceli Chaves
 Gerente de Processos
Process Manager

Certificado emitido conforme requisitos da avaliação da conformidade e regulamento técnico da qualidade para Luminárias para a Iluminação Pública Viária, anexos à Portaria Inmetro nº. 62, de 17 de Fevereiro de 2022.

Certificate issued in accordance to Brazilian requirements for Lamps for street lighting, attached to Inmetro Ordinance nº. 62, of February 17th, 2022.

1. Este certificado somente pode ser reproduzido com todas as folhas.
This certificate may only be reproduced in full.
2. A situação e autenticidade deste certificado podem ser verificadas no website oficial do Inmetro.
The status and authenticity of this certificate can be verified by visiting Inmetro website.
3. Este certificado de conformidade foi emitido por um organismo de certificação acreditado pela Cgcre - Coordenação Geral de Acreditação.
This certificate of conformity was issued by a product certification body accredited by Cgcre.

Certificado emitido por:
Certificate issued by:

NCC Certificações do Brasil Ltda.
 Acreditação Cgcre nº 0034 (16/10/2003)
 Av. Orosimbo Maia, 360, Campinas, SP, CEP 13010-211
 CNPJ nº 16.587.151/0001-28
 www.nccgroup.com.br





CERTIFICADO DE AVALIAÇÃO DA CONFORMIDADE

EMITIDO POR ORGANISMO DE CERTIFICAÇÃO DE PRODUTOS ACREDITADO PELA CGCRE
CONFORMITY ASSESSMENT CERTIFICATE ISSUED BY A CERTIFICATION BODY ACCREDITED BY CGCRE

Certificado Nº: NCC 24.10993
Certificate No.

Revisão nº/revision no.: 0

Data de emissão: 17/09/2024
Issued date:

Certificado de Conformidade válido somente acompanhado das páginas de 1 a 6
Certificate valid only accompanied of pages 1 through 6

Detentor da Tecnologia: N/A
Technology Owner:

Este certificado é emitido como uma verificação que amostras, representativas da linha de produção, foram avaliadas e ensaiadas e atenderam às normas listadas abaixo, e que o sistema de gestão da qualidade do fabricante, relativo aos produtos cobertos por este certificado, foi avaliado e atendeu aos requisitos de sistema da qualidade da Portaria Inmetro. Este certificado é concedido sujeito às condições previstas na Portaria Inmetro.

This certificate is issued as verification that production representative samples were assessed and tested and found compliant to the standards listed below; and that manufacturer's quality system management related to the product covered by this certificate, was assessed and found to comply to Inmetro quality system management requirements. This certificate is granted subject to the conditions as set out in Inmetro Rules.

NORMAS:

STANDARDS:

ABNT NBR 15129:2012 / ABNT NBR 5101:2012 / ABNT NBR 5123:2016 / ABNT NBR 16026:2012 / ABNT NBR IEC 60238:2005 / ABNT NBR IEC 60598-1:2010 / ABNT NBR IEC 60662:1997 / ABNT NBR IEC 62262:2015 / ABNT NBR IEC 61347-2-13:2012 / ASTM G154 / CISPR 15:2013 / BS EN 55015:2013 / IEC 61000-3-2:2014 / IES TM-21-11 / IESNA LM-79-08 / IESNA LM-80-08

Este certificado **não** indica conformidade com outros requisitos de segurança e desempenho do que os expressamente incluídos nas normas listadas acima.

*This certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the standards listed above.*

Registro de avaliação da conformidade técnica (apresenta a verificação dos documentos utilizados para análise e as conclusões para a recomendação da certificação):

Technical conformity assessment register (presents the verification of the documents used for analysis and recommendation of certification conclusions):

Fluig: 267790

Processo: 91991/24.1

Data da Auditoria: 13/08/2024

Relatório(s) de ensaio:

Test report(s):

Nº do relatório	Laboratório	Norma	Data de emissão
SKT2024-0833-00	Vkan Certification & Testing Co., Ltd.	CISPR 15:2013 + IEC 61000-3-2:2014	20/08/2024
SKT2024-0835-00	Vkan Certification & Testing Co.,Ltd. (CVC)	Ordinance No.62-2022	20/08/2024



CERTIFICADO DE AVALIAÇÃO DA CONFORMIDADE
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 CONFORMITY ASSESSMENT CERTIFICATE ISSUED BY A CERTIFICATION BODY ACCREDITED BY CGCRE

Certificado Nº: NCC 24.10993
 Certificate No.

Revisão nº/revision no.: 0

Data de emissão: 17/09/2024
 Issued date:

Certificado de Conformidade válido somente acompanhado das páginas de 1 a 6
 Certificate valid only accompanied of pages 1 through 6

PRODUTO:

PRODUCT:

Produtos e sistemas abrangidos por este certificado estão especificados como segue:

Products and systems covered by this certificate are specified as follows:

Marca <i>Brand</i>	Modelo <i>Model</i>	Descrição técnica do modelo <i>Model's Technical Description</i>	Código de barras <i>Bar code</i>
RAJIX	LP0304V	- 30 W 5400 lm 180 lm/W >0,98 4000 K	7898727312840
RAJIX	LP0504V	- 50 W 9000 lm 180 lm/W >0,98 4000 K	7898727312857
RAJIX	LP0704V	- 70 W 12600 lm 180 lm/W >0,98 4000 K	7898727312864
RAJIX	LP0904V	- 90 W 16200 lm 180 lm/W >0,98 4000 K	7898727312871
RAJIX	LP1004V	- 100 W 18000 lm 180 lm/W >0,98 4000 K	7898727312888
RAJIX	LP1204V	- 120 W 21600 lm 180 lm/W >0,98 4000 K	7898727312895
RAJIX	LP1504V	- 150 W 27000 lm 180 lm/W >0,98 4000 K	7898727312901
RAJIX	LP1804V	- 180 W 32400 lm 180 lm/W >0,98 4000 K	7898727312918
RAJIX	LP2004V	- 200 W 36000 lm 180 lm/W >0,98 4000 K	7898727312925
RAJIX	LP2204V	- 220 W 39600 lm 180 lm/W >0,98 4000 K	7898727312932
RAJIX	LP0305V	- 30 W 5400 lm 180 lm/W >0,98 5000 K	7898727312949
RAJIX	LP0505V	- 50 W 9000 lm 180 lm/W >0,98 5000 K	7898727312956
RAJIX	LP0705V	- 70 W 12600 lm 180 lm/W >0,98 5000 K	7898727312963
RAJIX	LP0905V	- 90 W 16200 lm 180 lm/W >0,98 5000 K	7898727312970
RAJIX	LP1005V	- 100 W 18000 lm 180 lm/W >0,98 5000 K	7898727312987
RAJIX	LP1205V	- 120 W 21600 lm 180 lm/W >0,98 5000 K	7898727312994
RAJIX	LP1505V	- 150 W 27000 lm 180 lm/W >0,98 5000 K	7898727313007
RAJIX	LP1805V	- 180 W 32400 lm 180 lm/W >0,98 5000 K	7898727313014
RAJIX	LP2005V	- 200 W 36000 lm 180 lm/W >0,98 5000 K	7898727313021
RAJIX	LP2205V	- 220 W 39600 lm 180 lm/W >0,98 5000 K	7898727313038



CERTIFICADO DE AVALIAÇÃO DA CONFORMIDADE

EMITIDO POR ORGANISMO DE CERTIFICAÇÃO DE PRODUTOS ACREDITADO PELA CGCRE
CONFORMITY ASSESSMENT CERTIFICATE ISSUED BY A CERTIFICATION BODY ACCREDITED BY CGCRE

Certificado Nº: NCC 24.10993
Certificate No.

Revisão nº/revision no.: 0

Data de emissão: 17/09/2024
Issued date:

Certificado de Conformidade válido somente acompanhado das páginas de 1 a 6
Certificate valid only accompanied of pages 1 through 6

CONDIÇÕES DE CERTIFICAÇÃO:

CONDITIONS OF CERTIFICATION:

Modelo 5: Ensaio de tipo, avaliação e aprovação do Sistema de Gestão da Qualidade do fabricante, acompanhamento através de auditorias no fabricante e ensaio em amostras retiradas no comércio e no fabricante. Modelo baseado no ensaio de tipo e acompanhado de avaliação das medidas tomadas pelo fabricante para o Sistema de Gestão da Qualidade de sua produção, seguido de um acompanhamento a cada 12 meses, por meio de auditorias, do controle da qualidade da fábrica e de ensaios de verificação em amostras tomadas no comércio e na fábrica.

Model 5: Type test, evaluation and approval of the manufacturer's Quality Management System, surveillance through audits on the factory and test on samples taken in market and on the manufacturer. Model based on the type of test and accompanied by evaluation of the actions taken by the manufacturer for the Quality Management System of its production, followed by a follow-up every 12 months by means of audits of the factory quality control and test checks in samples taken in market and factory.

A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do OCP previstas no RAC específico da Portaria Inmetro nº. 62, de 17 de Fevereiro de 2022. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro. *The validity of this Certificate is linked to carrying out assessments of maintenance and treatment of possible non-compliance in accordance with the orientations of the NCC and in the Ordinance nº. 62, of February 17th, 2022. For verification of updated condition of regularity from this Conformity's Certificate, must be checked on product and services data bank certificated from Inmetro.*

Este Certificado é válido apenas para os equipamentos de modelos idênticos aos equipamentos efetivamente ensaiados. Quaisquer modificações nos projetos, bem como a utilização de componentes e/ou materiais diferentes daqueles definidos pela documentação descritiva dos equipamentos, sem a prévia autorização da NCC, invalidarão este Certificado.

This Certificate is valid only for models identical to those effectively tested. Any modifications to the projects and the use of components and / or different materials from those defined by descriptive documentation of the equipment, without the prior permission of NCC, will invalidate this certificate.

O usuário tem a responsabilidade de assegurar que os produtos serão instalados em atendimento às instruções do fabricante e as normas aplicadas a estes.

The user has the responsibility to ensure that the products will be installed in compliance with manufacturer's instructions and standards applied to them.



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PLANILHA DE ESPECIFICAÇÕES TÉCNICAS - PET

TECHINICAL SPECIFICATION SPREADSHEET - PET

ANEXO DA PORTARIA INMETRO N° 62/2022

ANEXO F – MODELO DE PLANILHA DE ESPECIFICAÇÕES TÉCNICAS

1 – DENOMINAÇÃO COMERCIAL	
MARCA	RAJIX
FORNECEDOR	RAJIX ENERGY LTDA
FABRICANTE	

2 - IDENTIFICAÇÃO DA FAMÍLIA	
FAMÍLIA	SMD / TS1-E30FL / IP67 / 108000h
MARCA/MODELO DO LED	SHENZHEN TONGYIFANG OPTOELECTRONIC TECHNOLOGY CO., LTD / TS1-E30FL
TIPO DA LUMINÁRIA	STREET LIGHT LED
VIDA DECLARADA (h)	108000h

(*) Composição do Código da Família:

LUMINÁRIA TECNOLOGIA LED: Tecnologia da luminária / Marca e Modelo do LED / IP da luminária / Vida nominal

LUMINÁRIA COM LÂMPADA DESCARGA: Tecnologia da luminária / Tipo de lâmpada / Tipo de refrator e difusor / IP da Luminária / Vida nominal

CÓDIGO DE BARRAS	MODELO	TENSÃO DE ENSAIO (V)	FREQ. (HZ)	POTÊNCIA (W)	FATOR DE POTÊNCIA	FLUXO LUMINOSO (lm)	RENDIMENTO ÓTICO (***) (%)	EE (**) (lm/W)	IRC	TCC (K)	Nº RELATÓRIO ENSAIO / LABORATÓRIO
7898727312840	LP0304V	90-280V	50/60	30	>0,98	5400	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312857	LP0504V	90-280V	50/60	50	>0,98	9000	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312864	LP0704V	90-280V	50/60	70	>0,98	12600	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312871	LP0904V	90-280V	50/60	90	>0,98	16200	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312888	LP1004V	90-280V	50/60	100	>0,98	18000	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312895	LP1204V	90-280V	50/60	120	>0,98	21600	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312901	LP1504V	90-280V	50/60	150	>0,98	27000	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312918	LP1804V	90-280V	50/60	180	>0,98	32400	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312925	LP2004V	90-280V	50/60	200	>0,98	36000	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312932	LP2204V	90-280V	50/60	220	>0,98	39600	NA	180	70	4000	SKT2024-0833-00 SKT2024-0834-00
7898727312949	LP0305V	90-280V	50/60	30	>0,98	5400	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727312956	LP0505V	90-280V	50/60	50	>0,98	9000	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727312963	LP0705V	90-280V	50/60	70	>0,98	12600	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727312970	LP0905V	90-280V	50/60	90	>0,98	16200	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727312987	LP1005V	90-280V	50/60	100	>0,98	18000	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727312994	LP1205V	90-280V	50/60	120	>0,98	21600	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727313007	LP1505V	90-280V	50/60	150	>0,98	27000	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727313014	LP1805V	90-280V	50/60	180	>0,98	32400	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727313021	LP2005V	90-280V	50/60	200	>0,98	36000	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00
7898727313038	LP2205V	90-280V	50/60	220	>0,98	39600	NA	180	70	5000	SKT2024-0833-00 SKT2024-0834-00

(**) EE – Eficiência Energética. (***) Aplicável somente para Luminárias com lâmpadas de descarga



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ETIQUETA NACIONAL DE CONSERVAÇÃO DE ENERGIA – ENCE:

NATIONAL ENERGY CONSERVATION LABEL - ENCE:



Histórico da Revisão:

Revisão	Certificado	Data de Revisão	Processo	Descrição
0	NCC 24.10993	17/09/2024	91991/24.1	Emissão inicial

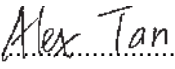


Test Report issued under the responsibility of

TEST REPORT

Ordinance no. 62 - February 17, 2022

Technical Quality Regulation And The Compliance Assessment Requirement For Luminaires For Road – Consolidated Street Lighting

Report Reference No	GZEE240300111201
Tested by (name + signature)	Simon Chen 
Approved by (name + signature)	Alex Tan 
Date of issue	2024-10-18
Total number of pages	116
Testing Laboratory	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Address	198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China
Applicant's name	RAJIX COMERCIAL LTDA
Address	AV REPUBLICA ARGENTINA, 1505, SALA 2012, AGUA VERDE, CURITIBA, PARANA, BRASIL
Manufacturer's name	
Address	
Test specification:	
Standard	Ordinance no. 62 – February 17, 2022
Test procedure	INMETRO
Non-standard test method	None
Test Report Form No	62/2022_A
Test Report Form(s) Originator	SGS-CSTC
Master TRF	2022-03-24
Test item description	LED ROAD LIGHTING
Trade Mark	—
Factory	
Model/Type reference	Detail see “General product information”
Ratings	Detail see “General product information”

**Summary of testing:**

The samples tested comply with the requirements of Ordinance no. 62 – February 17, 2022.

Models YR24045-60-L, YR24045-60-H, YR20045-40-L, YR15045-50-L, YR05045-60-L, YR15045-40-H, YR20045-50-H and YR10045-30-H were selected for the full tests at 127 V & 220 V because they have the Max. wattage and CCT. For the other models, tests were conducted according to clause 4.2.1 – 4.2.7 & 4.2.9 - 4.2.11.

Test item particulars.....:

Luminaire type: ☒ LED Luminaires / ☐ Discharge Luminaires

Mass of the equipment: Max. 2.84 kg for YR24045-60-H

Possible test case verdicts:

- test case does not apply to the test object.....: N/A

- test object does meet the requirement: P (Pass)

- test object does not meet the requirement.....: F (Fail)

Testing.....:

Date of receipt of test item.....: 2024-03-22

Date (s) of performance of tests.....: 2024-03-22 to 2024-08-27

General remarks:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

When determining for test conclusion, measurement uncertainty of tests has been considered.

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General product information:

Product information table:

No.	Model number	Ratings	Luminous intensity distributions
1.	YR24045-40-L	100 – 260 VAC, 50/60 Hz, 2.4 A, 240 W, 31200 lm, 130 lm/W, FP: ≥ 0.92 , 4000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
2.	YR20045-40-L	100 – 260 VAC, 50/60 Hz, 2 A, 200 W, 26000 lm, 130 lm/W, FP: ≥ 0.92 , 4000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
3.	YR15045-40-L	100 – 260 VAC, 50/60 Hz, 1.5 A, 150 W, 19500 lm, 130 lm/W, FP: ≥ 0.92 , 4000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
4.	YR10045-40-L	100 – 260 VAC, 50/60 Hz, 0.9 A, 100 W, 13000 lm, 130 lm/W, FP: ≥ 0.92 , 4000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
5.	YR05045-40-L	100 – 260 VAC, 50/60 Hz, 0.46 A, 50 W, 6500 lm, 130 lm/W, FP: ≥ 0.92 , 4000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
6.	YR24045-50-L	100 – 260 VAC, 50/60 Hz, 2.4 A, 240 W, 31200 lm, 130 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
7.	YR20045-50-L	100 – 260 VAC, 50/60 Hz, 2 A, 200 W, 26000 lm, 130 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
8.	YR15045-50-L	100 – 260 VAC, 50/60 Hz, 1.5 A, 150 W, 19500 lm, 130 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
9.	YR10045-50-L	100 – 260 VAC, 50/60 Hz, 0.9 A, 100 W, 13000 lm, 130 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
10.	YR05045-50-L	100 – 260 VAC, 50/60 Hz, 0.46 A, 50 W, 6500 lm, 130 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
11.	YR24045-60-L	100 – 260 VAC, 50/60 Hz, 2.4 A, 240 W, 31200 lm, 130 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
12.	YR20045-60-L	100 – 260 VAC, 50/60 Hz, 2 A, 200 W, 26000 lm, 130 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
13.	YR15045-60-L	100 – 260 VAC, 50/60 Hz, 1.5 A, 150 W, 19500 lm, 130 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
14.	YR10045-60-L	100 – 260 VAC, 50/60 Hz, 0.9 A, 100 W, 13000 lm, 130 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited

No.	Model number	Ratings	Luminous intensity distributions
		IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Control of luminous intensity distribution: Limited
15.	YR05045-60-L	100 – 260 VAC, 50/60 Hz, 0.46 A, 50 W, 6500 lm, 130 lm/W, FP: $\geq$ 0.92, 6500 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
16.	YR24045-30-L	100 – 260 VAC, 50/60 Hz, 2.4 A, 240 W, 31200 lm, 130 lm/W, FP: $\geq$ 0.92, 3000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
17.	YR20045-30-L	100 – 260 VAC, 50/60 Hz, 2 A, 200 W, 26000 lm, 130 lm/W, FP: $\geq$ 0.92, 3000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
18.	YR15045-30-L	100 – 260 VAC, 50/60 Hz, 1.5 A, 150 W, 19500 lm, 130 lm/W, FP: $\geq$ 0.92, 3000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
19.	YR10045-30-L	100 – 260 VAC, 50/60 Hz, 0.9 A, 100 W, 13000 lm, 130 lm/W, FP: $\geq$ 0.92, 3000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
20.	YR05045-30-L	100 – 260 VAC, 50/60 Hz, 0.46 A, 50 W, 6500 lm, 130 lm/W, FP: $\geq$ 0.92, 3000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
21.	YR24045-40-H	100 – 260 VAC, 50/60 Hz, 2.65 A, 240 W, 36000 lm, 150 lm/W, FP: $\geq$ 0.92, 4000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
22.	YR20045-40-H	100 – 260 VAC, 50/60 Hz, 2.3 A, 200 W, 30000 lm, 150 lm/W, FP: $\geq$ 0.92, 4000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
23.	YR15045-40-H	100 – 260 VAC, 50/60 Hz, 1.8 A, 150 W, 22500 lm, 150 lm/W, FP: $\geq$ 0.92, 4000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
24.	YR10045-40-H	100 – 260 VAC, 50/60 Hz, 1.3 A, 100 W, 15000 lm, 150 lm/W, FP: $\geq$ 0.92, 4000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
25.	YR05045-40-H	100 – 260 VAC, 50/60 Hz, 0.53 A, 50 W, 7500 lm, 150 lm/W, FP: $\geq$ 0.92, 4000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
26.	YR24045-50-H	100 – 260 VAC, 50/60 Hz, 2.65 A, 240 W, 36000 lm, 150 lm/W, FP: $\geq$ 0.92, 5000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
27.	YR20045-50-H	100 – 260 VAC, 50/60 Hz, 2.3 A, 200 W, 30000 lm, 150 lm/W, FP: $\geq$ 0.92, 5000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
28.	YR15045-50-H	100 – 260 VAC, 50/60 Hz, 1.8 A, 150 W, 22500 lm, 150 lm/W, FP: $\geq$ 0.92, 5000 K, IRC $\geq$ 70, Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited

No.	Model number	Ratings	Luminous intensity distributions
			distribution: Limited
29.	YR10045-50-H	100 – 260 VAC, 50/60 Hz, 1.3 A, 100 W, 15000 lm, 150 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
30.	YR05045-50-H	100 – 260 VAC, 50/60 Hz, 0.53 A, 50 W, 7500 lm, 150 lm/W, FP: ≥ 0.92 , 5000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
31.	YR24045-60-H	100 – 260 VAC, 50/60 Hz, 2.65 A, 240 W, 36000 lm, 150 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
32.	YR20045-60-H	100 – 260 VAC, 50/60 Hz, 2.3 A, 200 W, 30000 lm, 150 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
33.	YR15045-60-H	100 – 260 VAC, 50/60 Hz, 1.8 A, 150 W, 22500 lm, 150 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
34.	YR10045-60-H	100 – 260 VAC, 50/60 Hz, 1.3 A, 100 W, 15000 lm, 150 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
35.	YR05045-60-H	100 – 260 VAC, 50/60 Hz, 0.53 A, 50 W, 7500 lm, 150 lm/W, FP: ≥ 0.92 , 6500 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
36.	YR24045-30-H	100 – 260 VAC, 50/60 Hz, 2.65 A, 240 W, 36000 lm, 150 lm/W, FP: ≥ 0.92 , 3000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
37.	YR20045-30-H	100 – 260 VAC, 50/60 Hz, 2.3 A, 200 W, 30000 lm, 150 lm/W, FP: ≥ 0.92 , 3000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
38.	YR15045-30-H	100 – 260 VAC, 50/60 Hz, 1.8 A, 150 W, 22500 lm, 150 lm/W, FP: ≥ 0.92 , 3000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
39.	YR10045-30-H	100 – 260 VAC, 50/60 Hz, 1.3 A, 100 W, 15000 lm, 150 lm/W, FP: ≥ 0.92 , 3000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited
40.	YR05045-30-H	100 – 260 VAC, 50/60 Hz, 0.53 A, 50 W, 7500 lm, 150 lm/W, FP: ≥ 0.92 , 3000 K, IRC ≥ 70 , Life: 100 kh, IP66, IK08	Cross-sectional distribution: Type II; Longitudinal distribution: Short; Control of luminous intensity distribution: Limited

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Clause	Requirement + Test	Result - Remark	Verdict
Annex I - Regulation Technician of Quality Towards Fixtures Towards The Lighting Public Road			
3	Technical requirement Towards Fixtures Used Discharge Lamps		N/A
3.1	Requirements from safety Electric		N/A
3.1.1	The body of the door lamps should be porcelain; the conductive parts must be nickel-plated brass with Threads E-27/27 or E-40/40, central contact, with spring effect and wetting device; the terminals and screws for fixing the conductors must be nickel-nickel-nickeled brass, according to ABNT NBR IEC 60238:2005 (Edison Screw Lamp Holder).		N/A
3.1.2	The lamp holder or adjustable optical parts must contain the appropriate reference marks, according to ABNT NBR IEC 60238:2005 (Edison Screw Lamp Holder).		N/A
3.1.3	The luminaire must be provided with adequate anchorage, so that the conductors of the power cables are relieved of mechanical request at the points where they are connected to the terminals, when, without the anchorage, the weight of the power cables would exert a request on the connections.		N/A
3.1.3.1	The luminaire must already have the internal wiring necessary for its connection, identifying the cable corresponding to the central contact of the lamp		N/A
3.1.4	The photoelectric circuit socket (where applicable) must be electrically insulating material and its contacts must be tinned brass and suitable to support rated current of 10 A.		N/A
3.1.5	The luminaire enclosure shall ensure the degree of protection against the penetration of dust, solid objects and moisture, according to the classification of the luminaire and the IP code marked on the luminaire.		N/A
3.1.5.1	Luminaires must have the following minimum degrees of protection, according to ABNT NBR IEC 60598-1:2010 (Luminaires - Part 1: General requirements and tests):		N/A
	- IP-65 for optical compartment		N/A
	- IP-44 to reactor compartment		N/A
3.1.6	The insulation resistance and dielectric stiffness must be adequate, so that the luminaire is free of electrical insulation failures so that, at the operating temperature, the leakage current of the appliance is not excessive		N/A
3.1.7	Filters should be provided for the suppression of electromagnetic interference and radio frequency		N/A
3.1.7.1	Electromagnetic reactors for discharge lamps must meet the requirements according to the current Inmetro Ordinance.		N/A
3.1.8	The voltage increase of the reference sodium vapor lamp, when installed in the luminaire fed at		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	the rated voltage, shall not exceed the maximum values specified in Table 1 below		
3.1.9	Luminaires must have resistance to the external mechanical impacts to which they are subjected in the conditions of use.		N/A
3.1.9.1	Luminaires must have at least the degree of protection IK08, according to ABNT NBR IEC 62262:2015 (Degrees of protection ensured by electrical equipment enclosures against external mechanical impacts (IK Code)).		N/A
3.2	Requirements from performance		N/A
3.2.1	The luminaires must meet the minimum energy efficiency (EE) of 70 lm/W, as well as be classified in the Energy Efficiency classes of Table 2		N/A
3.2.1.1	The measured energy efficiency may not be lower than the acceptable minimum values defined in Table 2, nor less than 90% of the declared energy efficiency value		N/A
3.2.2	The luminaire should be classified according to the distributions of transverse and longitudinal illuminous intensity, according to the categories listed in Table 3		N/A
3.2.3	The luminaire should be classified as light distribution control (CDL) for each elevation angle declared as possible for installation (0°, 5°, 10°, 15°), in the categories specified in Table 4		N/A
3.2.4	The luminaire must have the following resistances to ultraviolet radiation		N/A
	(a) thermoplastic or polymeric components subject to time exposure shall not present premature degradation that compromises the operational performance of luminaires;		N/A
	(b) the transparency of polymer lenses and refractors shall not be less than 90% of the initial value; and		N/A
	(c) Refractors shall be designed against UV rays and with uniform thickness in order to avoid distortions in the photometric curve		N/A
3.2.5	The luminaire must not become unsafe or have premature failure under cyclic cooling and cooling conditions in service.		N/A
3.2.6	In conditions that represent abnormal operating conditions, parts of the luminaire and its mounting surface cannot reach excessive temperatures and wiring inside the luminaire cannot become unsafe.		N/A
4	Requirements Technical Towards Fixtures With Technology LED		P
4.1	Requirements from safety Electric		P
4.1.1	Luminaires must be designed to work under the following conditions of use:		P
	a) altitude not exceeding 1500 m		P
	(b) average ambient air temperature over a period of 24 h, not exceeding + 35 °C		P

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Clause	Requirement + Test	Result - Remark	Verdict
	c) ambient air temperature between - 5 °C and + 50 °C; and		P
	d) Relative humidity up to 100%.		P
4.1.2	Luminaires must be individually packed in packages suitable for the type of transport (where applied) and the normal loading, unloading, handling and storage operations		P
4.1.3	The luminaire must be provided with adequate anchorage, so that the conductors of the power cables are relieved of mechanical request at the points where they are connected to the terminals.		P
4.1.4	The photoelectric circuit socket (where applicable) must have insulation resistance, dielectric stiffness, the ability to conduct currents of the appropriate contacts and mechanical fixation of the appropriate conductors, in order to avoid the risk of electric shock, overheating and undue unlocking of pins and cables:		N/A
4.1.5	The luminaire enclosure shall ensure the degree of protection against the penetration of dust, solid objects and moisture, according to the classification of the luminaire and the IP code marked on the luminaire		P
4.1.5.1	The housings of vital parts (LED, secondary optical system and controller) must have at least IP66 protection, according to ABNT NBR IEC 60598-1:2010 (Luminaires - Part 1: General requirements and tests).	IP66	P
4.1.5.2	If the controller is IP-65 or higher, the controller housing on the luminaire must be at least IP-44.		P
4.1.6	The insulation resistance and dielectric stiffness must be adequate, so that the luminaire is free of electrical insulation failures so that, at the operating temperature, the leakage current of the appliance is not excessive		P
	Right after the moisture test of item 9.3 of ABNT NBR IEC 60598-1, the luminaire shall be subject to the insulation resistance test as per ABNT NBR IEC 60598-1.		P
	Insulation resistance test		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø		—
	Insulation resistance (M)		—
	SELV		P
	- between current-carrying parts of different polarity	> 20 M	P
	- between current-carrying parts and mounting surface	> 20 M	P
	- between current-carrying parts and metal parts of the luminaire	> 20 M	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	and accessible metal parts.....:		
	- Insulation bushings		N/A
	Other than SELV		P
	- between live parts of different polarity	> 20 M	P
	- between live parts and mounting surface	> 20 M	P
	- between live parts and metal parts.....:	> 20 M	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings		N/A
	Electric strength test		P
	Test voltage (V)		P
	SELV		P
	- between current-carrying parts of different polarity	500 V	P
	- between current-carrying parts and mounting surface	500 V	P
	- between current-carrying parts and metal parts of the luminaire.....:	500 V	P
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings		N/A
	Other than SELV		P
	- between live parts of different polarity	1520 V	P
	- between live parts and mounting surface	1520 V	P
	- between live parts and metal parts.....:	1520 V	P
	- between live parts of different polarity through action of a switch		N/A
	- between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts.....:		N/A
	- Insulation bushings.....:		N/A
4.1.7	Leakage current that may occur during normal use of the luminaire may not cause a risk of electric shock		P
	The luminaire shall be subjected to the leakage current test according to ABNT		P

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Clause	Requirement + Test	Result - Remark	Verdict
	NBR IEC 60598-1.		
	Touch current or protective conductor current (mA):	1.2 mA	P
4.1.8	Luminaires must be constructed in such a way that their living parts are not accessible when the luminaire is electrically installed and connected for normal use.		P
ABNT NBR IEC 60598-1	The luminaire shall be subjected to the leakage current test according to ABNT NBR IEC 60598-1.		P
8.2.3 c)	For ordinary class III luminaires, the voltage under no-load exceeds 25 V r.m.s. or 60 V d.c., the touch current measured (mA):		N/A
	If the voltages or currents exceed the values given above, at least one of the conductive parts in the SELV circuit shall be insulated by insulation, withstanding:		N/A
8.2.5	Standard test finger and with force of 10 N test against electric shock		P
8.2.6	A force is applied to covers whose fixing is not dependent on screws:	☐ 20 N ☐ 80 N	N/A
8.2.7	Capacitor discharge test, Max. discharged voltage (V):	4 V	P
4.1.9	Filters should be provided on the controller (driver) for suppression of electromagnetic interference and radio frequency.		P
	Conformity is verified by submitting the controller to one of the following standards: EN 55015 or CISPR 15.		P
4.1.10	Luminaires must have a resistance to external mechanical impacts to which they are subject under the conditions of use		P
4.1.10.1	Luminaires must have at least the degree of protection IK08, according to ABNT NBR IEC 62262:2015 (Degrees of protection ensured by electrical equipment enclosures against external mechanical impacts (IK Code)).	IK08	P
4.1.11	The screws used in the luminaires and connections intended for the installation of the luminaires shall not show any deformation during tightening and untightening or causing deformation or breakage of the luminaire		P
ABNT NBR IEC 60598-1	The screws used to make the luminaires and the connections for installation of the luminaires shall be tested according to standard ABNT NBR IEC 60598-1 and shall not show any deformation during tightening or untightening or cause deformations and/or break the luminaires.		P
	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part..... :	0.5; enclosure	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Torque test: torque (Nm); part..... :		N/A
	Torque test: torque (Nm); part..... :		N/A
	Locked connections:		N/A
	- fixed arms; torque (Nm)		N/A
	- lampholder; torque (Nm)		N/A
	- push-button switches; torque 0,8 Nm		N/A
	Screwed glands; force (Nm)		N/A
4.1.12	Must be resistant to the force of the wind to which they are subject when in normal use.		P
ABNT NBR 15129	The luminaires must withstand the wind forces, as per standard ABNT NBR 15129.		P
7.3	Static load test (10 min)		P
4.1.13	Luminaires must continue to function in vibration situations to which they are subject when in normal use, and may not present any electrical or mechanical failures such as cracks, breaks, warps, opening of the fasteners and others that may compromise their performance.		P
ABNT NBR IEC 60598-1	The luminaires must be resistant to vibration, according to ABNT NBR IEC 60598-1. The test must be made with the luminaire completely mounted with all the components.		P
	To be considered approved in the test, in addition to the evaluations provided in ABNT NBR IEC 60598-1, the luminaires must operate after the test the same way as before the test and shall present any electric or mechanic failures such as cracks, breaks, warp, locks opening, and others that may impair their performance.		P
4.2	Requirements from performance		P
4.2.1	The total power of the circuit, at the rated voltage, shall not exceed 110% of the declared value		P
4.2.2	The power factor of the luminaires must meet the following requirements		P
4.2.2.1	The measured power factor of the circuit cannot be lower than the value declared by more than 0.05, when the luminaire is fed with nominal voltage and frequency	See table 1 & 2	P
4.2.2.2	The power factor must be equal to or greater than 0.92.	See table 1 & 2	P
4.2.3	The voltage and output current conditions of the control device during operation must be as follows.		P
4.2.3.1	For control devices with unstabilized output voltage, when powered with the rated voltage, the output voltage may not differ more than $\pm 10\%$ from the rated voltage of the LED modules.		N/A
4.2.3.2	For control devices with a stabilized output voltage, when powered at any voltage between		N/A

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Clause	Requirement + T est	Result - Remark	Verdict																																	
	92% and 106% of the rated voltage, the output voltage may not differ more than ±10% from the rated voltage of the LED modules																																			
4.2.3.3	For control devices with unstabilized output current, when powered with the rated voltage, the output current may not differ more than ±10% from the rated current of the LED modules.		N/A																																	
4.2.3.4	For control devices with stabilized output current, when fed at any voltage between 92% and 106% of the rated voltage, the output current may not present superfluous variation to ±10% of the rated current of the LED modules	See table 1	P																																	
4.2.3.5	The Luminaire with LED technology must have a voltage surge protection device		P																																	
4.2.4	The power current, in the rated voltage, may not differ by more than 10% from the declared value in the control device or in the supplier's literature		P																																	
4.2.4.1	The harmonics of the power supply current must comply with IEC 61000-3-2:2014 ((Electromagnetic compatibility (EMC) - Limits Is harmonic Current emissions (equipment input Current 16 The Per phase)).		P																																	
4.2.5	The luminaires must meet the minimum energy efficiency (EE) of 68 lm/W, as well as be classified in the Energy Efficiency classes of Table 5.		P																																	
4.2.5.1	The average measured energy efficiency may not be lower than the minimum acceptable values defined in Table 5, nor less than 90% of the declared energy efficiency value.		P																																	
4.2.6	The nominal color temperature (CBT) of a lamp should be between 2700 K and 6500 K, following the variations established in Table 6. <table><tr><th colspan="3">Color temperature (K)</th></tr><tr><th>Minimum Value</th><th>Declared Value</th><th>Maximum Value</th></tr><tr><td>2 580</td><td>2 700</td><td>2 870</td></tr><tr><td>2 870</td><td>3 000</td><td>3 220</td></tr><tr><td>3 220</td><td>3 500</td><td>3 710</td></tr><tr><td>3 710</td><td>4 000</td><td>4 260</td></tr><tr><td>4 260</td><td>4 500</td><td>4 746</td></tr><tr><td>4 746</td><td>5 000</td><td>5 312</td></tr><tr><td>5 312</td><td>5 700</td><td>6 022</td></tr><tr><td>6 022</td><td>6 500</td><td>7 042</td></tr><tr><td>TCC Flexible (2800 – 5600K)</td><td>TF² = ΔT²</td><td></td></tr></table> 1) TF shall be selected in steps of 100 K (2 800, 2 900, 6 400 K), excluding the nominal TCC values listed above. 2) ΔT shall be calculated by ΔT= 1.1900 x 10⁻⁸ x T³ – 1.5454 x 10⁻⁴ x T² – 0.7168 x T – 902.55	Color temperature (K)			Minimum Value	Declared Value	Maximum Value	2 580	2 700	2 870	2 870	3 000	3 220	3 220	3 500	3 710	3 710	4 000	4 260	4 260	4 500	4 746	4 746	5 000	5 312	5 312	5 700	6 022	6 022	6 500	7 042	TCC Flexible (2800 – 5600K)	TF² = ΔT²		See table 1	P
Color temperature (K)																																				
Minimum Value	Declared Value	Maximum Value																																		
2 580	2 700	2 870																																		
2 870	3 000	3 220																																		
3 220	3 500	3 710																																		
3 710	4 000	4 260																																		
4 260	4 500	4 746																																		
4 746	5 000	5 312																																		
5 312	5 700	6 022																																		
6 022	6 500	7 042																																		
TCC Flexible (2800 – 5600K)	TF² = ΔT²																																			
4.2.7	The luminaire must be able to properly reproduce the actual colors of an object or surface when compared to natural light.		P																																	
4.2.7.1	The General Color Reproduction Index (Ra), which characterizes the Color Reproduction Index (IRC), must be greater than or equal to 70 (Ra ≥ 70).		P																																	
4.2.8	The minimum life expectancy for maintaining the luminous flux of 70% (L70) is 50,000 hours.		P																																	
4.2.9	The built-in control device must have durability compatible with the rated life of the lamp.		P																																	
4.2.10	The luminaire should be classified according to the distributions of transverse and longitudinal iluminous intensity, according to the categories listed in Table 7, for an		P																																	

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Clause	Requirement + Test	Result - Remark	Verdict																			
	installation with an elevation angle of 0°).																					
	Classification of the luminous intensity distributions (3 samples)		P																			
	The luminaires are classifiable, based on ABNT NBR 5101, as to the cross-sectional distribution, longitudinal distribution and distribution control, as per Table 3.		P																			
	Cross-sectional distribution	Type II	P																			
	Longitudinal distribution	Short	P																			
	Control of luminous intensity distribution	Limited	P																			
4.2.11	The luminaire should be classified as for the control of light distribution (CDL), for an installation with an elevation angle of 0°, in the categories specified in Table 8.		P																			
	The luminous distribution control is defined by standard ABNT NBR 5101 and its values shown in below Table. (3 samples)		P																			
	Inform the CDL classification corresponding to the possible angles of elevation at installation, from the following: 0°, 5°, 10°, 15°, as well as meet the requirements according to their classification, as per the limits specified in below Table. (3 samples)		P																			
	<table><tr><th colspan="3">LUMINOUS DISTRIBUTION CONTROL - CDL</th></tr><tr><th>Type of luminaire</th><th colspan="2">CDL(%) = (Cd x 100) / luminaire flux</th></tr><tr><th></th><th colspan="2">ENCE</th></tr><tr><td rowspan="2">Totally limited</td><td>above 90°</td><td>0</td></tr><tr><td>above 80° & to 90°</td><td>≤ 10</td></tr><tr><td rowspan="2">Limited</td><td>above 90°</td><td>≤ 2.5</td></tr><tr><td>above 80° & to 90°</td><td>≤ 10</td></tr></table>	LUMINOUS DISTRIBUTION CONTROL - CDL			Type of luminaire	CDL(%) = (Cd x 100) / luminaire flux			ENCE		Totally limited	above 90°	0	above 80° & to 90°	≤ 10	Limited	above 90°	≤ 2.5	above 80° & to 90°	≤ 10	Limited	P
LUMINOUS DISTRIBUTION CONTROL - CDL																						
Type of luminaire	CDL(%) = (Cd x 100) / luminaire flux																					
	ENCE																					
Totally limited	above 90°	0																				
	above 80° & to 90°	≤ 10																				
Limited	above 90°	≤ 2.5																				
	above 80° & to 90°	≤ 10																				
4.2.12	The luminaire must have the following resistances to ultraviolet radiation:		P																			
	(a) lenses and polymer refractors subject to time exposure shall not have premature degradation that compromises the operational performance of luminaires;		P																			
	(b) the transparency of polymer lenses and refractors shall not be less than 90% of the initial value; and	91.24%	P																			
	(c) Refractors shall be designed against UV rays and with uniform thickness in order to avoid distortions in the photometric curve		P																			
	The thermoplastic components subject to exposure to the weather must be submitted to weather tests based on standard ASTM G154, cycle 3, in UV chamber with exposure time of 2016 hours. After the test, the parts shall not show degradation that impairs the operational performance of the luminaires.	See Annex 2	P																			
5	Requirements from markings and instructions		P																			
5.1	Markings must be indicated legibly and indelible on the luminaire, by means of adhesive, engraving or other method that guarantees readability and indelebility. Additionally, the luminaires must present the following information, in addition to those established in the ABNT NBR 15129:2012 standard (Lighting Fixtures - Particular Requirements):		P																			
	(a) number of luminaire manufacturing serials; and		P																			

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Luminaire model		P
5.2	The instruction leaflet must provide the following information, in addition to those set out in ABNT NBR 15129:2012 (Lighting Fixtures - Particular Requirements):		P
	a) name and or brand of the supplier		P
	b) supplier model or code;		P
	c) photometric classification, with indication of the corresponding elevation angle;		P
	d) rated power, in watts;		P
	e) rated voltage range, in volts;		P
	f) nominal frequency, in hertz;		P
	(g) the country of origin of the product;		P
	h) instructions to the user regarding electrical installation, handling and recommended care		P
	(i) information on the importer or distributor		P
	j) product warranty, from the date of the note of sale to the consumer, being at least 60 months;		P
	k) expiration date for storage: undetermined;		P
	l) type of protection against electric shock; and		P
	m) guidelines for obtaining the IES file of photometry.		P
5.3	For LED luminaires, the following additional marking requirements apply:		
	(a) The instruction leaflet shall also contain information on the controller (make, model, power, rated electric current) and life expectancy (h) corresponding to the maintenance of the luminous flux of 70 % (L70) or 80 % (L80).		P
	b) The controller must be marked according to ABNT NBR IEC 61347-2-13:2012 (Lamp Control Device - Part 2-13: Particular electronic control requirements fed in c.c. or c.a. for LED modules) and ABNT NBR 16026:2012 (Electronic control device c.c. or c.a. for LED modules - Performance requirements).		P
	(c) Packaging shall be identified externally with the following minimum information, marked legibly and indelibly, by means of adhesive, engraving or other method ensuring readability and indelebility:		P
	- name and/or brand of the manufacturer;		P
	- model or type of luminaire;		P
	- CNPJ and supplier address;		P
	- Gross weight; and		P
	- Stacking capacity and position.		P

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Clause	Requirement + Test		Result - Remark	Verdict																
Annex B	Method From Measurement And Calculation Of Maintenance From Flow Bright Of LEDs (Based On In Norm Iesna Lm-80-08 And Tm-21)			P																
	Performance Characteristics			P																
	Maintenance of the luminous flux of the luminaire			P																
	The useful life span estimated for the LED products is normally given in terms of the expectancy in hours of operation until the luminous flux of the luminaire falls to 70 % of its initial value (shown as L70). There are two (2) options to show with luminous flux maintenance of the luminaire.	☒ option 1: Component Performance ☐ option 2: Luminaire Performance		P																
	Option 1: LED Component Performance			P																
	ISTMT measurement			P																
	To evaluate the conformity by the LED component performance, the following conditions shall be met:			P																
	a) The highest temperature measured on the ISTMT shall stay below the highest value of temperature of the component measured on LM-80.	Temperature measured on the ISTMT (C): Max. 90.1 C Temperature measured on measured on LM-80 (C): 105 C		P																
	b) The location of the temperature measuring point (TMP) is defined by the manufacturer, both for the tests relative to the LM-80 for the ISTMT.			P																
	c) The LED current supplied by the LED controller on the luminaire, shall be lower than or equal to the LED current measured for the LM-80 report.	LED current supplied by the LED controller on the luminaire (mA): Max. 110 mA LED current measured for the LM-80 report (mA): 150 mA		P																
	d) The luminous flux maintenance in time (t), estimated as per TM-21, shall be higher than or equal to the flux maintenance percent corresponding to the final projected point, listed in Table 1 in Attachment D.			P																
	<table><tr><th>Final projected point</th><th>Flux maintenance required for products of 50 000 h</th></tr><tr><td>36 000 h</td><td>≥ 77.35 %</td></tr><tr><td>38 500 h</td><td>≥ 75.98 %</td></tr><tr><td>42 000 h</td><td>≥ 74.11 %</td></tr><tr><td>44 000 h</td><td>≥ 73.06 %</td></tr><tr><td>48 000 h</td><td>≥ 71.01 %</td></tr><tr><td>49 500 h</td><td>≥ 70.25 %</td></tr><tr><td>50 000 h</td><td>≥ 70.00 %</td></tr></table>	Final projected point	Flux maintenance required for products of 50 000 h	36 000 h	≥ 77.35 %	38 500 h	≥ 75.98 %	42 000 h	≥ 74.11 %	44 000 h	≥ 73.06 %	48 000 h	≥ 71.01 %	49 500 h	≥ 70.25 %	50 000 h	≥ 70.00 %	Time (t) at which to estimate lumen maintenance (hours): >120000 h; The luminous flux maintenance: 91.47%		P
Final projected point	Flux maintenance required for products of 50 000 h																			
36 000 h	≥ 77.35 %																			
38 500 h	≥ 75.98 %																			
42 000 h	≥ 74.11 %																			
44 000 h	≥ 73.06 %																			
48 000 h	≥ 71.01 %																			
49 500 h	≥ 70.25 %																			
50 000 h	≥ 70.00 %																			
	Option 2: Luminaire Performance			N/A																
	The luminaire performance conformity for the luminous flux maintenance is verified by submitting the complete luminaire to the photometric tests of LM-79, by comparing the initial luminous flux (time = 0 h) with the luminous flux after 6 000 h of operation (time ≥ 6000 h).			N/A																
	The test report shall demonstrate a minimum percent of the luminous flux maintenance, as below Table.			N/A																
	Nominal life declared	Maintenance of the minimum luminous flux at 6	Initial luminous flux (lm): luminous flux at at 6000 h (lm):	N/A																



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Clause	Requirement + Test			Result - Remark	Verdict
		000 h		Maintenance at 6000 h:	
	50000 h	95,8 %			
	Qualification of the electronic control device CC or CA for LED modules				P
	The electronic control device for the LED, independent or embedded type, shall be tested at the situation of application in nominal operation conditions (nominal voltage and ambient temperature), by measuring the controller housing temperature at the indicated point (tc). For the test, the luminaire shall operate at an ambient temperature of 35 °C.			Rated tc (C): 90 °C; Measured tc (C): 72.8 °C	P

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Table 1 – Energy efficiency test for full test model

Model No.:	YR24045-60-L	Rated wattage (W):	240			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277		LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	236.7	1882	30112	127.22	N/A	0.9954	6226	73.7	Input voltage: at 116.84 V; Output current: 1.8159 A; Input voltage: at 134.62 V; Output current:1.8266 A
2#:	237.6	1885	30042	126.44	N/A	0.9948	6229	73.3	Input voltage: at 116.84 V; Output current: 1.8186 A; Input voltage: at 134.62 V; Output current:1.8242 A
3#:	237.1	1880	30207	127.4	N/A	0.9962	6236	73.9	Input voltage: at 116.84 V; Output current:1.8134 A; Input voltage: at 134.62 V; Output current: 1.8279 A
Arithmetic mean	237.1	1882	30120	127.02	N/A	0.9955	6230	73.6	—
Rating	240	2400	31200	130	N/A	0.92	6500	70	Program set max. output current 1.8 A
Limit	264	< 2640	28080	90	N/A	0.92	6022 to 7042	70	1.62 to 1.98 A
Verdict	P	P	P	P	N/A	P	P	P	P

Ordinance no. 62/2022

Table 1 – Energy efficiency test for full test model

Model No.:	YR24045-60-L		Rated wattage (W):	240			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	237.1	1100	30749	129.69	N/A	0.9739	6237	74.0	Input voltage: at 202.4 V; Output current: 1.8369 A; Input voltage: at 233.2 V; Output current: 1.8596 A	
2#:	237.3	1107	30746	129.57	N/A	0.9746	6228	73.5	Input voltage: at 202.4 V; Output current: 1.8347 A; Input voltage: at 233.2 V; Output current: 1.8579 A	
3#:	237.2	1102	30765	129.7	N/A	0.9753	6233	73.9	Input voltage: at 202.4 V; Output current: 1.8317 A; Input voltage: at 233.2 V; Output current: 1.8609 A	
Arithmetic mean	237.2	1103	30753	129.65	N/A	0.9746	6233	73.8	—	
Rating	240	2400	31200	130	N/A	0.92	6500	70	Program set max. output current 1.8 A	
Limit	264	< 2640	28080	90	N/A	0.92	6022 to 7042	70	1.62 to 1.98 A	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	1.	2.	3.	1.	2.	3.	—
voltage	127 V			220 V			
30 :	29.89	29.86	29.93	29.28	29.25	29.32	—
2	0.069	0.068	0.068	0.121	0.126	0.123	2
3	1.701	1.706	1.709	2.162	2.166	2.167	30
5	1.264	1.266	1.268	2.501	2.506	2.507	10
7	1.889	1.886	1.889	3.140	3.146	3.150	7
9	1.454	1.456	1.461	2.447	2.446	2.447	5
11 < n < 39 (Only odd harmonics)	0.869	0.866	0.869	1.645	1.665	1.650	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR24045-60-H			Rated wattage (W):	240		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	246.4	1946	38055	154.44	N/A	0.9941	6715	75.0	Input voltage: at 116.84 V; Output current: 0.9192 A; Input voltage: at 134.62 V; Output current:0.9206 A	
2#:	246.7	1943	38007	154.06	N/A	0.9941	6726	74.2	Input voltage: at 116.84 V; Output current: 0.9191 A; Input voltage: at 134.62 V; Output current:0.9236 A	
3#:	246.1	1944	37974	154.3	N/A	0.9933	6715	73.8	Input voltage: at 116.84 V; Output current:0.9275 A; Input voltage: at 134.62 V; Output current: 0.9283 A	
Arithmetic mean	246.4	1944	38012	154.27	N/A	0.9938	6719	74.3	—	
Rating	240	2650	36000	150	N/A	0.92	6500	70	Program set max. output current 0.92 A	
Limit	264	< 2915	32400	90	N/A	0.92	6022 to 7042	70	0.828 to 1.012 A	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Table 1 – Energy efficiency test for full test model

Model No.:	YR24045-60-H		Rated wattage (W):	240			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	234.6	1114	37444	159.61	N/A	0.9608	6753	75.1	Input voltage: at 202.4 V; Output current:0.9195 A; Input voltage: at 233.2 V; Output current: 0.9243 A	
2#:	234.4	1114	37413	159.61	N/A	0.9608	6744	74.6	Input voltage: at 202.4 V; Output current: 0.9197 A; Input voltage: at 233.2 V; Output current: 0.9215A	
3#:	234.9	1104	37456	159.46	N/A	0.9606	6746	74.2	Input voltage: at 202.4 V; Output current: 0.9223 A; Input voltage: at 233.2 V; Output current: 0.9257 A	
Arithmetic mean	234.8	1111	37443	159.49	N/A	0.9611	6747	74.3	—	
Rating	240	2650	36000	150	N/A	0.92	6500	70	Program set max. output current 0.92 A	
Limit	264	< 2915	32400	90	N/A	0.92	6022 to 7042	70	0.828 to 1.012 A	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	4.	5.	6.	4.	5.	6.	—
voltage	127 V			220 V			
30 :	29.82	29.79	29.81	28.89	28.91	28.84	—
2	0.052	0.056	0.053	0.134	0.136	0.134	2
3	3.811	3.821	3.806	6.574	6.575	6.578	30
5	2.150	2.156	2.151	2.891	2.896	2.893	10
7	1.572	1.572	1.570	2.295	2.296	2.295	7
9	1.211	1.212	1.211	1.965	1.966	1.968	5
11 < n < 39 (Only odd harmonics)	0.966	0.967	0.971	1.635	1.636	1.639	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR20045-40-L	Rated wattage (W):	200			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277		LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	198.7	1564	25269	127.17	N/A	0.9943	4134	84.8	Input voltage: at 116.84 V; Output current: 1.5304 A; Input voltage: at 134.62 V; Output current:1.5365 A
2#:	198.7	1558	25367	127.66	N/A	0.9932	4121	84.9	Input voltage: at 116.84 V; Output current: 1.5320 A; Input voltage: at 134.62 V; Output current:1.5378 A
3#:	197.3	1562	25268	128.07	N/A	0.9937	4124	85.2	Input voltage: at 116.84 V; Output current:1.5296 A; Input voltage: at 134.62 V; Output current: 1.5351 A
Arithmetic mean	198.2	1561	25301	127.63	N/A	0.9937	4126	85	—
Rating	200	2000	26000	130	N/A	0.92	4000	70	Program set max. output current 1.5 A
Limit	220	< 2200	23400	90	N/A	0.92	3710 to 4260	70	1.35 to 1.65 A
Verdict	P	P	P	P	N/A	P	P	P	P

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Table 1 – Energy efficiency test for full test model

Model No.:	YR20045-40-L		Rated wattage (W):	200		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current					
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	198.2	941	25597	129.15	N/A	0.9636	4131	84.3	Input voltage: at 202.4 V; Output current:1.5484 A; Input voltage: at 233.2 V; Output current: 1.5548 A
2#:	198.5	937	25648	129.21	N/A	0.962	4123	85.4	Input voltage: at 202.4 V; Output current: 1.5473 A; Input voltage: at 233.2 V; Output current: 1.5539 A
3#:	197.8	933	25544	129.14	N/A	0.9641	4130	84.1	Input voltage: at 202.4 V; Output current: 1.5489 A; Input voltage: at 233.2 V; Output current: 1.5586 A
Arithmetic mean	198.2	937	25596	129.17	N/A	0.9632	4128	84.6	—
Rating	200	2000	26000	130	N/A	0.92	4000	70	Program set max. output current 1.5 A
Limit	220	< 2200	23400	90	N/A	0.92	3710 to 4260	70	1.35 to 1.65 A
Verdict	P	P	P	P	N/A	P	P	P	P

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	7.	8.	9.	7.	8.	9.	—
voltage	127 V			220 V			
30 :	29.88	29.85	29.81	29.01	28.95	29.06	—
2	0.16	0.14	0.12	0.20	0.19	0.26	2
3	0.35	0.39	0.31	4.29	4.37	4.43	30
5	3.16	3.09	3.11	4.80	4.63	4.76	10
7	2.40	2.27	2.39	3.32	3.37	3.21	7
9	0.74	0.83	0.71	1.75	1.72	1.63	5
11 < n < 39 (Only odd harmonics)	0.76	0.71	0.74	1.87	1.81	1.72	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR15045-50-L			Rated wattage (W):	150		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	141.7	1118	19080	134.65	N/A	0.9921	5087	83.0	Input voltage: at 116.84 V; Output current: 1.1059 A; Input voltage: at 134.62 V; Output current: 1.1149 A	
2#:	141.1	1125	19124	135.54	N/A	0.9928	5097	84.0	Input voltage: at 116.84 V; Output current: 1.1041 A; Input voltage: at 134.62 V; Output current: 1.1134 A	
3#:	142.4	1121	19114	134.23	N/A	0.9917	5082	83.6	Input voltage: at 116.84 V; Output current: 1.1062 A; Input voltage: at 134.62 V; Output current: 1.1159 A	
Arithmetic mean	141.7	1121	19106	134.81	N/A	0.9922	5089	83.5	—	
Rating	150	1500	19500	130	N/A	0.92	5000	70	Program set max. output current 1.1 A	
Limit	165	< 1650	17550	90	N/A	0.92	4746 to 5312	70	0.99 to 1.21 A	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Table 1 – Energy efficiency test for full test model

Model No.:	YR15045-50-L		Rated wattage (W):	150			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	146.8	664	19727	134.38	N/A	0.9566	5101	83.0	Input voltage: at 202.4 V; Output current: 1.1541 A; Input voltage: at 233.2 V; Output current: 1.1729 A	
2#:	146.9	664	19688	134.02	N/A	0.9553	5108	83.7	Input voltage: at 202.4 V; Output current: 1.1549 A; Input voltage: at 233.2 V; Output current: 1.1732 A	
3#:	146.5	653	19616	133.9	N/A	0.9573	5100	83.6	Input voltage: at 202.4 V; Output current: 1.1534 A; Input voltage: at 233.2 V; Output current: 1.1747 A	
Arithmetic mean	146.7	660	19677	134.1	N/A	0.9564	5103	83.4	—	
Rating	150	1500	19500	130	N/A	0.92	5000	70	Program set max. output current 1.1 A	
Limit	165	< 1650	17550	90	N/A	0.92	4746 to 5312	70	0.99 to 1.21 A	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	10.	11.	12.	10.	11.	12.	—
voltage	127 V			220 V			
30 :	29.83	29.89	29.87	28.86	28.92	28.81	—
2	0.10	0.16	0.20	0.17	0.23	0.19	2
3	2.71	2.62	2.79	4.09	4.25	4.16	30
5	1.72	1.66	1.83	3.17	3.23	3.11	10
7	2.29	2.23	2.25	3.72	3.87	3.85	7
9	1.60	1.51	1.62	2.92	3.03	2.87	5
11 < n < 39 (Only odd harmonics)	1.44	1.49	1.59	2.08	2.01	2.06	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR05045-60-L			Rated wattage (W):		50		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current							
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device		
1#:	49.7	402	7293	146.74	N/A	0.9803	6031	71.8	Input voltage: at 116.84 V; Output current: 0.3781 A; Input voltage: at 134.62 V; Output current: 0.3790 A		
2#:	49.7	402	7286	146.6	N/A	0.9811	6039	71.6	Input voltage: at 116.84 V; Output current: 0.3796 A; Input voltage: at 134.62 V; Output current: 0.3799 A		
3#:	50.8	408	7285	143.41	N/A	0.9798	6036	71.4	Input voltage: at 116.84 V; Output current: 0.3789 A; Input voltage: at 134.62 V; Output current: 0.3793 A		
Arithmetic mean	50.1	404	7288	145.58	N/A	0.9804	6035	71.6	—		
Rating	50	460	6500	130	N/A	0.92	6500	70	Program set max. output current 0.38 A		
Limit	55	< 506	5850	90	N/A	0.92	6022 to 7042	70	0.342 to 0.418		
Verdict	P	P	P	P	N/A	P	P	P	P		

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Table 1 – Energy efficiency test for full test model

Model No.:	YR05045-60-L	Rated wattage (W):	50			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277		LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	49.2	246	7369	149.78	N/A	0.9204	6031	72.0	Input voltage: at 202.4 V; Output current: 0.3818 A; Input voltage: at 233.2 V; Output current: 0.3826 A
2#:	48.8	255	7311	149.82	N/A	0.9197	6032	71.9	Input voltage: at 202.4 V; Output current: 0.3806 A; Input voltage: at 233.2 V; Output current: 0.3812 A
3#:	50.8	236	7377	145.22	N/A	0.922	6038	72.0	Input voltage: at 202.4 V; Output current: 0.3815 A; Input voltage: at 233.2 V; Output current: 0.3829 A
Arithmetic mean	49.6	246	7352	148.27	N/A	0.9207	6034	72.0	—
Rating	50	460	6500	130	N/A	0.92	6500	70	Program set max. output current 0.38 A
Limit	55	< 506	5850	90	N/A	0.92	6022 to 7042	70	0.342 to 0.418
Verdict	P	P	P	P	N/A	P	P	P	P

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	13.	14.	15.	13.	14.	15.	—
voltage	127 V			220 V			
30 :	29.74	29.79	29.71	28.16	28.29	28.21	—
2	0.14	0.19	0.26	0.16	0.19	0.24	2
3	2.30	2.39	3.06	8.23	8.69	8.97	30
5	3.82	3.93	4.11	5.73	5.98	6.23	10
7	2.52	2.84	2.51	2.87	3.61	2.93	7
9	0.51	0.92	1.06	1.38	1.56	1.74	5
11 < n < 39 (Only odd harmonics)	1.23	1.51	1.48	2.39	2.55	2.43	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR15045-40-H			Rated wattage (W):	150		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	146.8	1162	22341	152.19	N/A	0.9897	4096	83.8	Input voltage: at 116.84 V; Output current: 0.6162 A; Input voltage: at 134.62 V; Output current: 0.6163 A	
2#:	147.3	1162	22268	151.17	N/A	0.9889	4097	82.6	Input voltage: at 116.84 V; Output current: 0.6159 A; Input voltage: at 134.62 V; Output current: 0.6155 A	
3#:	145.9	1160	22263	152.59	N/A	0.9892	4092	83.8	Input voltage: at 116.84 V; Output current: 0.6169 A; Input voltage: at 134.62 V; Output current: 0.6175 A	
Arithmetic mean	146.7	1161	22291	151.98	N/A	0.9893	4095	83.4	—	
Rating	150	1800	22500	150	N/A	0.92	4000	70	Program set max. output current 0.61 A	
Limit	165	< 1980	20250	90	N/A	0.92	3710 to 4260	70	0.549 to 0.671	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Table 1 – Energy efficiency test for full test model

Model No.:	YR15045-40-H		Rated wattage (W):	150			Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current						
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device	
1#:	144.2	682	22292	154.59	N/A	0.9344	4106	84	Input voltage: at 202.4 V; Output current: 0.6161 A; Input voltage: at 233.2 V; Output current: 0.6161 A	
2#:	142.3	679	22261	156.44	N/A	0.9346	4108	83.6	Input voltage: at 202.4 V; Output current: 0.6155 A; Input voltage: at 233.2 V; Output current: 0.6157 A	
3#:	143.5	684	22192	154.65	N/A	0.9345	4098	83.2	Input voltage: at 202.4 V; Output current: 0.6151 A; Input voltage: at 233.2 V; Output current: 0.6153 A	
Arithmetic mean	143.3	682	22248	155.23	N/A	0.9345	4104	83.6	—	
Rating	150	1800	22500	150	N/A	0.92	4000	70	Program set max. output current 0.61 A	
Limit	165	< 1980	20250	90	N/A	0.92	3710 to 4260	70	0.549 to 0.671	
Verdict	P	P	P	P	N/A	P	P	P	P	

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	16.	17.	18.	16.	17.	18.	—
voltage	127 V			220 V			
30 :	29.74	29.79	29.71	28.20	28.25	28.19	—
2	0.14	0.16	0.11	0.18	0.25	0.22	2
3	5.69	5.76	5.78	11.66	11.26	11.39	30
5	3.37	3.42	3.36	6.21	5.98	6.15	10
7	2.42	2.54	2.55	4.48	4.53	4.36	7
9	1.80	1.82	1.74	2.71	2.98	2.79	5
11 < n < 39 (Only odd harmonics)	1.29	1.22	1.25	1.79	1.56	1.63	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR20045-50-H		Rated wattage (W):	200		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current					
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	204.9	1627	28306	138.15	N/A	0.9926	5192	83.7	Input voltage: at 116.84 V; Output current: 0.8082 A; Input voltage: at 134.62 V; Output current: 0.8053 A
2#:	205.2	1627	28360	138.21	N/A	0.9927	5191	83.5	Input voltage: at 116.84 V; Output current: 0.8079 A; Input voltage: at 134.62 V; Output current: 0.8063 A
3#:	206.1	1628	28235	137	N/A	0.9934	5182	83.2	Input voltage: at 116.84 V; Output current: 0.8062 A; Input voltage: at 134.62 V; Output current: 0.8044 A
Arithmetic mean	205.4	1627	28300	137.79	N/A	0.9929	5188	83.5	—
Rating	200	2300	30000	150	N/A	0.92	5000	70	Program set max. output current 0.8 A
Limit	220	< 2530	27000	90	N/A	0.92	4746 to 5312	70	0.72 to 0.88 A
Verdict	P	P	P	P	N/A	P	P	P	P

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Table 1 – Energy efficiency test for full test model

Model No.:	YR20045-50-H		Rated wattage (W):	200		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current					
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	201.5	961	28263	140.26	N/A	0.9509	5184	82.8	Input voltage: at 202.4 V; Output current: 0.8097 A; Input voltage: at 233.2 V; Output current: 0.8093 A
2#:	200.3	960	28241	140.99	N/A	0.951	5200	82.4	Input voltage: at 202.4 V; Output current: 0.8085 A; Input voltage: at 233.2 V; Output current: 0.8078 A
3#:	199.8	956	28327	141.78	N/A	0.9512	5182	83.5	Input voltage: at 202.4 V; Output current: 0.8096 A; Input voltage: at 233.2 V; Output current: 0.8089 A
Arithmetic mean	200.5	959	28277	141.01	N/A	0.951	5189	82.9	—
Rating	200	2300	30000	150	N/A	0.92	5000	70	Program set max. output current 0.8 A
Limit	220	< 2530	27000	90	N/A	0.92	4746 to 5312	70	0.72 to 0.88 A
Verdict	P	P	P	P	N/A	P	P	P	P

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	19.	20.	21.	19.	20.	21.	—
voltage	127 V			220 V			
30 :	29.83	29.89	29.87	28.58	28.51	28.55	—
2	0.11	0.16	0.19	0.15	0.19	0.17	2
3	4.05	4.12	4.23	7.41	7.49	7.45	30
5	2.43	2.59	2.67	3.73	3.91	3.79	10
7	1.83	1.93	1.96	3.08	3.15	3.11	7
9	1.38	1.24	1.28	2.31	2.36	2.32	5
11 < n < 39 (Only odd harmonics)	1.22	1.12	1.19	1.85	1.93	1.81	3

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Table 1 – Energy efficiency test for full test model

Model No.:	YR10045-30-H		Rated wattage (W):	100		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☒ 127 ☐ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current					
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	97.9	783	14028	143.29	N/A	0.9897	2904	80.9	Input voltage: at 116.84 V; Output current: 0.7847 A; Input voltage: at 134.62 V; Output current: 0.7886 A
2#:	97.6	792	14128	144.75	N/A	0.9892	2920	81.5	Input voltage: at 116.84 V; Output current: 0.7859 A; Input voltage: at 134.62 V; Output current: 0.7875 A
3#:	97.9	777	13986	142.86	N/A	0.9912	2903	80.5	Input voltage: at 116.84 V; Output current: 0.7859 A; Input voltage: at 134.62 V; Output current: 0.7873 A
Arithmetic mean	97.8	784	14047	143.63	N/A	0.99	2909	81.0	—
Rating	100	1300	15000	150	N/A	0.92	3000	70	Program set max. output current 0.78 A
Limit	110	< 1430	13500	90	N/A	0.92	2870 to 3220	70	0.702 to 0.858
Verdict	P	P	P	P	N/A	P	P	P	P

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Table 1 – Energy efficiency test for full test model

Model No.:	YR10045-30-H		Rated wattage (W):	100		Frequency (Hz):	60	Stabilization time (h):	1
Test voltage for Supply current (V):	☐ 127 ☒ 220 ☐ 277			LED Control device: ☐ Control devices with non-stabilized output voltage ☐ Control devices with a stabilized output voltage ☐ Control devices with non-stabilized output current, ☒ Control devices having a stabilized output current					
Test items Sample No.	Lamp power (W)	Supply current (mA)	Initial luminous flux (lm)	Energy efficiency (lm/W)	luminous flux at 6000 h (lm)	Power factor ()	TCC (K)	Ra	Voltage and output current from the control device
1#:	96.9	465	14174	146.27	N/A	0.9546	2916	81	Input voltage: at 202.4 V; Output current: 0.7946 A; Input voltage: at 233.2 V; Output current: 0.8003 A
2#:	96.9	464	14189	146.43	N/A	0.9556	2908	80.7	Input voltage: at 202.4 V; Output current: 0.7953 A; Input voltage: at 233.2 V; Output current: 0.8012 A
3#:	99.2	459	14139	142.53	N/A	0.9548	2908	80.4	Input voltage: at 202.4 V; Output current: 0.7963 A; Input voltage: at 233.2 V; Output current: 0.8025 A
Arithmetic mean	97.7	463	14167	145.08	N/A	0.955	2911	80.7	—
Rating	100	1300	15000	150	N/A	0.92	3000	70	Program set max. output current 0.78 A
Limit	110	< 1430	13500	90	N/A	0.92	2870 to 3220	70	0.702 to 0.858
Verdict	P	P	P	P	N/A	P	P	P	P

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Continued Table 1

Harmonic current							
Harmonic Order (n)	Maximum harmonic measured (%)						Maximum harmonic currents limit (%)
Sample No.	22.	23.	24.	22.	23.	24.	—
voltage	127 V			220 V			
30 :	29.86	29.82	29.85	28.92	28.95	28.99	—
2	0.12	0.16	0.20	0.16	0.19	0.25	2
3	0.62	0.74	0.82	5.19	5.63	5.89	30
5	3.45	3.87	3.59	4.83	4.96	5.26	10
7	2.02	2.16	2.19	1.50	1.79	1.93	7
9	0.24	0.36	0.42	1.07	1.22	1.49	5
11 < n < 39 (Only odd harmonics)	1.09	1.11	1.26	1.66	1.89	1.98	3

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-30-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	250.1	28110	112.4	0.9965	
2#:	248.7	28079	112.9	0.9952	
3#:	249.2	28202	113.17	0.9971	
Arithmetic mean	249.3	28130	112.82	0.9963	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-30-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	245.2	28108	114.63	0.9763	
2#:	245.9	28098	114.27	0.9753	
3#:	245.1	28201	115.06	0.9769	
Arithmetic mean	245.4	28136	114.65	0.9762	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-30-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	202.4	24132	119.23	0.9944	
2#:	203.9	24095	118.17	0.9947	
3#:	203.1	24222	119.26	0.9948	
Arithmetic mean	203.1	24150	118.89	0.9946	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-30-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	202.1	24310	120.29	0.9656	
2#:	200.7	24240	120.78	0.9647	
3#:	201.0	24237	120.58	0.9656	
Arithmetic mean	201.3	24262	120.55	0.9653	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-30-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	144.3	17584	121.86	0.9932	
2#:	144.6	17499	121.02	0.993	
3#:	145.7	17618	120.92	0.993	
Arithmetic mean	144.9	17567	121.27	0.9931	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-30-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	149.4	18133	121.37	0.9598	
2#:	150.2	18093	120.46	0.9590	
3#:	149.6	18204	121.68	0.9593	
Arithmetic mean	149.7	18143	121.17	0.9594	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-30-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	97.4	12130	124.54	0.9878	
2#:	97.7	12212	124.99	0.9879	
3#:	96.9	12043	124.28	0.9883	
Arithmetic mean	97.3	12128	124.6	0.988	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-30-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	99.7	12267	123.04	0.9378	
2#:	98.2	12230	124.54	0.939	
3#:	99.7	12340	123.77	0.9378	
Arithmetic mean	99.2	12279	123.78	0.9382	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-30-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.5	5974	128.47	0.9783	
2#:	46.2	5969	129.2	0.9787	
3#:	48.0	6001	125.02	0.9786	
Arithmetic mean	46.9	5981	127.56	0.9785	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-30-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	47.5	5994	126.19	0.925	
2#:	46.9	5933	126.5	0.9255	
3#:	47.7	6019	126.18	0.9246	
Arithmetic mean	47.4	5982	126.29	0.925	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-40-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	233.0	28075	120.49	0.9962	
2#:	233.9	28071	120.01	0.9957	
3#:	233.4	28088	120.34	0.9955	
Arithmetic mean	233.4	28078	120.28	0.9958	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-40-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	231.6	28249	121.97	0.9723	
2#:	232.3	28227	121.51	0.9732	
3#:	233.0	28313	121.52	0.9716	
Arithmetic mean	232.3	28263	121.67	0.9724	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-40-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	144.9	18998	131.11	0.9928	
2#:	145.7	19028	130.6	0.9925	
3#:	146.1	19009	130.11	0.9933	
Arithmetic mean	145.6	19012	130.61	0.9929	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-40-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	148.4	19561	131.81	0.9595	
2#:	150.4	19573	130.14	0.9587	
3#:	149.8	19542	130.45	0.9598	
Arithmetic mean	149.5	19559	130.8	0.9593	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-40-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	94.1	14262	151.56	0.988	
2#:	94.9	14200	149.63	0.9874	
3#:	95.1	14278	150.14	0.9879	
Arithmetic mean	94.7	14247	150.44	0.9878	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-40-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	96.3	14585	151.45	0.938	
2#:	96.2	14540	151.14	0.9388	
3#:	96.4	14608	151.54	0.9386	
Arithmetic mean	96.3	14578	151.38	0.9385	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-40-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	48.4	6549	135.31	0.9816	
2#:	48.8	6552	134.26	0.9827	
3#:	47.9	6507	135.85	0.9804	
Arithmetic mean	48.4	6536	135.14	0.9816	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-40-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	47.4	6636	140.00	0.930	
2#:	49.2	6651	135.18	0.931	
3#:	48.8	6581	134.86	0.9308	
Arithmetic mean	48.5	6623	136.68	0.9306	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-50-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	245.1	29226	119.24	0.9958	
2#:	246.0	29145	118.48	0.9963	
3#:	245.9	29234	118.89	0.9959	
Arithmetic mean	245.7	29202	118.87	0.996	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-50-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	242.3	29514	121.81	0.9762	
2#:	242.1	29503	121.86	0.9762	
3#:	243.2	29552	121.51	0.9747	
Arithmetic mean	242.5	29523	121.73	0.9757	
Rating	240	31200	130	0.92	
Limit	264	28080	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-50-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	202.7	25811	127.34	0.9949	
2#:	200.9	25762	128.23	0.9954	
3#:	201.4	25904	128.62	0.9954	
Arithmetic mean	201.7	25826	128.06	0.9952	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-50-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	200.2	26019	129.97	0.9651	
2#:	201.4	26110	129.64	0.9652	
3#:	201.7	25973	128.77	0.9654	
Arithmetic mean	201.1	26034	129.46	0.9652	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-50-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	97.7	13231	135.42	0.9881	
2#:	97.4	13243	135.97	0.9876	
3#:	96.3	13221	137.29	0.9893	
Arithmetic mean	97.1	13232	136.23	0.9883	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-50-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	97.8	13453	137.56	0.9379	
2#:	97.4	13503	138.63	0.9372	
3#:	99.4	13388	134.69	0.9372	
Arithmetic mean	98.2	13448	136.96	0.9374	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-50-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	45.2	6714	148.54	0.9847	
2#:	44.9	6690	149.0	0.9852	
3#:	45.5	6690	147.03	0.9839	
Arithmetic mean	45.2	6698	148.19	0.9846	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-50-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.3	6753	145.85	0.9289	
2#:	45.3	6667	147.17	0.9295	
3#:	45.3	6821	150.57	0.9282	
Arithmetic mean	45.6	6747	147.86	0.9289	
Rating	50	6500	130	0.92	
Limit	55	5850	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-60-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	196.9	26810	136.16	0.9945	
2#:	195.7	26788	136.88	0.9935	
3#:	195.9	26785	136.73	0.9944	
Arithmetic mean	196.2	26794	136.59	0.9941	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-60-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	196.4	27178	138.38	0.9623	
2#:	196.2	27213	138.7	0.9629	
3#:	196.6	27260	138.66	0.9623	
Arithmetic mean	196.4	27217	138.58	0.9625	
Rating	200	26000	130	0.92	
Limit	220	23400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-60-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	146.8	20954	142.74	0.9922	
2#:	145.6	21007	144.28	0.9921	
3#:	146.0	21055	144.21	0.9918	
Arithmetic mean	146.1	21005	143.74	0.992	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-60-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	149.1	21516	144.31	0.9592	
2#:	150.3	21475	142.88	0.9587	
3#:	148.8	21456	144.19	0.959	
Arithmetic mean	149.4	21482	143.79	0.959	
Rating	150	19500	130	0.92	
Limit	165	17550	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-60-L	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	99.8	13908	139.36	0.9891	
2#:	100.9	13963	138.38	0.9895	
3#:	99.8	13844	138.72	0.9882	
Arithmetic mean	100.2	13905	138.82	0.9889	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-60-L	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	101.1	14051	138.98	0.9427	
2#:	100.2	14024	139.96	0.9438	
3#:	100.7	14146	140.48	0.9426	
Arithmetic mean	100.7	14074	139.81	0.943	
Rating	100	13000	130	0.92	
Limit	110	11700	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-30-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	249.9	33326	133.36	0.9962	
2#:	248.5	33281	133.93	0.9963	
3#:	250.8	33400	133.17	0.9974	
Arithmetic mean	249.7	33336	133.49	0.9966	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-30-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	223.7	33979	151.9	0.9598	
2#:	223.3	34003	152.27	0.9594	
3#:	224.5	33919	151.09	0.9586	
Arithmetic mean	223.8	33967	151.75	0.9593	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-30-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	190.6	28524	149.65	0.9915	
2#:	189.4	28453	150.23	0.9914	
3#:	189.9	28454	149.84	0.9908	
Arithmetic mean	190.0	28477	149.91	0.9912	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-30-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	186.0	28517	153.32	0.9437	
2#:	187.1	28605	152.89	0.9448	
3#:	185.5	28572	154.03	0.9434	
Arithmetic mean	186.2	28565	153.41	0.944	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-30-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	146.3	21465	146.72	0.9877	
2#:	145.2	21384	147.27	0.988	
3#:	146.2	21473	146.87	0.9886	
Arithmetic mean	145.9	21441	146.95	0.9881	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-30-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	144.7	21543	148.88	0.9332	
2#:	143.8	21504	149.54	0.9325	
3#:	143.0	21498	150.34	0.9342	
Arithmetic mean	143.8	21515	149.59	0.9333	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-30-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.8	6869	146.77	0.9774	
2#:	46.1	6870	149.02	0.9782	
3#:	46.3	6902	149.07	0.9765	
Arithmetic mean	46.4	6880	148.29	0.9774	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-30-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.1	6897	149.61	0.9208	
2#:	47.9	6946	145.01	0.9207	
3#:	46.3	6876	148.51	0.921	
Arithmetic mean	46.8	6906	147.71	0.9208	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-40-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	233.0	32573	139.8	0.9942	
2#:	233.3	32578	139.64	0.9933	
3#:	234.3	32652	139.36	0.9927	
Arithmetic mean	233.5	32601	139.6	0.9934	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-40-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	234.2	32498	138.76	0.9607	
2#:	233.3	32495	139.28	0.961	
3#:	234.4	32433	138.37	0.9614	
Arithmetic mean	234.0	32475	138.8	0.961	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-40-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	201.4	30649	152.18	0.9922	
2#:	199.6	30705	153.83	0.9921	
3#:	200.7	30715	153.04	0.9921	
Arithmetic mean	200.6	30690	153.02	0.9921	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-40-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	196.6	30731	156.31	0.9494	
2#:	197.8	30804	155.73	0.9487	
3#:	198.3	30780	155.22	0.9491	
Arithmetic mean	197.6	30772	155.75	0.9491	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-40-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	95.0	14271	150.22	0.989	
2#:	96.5	14319	148.38	0.9903	
3#:	95.9	14324	149.36	0.991	
Arithmetic mean	95.8	14305	149.32	0.9901	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-40-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	96.7	14445	149.38	0.9518	
2#:	97.1	14442	148.73	0.9509	
3#:	97.2	14350	147.63	0.952	
Arithmetic mean	97.0	14412	148.58	0.9516	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-40-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	47.7	7555	158.39	0.9798	
2#:	49.3	7482	151.76	0.9801	
3#:	48.8	7450	152.66	0.9797	
Arithmetic mean	48.6	7496	154.27	0.9799	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-40-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	49.2	7647	155.43	0.9197	
2#:	48.6	7624	156.87	0.9206	
3#:	48.6	7657	157.55	0.9207	
Arithmetic mean	48.8	7643	156.62	0.9203	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-50-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	237.6	32641	137.38	0.9931	
2#:	238.8	32557	136.34	0.9932	
3#:	239.7	32574	135.89	0.9938	
Arithmetic mean	238.7	32591	136.54	0.9934	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR24045-50-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	240		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	238.7	32723	137.09	0.9638	
2#:	237.9	32796	137.86	0.9629	
3#:	239.2	32655	136.52	0.9639	
Arithmetic mean	238.6	32725	137.16	0.9635	
Rating	240	36000	150	0.92	
Limit	264	32400	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-50-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	148.2	22594	152.46	0.9881	
2#:	147.9	22702	153.5	0.9878	
3#:	148.4	22551	151.96	0.9872	
Arithmetic mean	148.2	22616	152.64	0.9877	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

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Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-50-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	145.8	22662	155.43	0.9348	
2#:	145.9	22691	155.52	0.9341	
3#:	145.9	22656	155.28	0.9350	
Arithmetic mean	145.9	22670	155.41	0.9346	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-50-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	100.7	14792	146.89	0.9904	
2#:	100.4	14776	147.17	0.9896	
3#:	100.2	14826	147.96	0.9897	
Arithmetic mean	100.4	14798	147.34	0.9899	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-50-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	99.4	15124	152.15	0.9549	
2#:	100.2	15160	151.3	0.9555	
3#:	100.1	15193	151.78	0.9556	
Arithmetic mean	99.9	15159	151.74	0.9553	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-50-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.4	7258	156.42	0.9853	
2#:	44.9	7179	159.89	0.9841	
3#:	46.4	7272	156.72	0.9854	
Arithmetic mean	45.9	7236	157.68	0.9849	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-50-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	46.5	7314	157.29	0.9275	
2#:	46.3	7388	159.57	0.9284	
3#:	46.0	7272	158.09	0.9279	
Arithmetic mean	46.3	7325	158.32	0.9279	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-60-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	200.9	31548	157.03	0.9932	
2#:	201.6	31544	156.47	0.9936	
3#:	201.8	31630	156.74	0.9932	
Arithmetic mean	201.4	31574	156.75	0.9933	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR20045-60-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	200		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	198.3	31747	160.1	0.949	
2#:	197.8	31757	160.55	0.9487	
3#:	196.9	31647	160.73	0.949	
Arithmetic mean	197.7	31717	160.46	0.9489	
Rating	200	30000	150	0.92	
Limit	220	27000	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-60-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	140.8	22706	161.26	0.9877	
2#:	140.8	22679	161.07	0.9873	
3#:	141.5	22668	160.2	0.9874	
Arithmetic mean	141.0	22684	160.84	0.9875	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR15045-60-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	150	Stabilization time (h):	1		
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	138.9	22704	163.46	0.9302	
2#:	139.1	22681	163.06	0.9296	
3#:	139.5	22779	163.29	0.9285	
Arithmetic mean	139.2	22721	163.27	0.9294	
Rating	150	22500	150	0.92	
Limit	165	20250	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-60-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	93.9	14582	155.29	0.9903	
2#:	94.7	14554	153.69	0.9919	
3#:	93.3	14566	156.12	0.9895	
Arithmetic mean	94.0	14567	155.03	0.9906	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR10045-60-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	100		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	92.9	14504	156.12	0.9514	
2#:	92.9	14579	156.93	0.952	
3#:	92.6	14579	157.44	0.951	
Arithmetic mean	92.8	14554	156.83	0.9515	
Rating	100	15000	150	0.92	
Limit	110	13500	90	0.92	
Verdict	P	P	P	P	

Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-60-H	Test voltage (V):	127	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	51.7	6928	134.00	0.9829	
2#:	52.8	6888	130.45	0.9845	
3#:	52.6	6957	132.26	0.9837	
Arithmetic mean	52.4	6924	132.24	0.9837	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

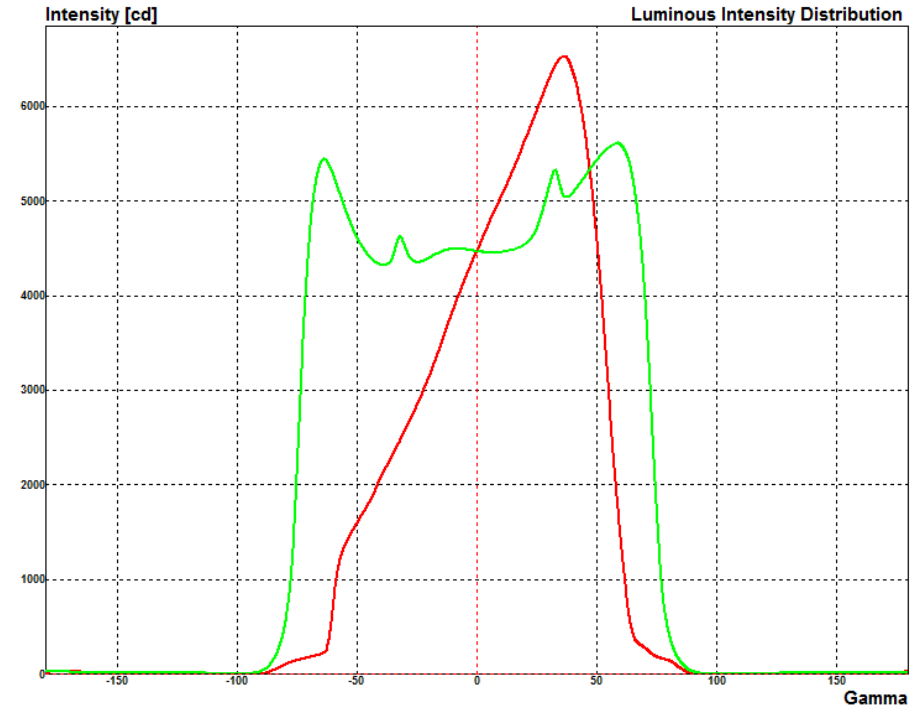
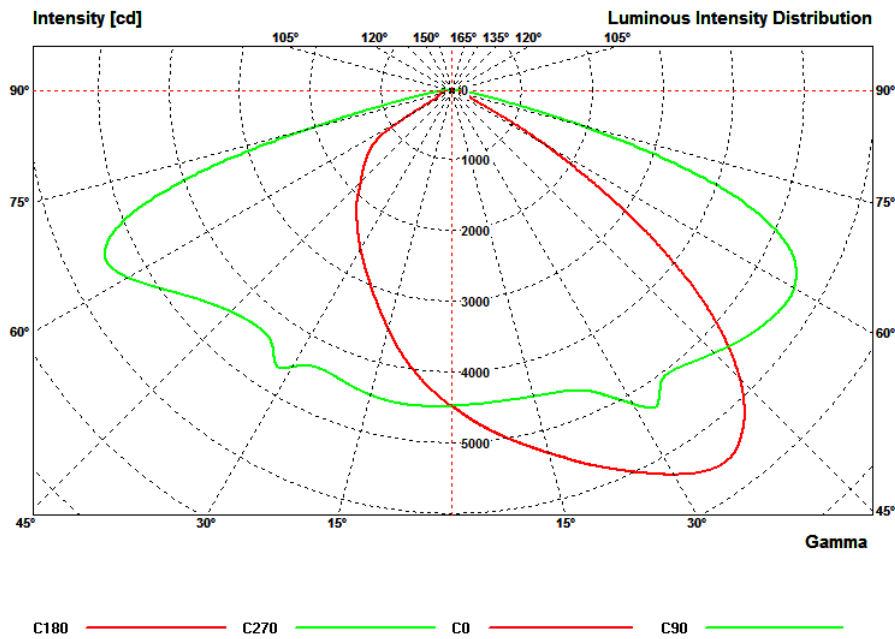
Ordinance no. 62/2022

Table 2 – Energy efficiency test for partly test model

Model No.:	YR05045-60-H	Test voltage (V):	220	Frequency (Hz):	60
Rated wattage (W):	50		Stabilization time (h):	1	
Test items Sample No.	Lamp power (W)	Initial luminous flux (lm)	Initial efficiency (lm/W)	Power factor ()	
1#:	51.7	7030	135.98	0.9355	
2#:	51.5	6944	134.83	0.9359	
3#:	51.3	7087	138.15	0.9353	
Arithmetic mean	51.5	7020	136.32	0.9356	
Rating	50	7500	150	0.92	
Limit	55	6750	90	0.92	
Verdict	P	P	P	P	

Annex 1:

The luminous distribution for YR24045-60-H



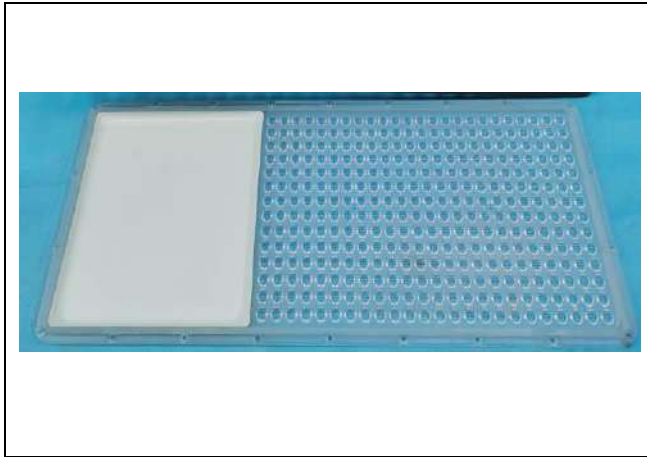
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Annex 2:

Summary of Results:

No.	Test Item	Test Method
1	Light Ageing Test- UV Exposure	ASTM G154-16 Cycle 3

Original Sample Photo:



Test Item: Light Ageing Test-UV Exposure

Sample Description: Plastic part

Test Method: ASTM G154-16 Cycle 3

Test Condition:

Exposure cycle:

ASTM G154-16 Cycle 3

Lamp type: UVB-313

8h UV at $(70 \pm 3)^\circ\text{C}$ BPT, $0.49\text{W}/(\text{m}^2 \cdot \text{nm})@310\text{nm}$

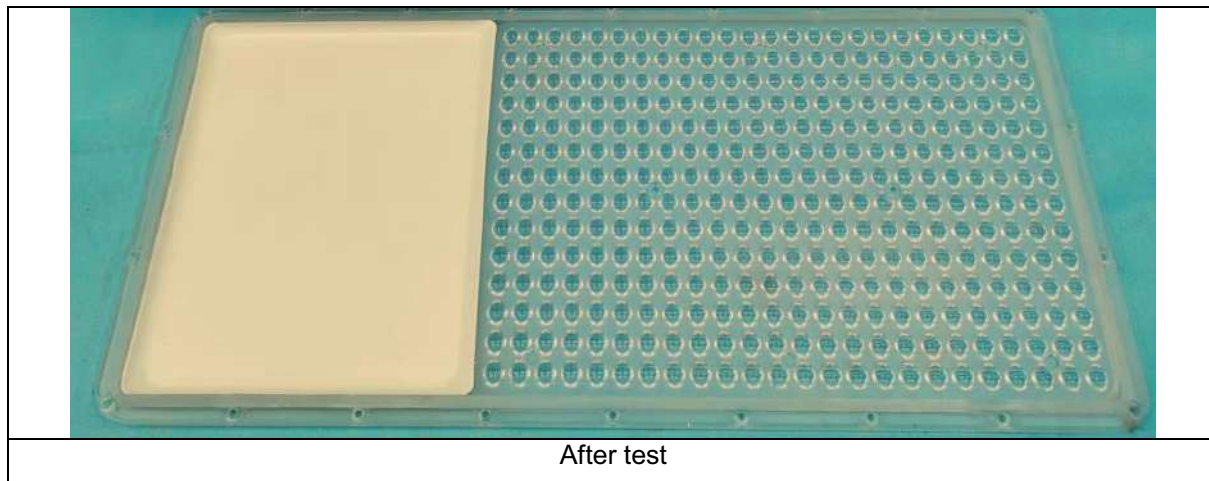
4h condensation at $(50 \pm 3)^\circ\text{C}$ BPT

Exposure duration: 2016 h

Test Date: 2024-05-10~2024-08-02

Ordinance no. 62/2022

Test Photo:



Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
UV Accelerated Weathering Tester	QUV/SE	GZMR-AG-E207	2023-12-14	2024-12-13

Attachment 1: Equipment list and measurement uncertainty

Equipment list of Safety and PF:

Equipment No.	Equipment Name	Model No.	Manufacturer	Next calibration
GZE006-24	Digital power analyzer	8776A	Qingzhi	2024/11/10
GZE010-3	Insulation tester	1508	Fluke	2025/3/5
GZE014-10	Oven	QYOV-100L	QiYa	2025/7/21
GZE015-1	Temp.& Humidity chamber	MHG-800RR	Terchy	2025/9/22
GZE016-41	Digital calipers	0-150mm/0.01mm	Guanglu	2025/4/12
GZE018-49	Test probe B (Jointed)	ZX-11	Zhilitong	2025/8/31
GZE020-45	Thermo-hygrometer	608-H1	testo	2025/7/11
GZE022-3	Glow-wire test apparatus(IEC60695-2-10:2013)	ZLT-GTR	ZLT	2025/1/15
GZE027-22	Digital stopwatch	PC894	Tianfu	2025/3/13
GZE068-21	Frequency power supply	AN97015TS	Ainuo	2025/8/29
GZE100-44	Data acquisition/switch unit	34972A	Agilent	2025/2/16
GZE120-2	Lamp cap torque tester	NJ210	Everfine	2025/9/19
GZE126-8	High accuracy array spectro-radiometer	HAAS-2000-VIS-V2	Everfine	2025/9/19
GZE126-9	Integrating sphere	AIS-2 2.0m R98	Everfine	2026/1/5
GZE126-22	Standard light source	D204H	Everfine	2025/8/7
GZE126-12	Digital CC&CV DC power supply	WY305	Everfine	2025/9/22
GZE126-14	AC Testing power source	DPS1010	Everfine	2025/9/22
GZE129-1	Goniophotometric system	GMS-1980	SENSING	2025/6/23
GZE126-39	Digital power analyzer	PF310A	Everfine	2025/4/19
GZE129-3	AC power source	APW-105N	ALL POWER	2025/7/7
GZE129-4	Total luminous flux standard lamp	110V/200W	SENSING	2025/4/17

Attachment 1: Equipment list and measurement uncertainty

For a 95% confidence level, the test result includes consideration of measurement uncertainty from the test equipment and methods, see below table:

Test Discipline	Frequency / Parameter	MU
Voltage	Up to 1000 V/ up to 1 kHz	±1,5 %
Current	Up to 5 A/ dc up to 60 Hz	±1,5 %
Power	(50/60 Hz) up to 3 kW	±3 %
Power Factor (50/60 Hz)	—	±0,05
Frequency	up to 10 kHz	±0,2 %
Temperature	- 35°C to below 100°C	±2
Timer	10 ms up to 200 ms	±5 %
	200 ms up to 1 s	±10 ms
	1 s and above	±1 %
Force	For all value	±6 %
Torque	For all value	±10 %
Angles	For all value	±1 degree
Relative humidity	30% to 95% RH	±6 % RH
Insulation resistance	For all value	±0.016MΩ
Spectro-radiometer	For all value	±3 %
High-accuracy Digital Photometer Head	For all value	±8.2 %

Attachment 2: Photo documentation

 Details of: General view of all 240 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom


 Details of: General view of all 240 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Attachment 2: Photo documentation

Details of: General view of all 200 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Details of: General view of all 200 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Attachment 2: Photo documentation

 Details of: General view of all 150 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom


 Details of: General view of all 150 W models

View:

- ☒ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Attachment 2: Photo documentation

Details of: General view of all 100 W models

View:

- ☐ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Details of: General view of all 100 W models

View:

- ☐ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Attachment 2: Photo documentation

Details of: General view of all 50 W models

View:

- ☐ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom



Details of: General view of all 50 W models

View:

- ☐ general
☐ front
☐ rear
☐ right
☐ left
☐ top
☐ bottom

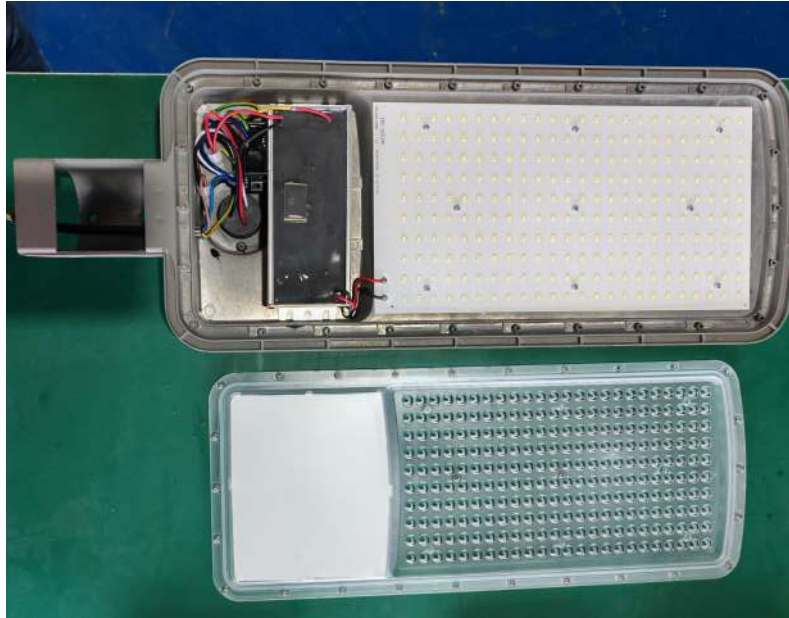


Attachment 2: Photo documentation

Details of: Internal view of YR24045-60-H, same as other models

View:

- ☐ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom



Details of: LED driver for 240 W models, similar to other driver

View:

- ☒ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom

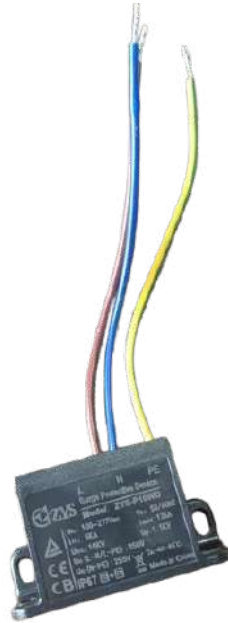


Attachment 2: Photo documentation

Details of: voltage surge protection device (ZP-LED-P10D) for each model

View:

- ☐ general
- ☐ front
- ☐ rear
- ☐ right
- ☐ left
- ☐ top
- ☐ bottom



--- End of Report ---



Thelma Leoni Sabim

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Livro: 17

Tradução nº: 1618

Folha 53

Documento: Relatório de Ensaio ANSI/IES LM-80-15-----

***Certifico e dou fé** para os devidos fins que me foi apresentado o documento em inglês acima referenciado o qual traduzo para o vernáculo no seguinte teor:*

[cabeçalho repetido em todas as páginas]

[ícone] Meide®

Guangdong Meide Testing Technology Co., Ltd.

NvLap® [ícone] ilac-MRA

TESTING

CÓDIGO NVLAP LAB: 600177-0

RELATÓRIO DE ENSAIO ANSI/IES LM-80-15

Métodos aprovados para medição do fluxo luminoso e manutenção de cores dos encapsulamentos, matrizes e módulos LED

Cliente.....: Shenzhen Tongyifang Optoelectronic Technology Co., Ltd.

Endereço.....: Edifício No.4, Parque Industrial XinLianHe, Estrada JinCheng, Vila ShaJing,
Distrito de BaoAn, Cidade de ShenZhen

Modelo em teste.....: SE3

Nome da marca.....: [imagem do logo] TYF LED

Laboratório de ensaios : Guangdong Meide Testing Technology Co., Ltd.

Endereço.....: 1º andar, Área B, Parque Industrial Jinbaisheng, Sede na Estrada 2, Lago Songshan, Zona de Desenvolvimento Industrial de Alta Tecnologia, Cidade de Dongguan, Província de Guangdong, China.

Local do ensaio.....: Mesmo que acima

Relatório No.....: C02A18100404L01001

Data do teste.....: 02/11/2018 a 25/11/2020

Data do relatório...: 04/12/2020

Testado por:

[assinatura]

Tim Qian/ Engenheiro de Teste

Verificado por:

[assinatura]

Luke Lei/ Eng. de Projetos

[ícone] Meide

* CERTIFICADO *

Guangdong Meide Testing Technology Co., Ltd.

Aprovado por:

[assinatura]

Jessie Li/Gerente Técnica

Nota 1: os dados do ensaio são válidos apenas para a(s) amostra(s) testada. Este relatório de ensaio foi preparado para o cliente acima indicado e para o dispositivo aqui descrito. Ele não pode ser duplicado nem usado parcialmente sem o consentimento prévio por escrito da Guangdong Meide Testing Technology Co., Ltd. Este relatório não deve ser usado pelo cliente para reivindicar certificação, aprovação ou endosso do produto pelo NVLAP.NIST ou qualquer agência do Governo Federal. Nota 2: Este relatório não implica certificação, aprovação ou endosso do produto pela NVLAP, NIST ou qualquer agência do Governo Federal.

Relatório nº: C02A18100404L01001

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[rodapé repetido em cada página]

Laboratório: Guangdong Meide Testing Technology Co., Ltd.

Endereço: 1º andar, Área B, Parque Industrial Jinbaisheng, Sede Estrada 2, Lago Songshan, Zona de Desenvolvimento de Alta Tecnologia Industrial

Cidade de Dongguan, Província de Guangdong, China.

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Livro: 17

Tradução nº: 1618

Folha 54

Folha de rosto ENERGY STAR® LM-80

Informações Administrativas

Série de subcomponentes testada:	Não aplicável
Número do modelo do subcomponente testado:	SE3
Data de emissão do relatório:	04/12/2020
Data de revisão do relatório (se aplicável):	Não aplicável
Data início do ensaio:	02/11/2018
Data conclusão do ensaio:	25/11/2020

Identificação do Dispositivo em Teste (DUT)

Nome do fabricante do DUT:	Shenzhen Tongyifang Optoelectronic Technology Co., Ltd.
Identificação do DUT, p.ex. núm. do modelo:	SE3
Descrição do DUT, inclusive se o dispositivo for um encapsulamento ou módulo de LED:	Encapsulamento LED

Características do DUT

Potência total de entrada (W):	2W
Densidade média de corrente por pastilha LED (mA/mm ²):	301,95 mA/mm ²
Densidade média de potência por pastilha LED (W/mm ²):	1,006 W/mm ²
IRC (Ra) representativo do conjunto de amostras em teste: (Indica se o valor relatado é o valor médio ou mediano do conjunto de amostras, ou por unidade)	80
Espaçamento mínimo entre as bordas da pastilha:	0,19 mm

Relatório nº: C02A18100404L01001

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Folha 56

1. Informações Gerais

1.1 Descrição das fontes de luz de LED

Tamanho da amostra:

Foram recebidas amostras de 50 unidades em 01/11/2018. As amostras foram numeradas de S1 a S25 e S26 a S50.

Fabricação:	Shenzhen Tongyifang OptoelectronicTechnologyCo., Ltd
Número de peça:	SE3
Tipo de peça:	Encapsulamento LED
Nível do dreno:	CC 300mA
TCC (Temperatura de Cor Correlata) nominal:	2700K
Potência:	2W
IRC (Índice de Renderização de Cores):	80

Método de amostragem:

As amostras de LED para testes IESNA LM-80 consistem em unidades construídas a partir de três lotes de fabricação, com cada lote composto de diferentes lotes de wafers produzidos em dias não consecutivos. Esses lotes de fabricação são escolhidos para representar uma ampla distribuição paramétrica.

Família de produtos abrangidos por este relatório:

De acordo com os Requisitos da ENERGY STAR® para o Uso de Dados LM-80, os seguintes produtos podem ser cobertos por este relatório com base nas informações e declarações fornecidas pelo fabricante. As informações desses modelos mostram que os produtos cobertos atendem os requisitos da seção 4 dos Requisitos da ENERGY STAR® para o uso de dados LM-80 (28 de setembro de 2017)

Este relatório abrange os seguintes modelos:

Nome do modelo	Corrente (mA)	Potência: (W)	Qtde de pastilhas	Densidade de corrente por pastilha (mA/mm ²)	Densidade de potência (W/mm ²)	Espacamento pastilhas (mm)	Corrente do driver da pastilha (mA)
Modelo em teste SE3	300	2	4	301,95	0,0022	0,19	150
SE32022	300	2	4	301,95	0,0022	0,19	150
SE32041	150	2	4	301,95	0,0022	0,19	150
SE32014	600	2	4	301,95	0,0022	0,19	150
SE31531	150	1.5	3	301,95	0.0017	0,19	150
SE31513	450	1.5	3	301,95	0.0017	0,19	150
SE31021	150	1	2	301,95	0.0011	0,19	150
SE31012	300	1	2	301,95	0.0011	0,19	150

Exclusão de responsabilidade:

A veracidade e precisão de todas as informações técnicas acima para os produtos LED cobertos são garantidas pelo fabricante da fonte de luz LED. Guangdong Meide Testing TechnologyCo., Ltd. não é responsável tampouco oferece qualquer garantia pela veracidade das informações técnicas.

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1.2 Padrões usados

- Método aprovado pela IES ANSI/IES LM-80-15 para fluxo luminoso e manutenção de cores dos encapsulamentos, matrizes e módulos
- Requisitos da ENERGY STAR® para o uso de dados LM-80 (Este padrão não foi credenciado pelo NVLAP)

1.3 Lista de equipamentos do ensaio

Equipamento do ensaio	No. de série	No. modelo	Vcto. da calibração
Sistema de esfera integradora	MD-E033	0.5m	19/05/2021
Fonte de luz padrão	MD-E034	D062	19/05/2021
Radiômetro de matriz de alta precisão	MD-E011	HAAS-3000	2021/09/29
Medidor digital de energia	MD-E008	PF310	2021/09/29
Fonte de alimentação CC estabilizada digital de precisão	MD-E009	WY305	2021/09/29
Testador de temperatura	MD-E038	UFS-D8036	17/06/2021

Declaração de rastreabilidade: Guangdong Meide Testing Technology Co., Ltd. atestou que toda a calibração foi realizada usando padrões adequados rastreáveis aos padrões primários nacionais e ao Sistema Internacional de Unidade (SI).

1.4 Nível de dreno

As amostras são acionadas com corrente contínua constante (CC) durante testes de manutenção, medições fotométricas e elétricas. O valor da corrente foi regulado dentro de $\pm 3\%$ do valor especificado pelo fabricante durante o teste de manutenção, e ficou dentro de $\pm 0,5\%$ durante o teste de medição fotométrica e elétrica.

1.5 Condições ambientais para teste de manutenção

Para o teste de manutenção do lúmen, as amostras dentro de um conjunto de dados foram instaladas em placas de resfriamento em câmaras térmicas com fluxo mínimo de ar ambiente. A temperatura do invólucro e a temperatura ambiente foram monitoradas por termopares, um dos quais foi soldado ao ponto mais frio do invólucro do dispositivo em teste (TMP do LED), enquanto o outro foi montado a uma distância de 5 mm acima do local do ponto de medição de temperatura.

Durante o ensaio de vida, os pontos de medição de temperatura (TMP) dos LEDs mais frios foram mantidos a uma temperatura maior ou igual a 2°C abaixo da temperatura nominal do invólucro. O ar circundante foi mantido a uma temperatura maior ou igual a 5°C abaixo da temperatura nominal do invólucro. Os termopares foram protegidos da radiação óptica direta do dispositivo em teste e estão em conformidade com a ASTM E230 Tabela 1 "Limites Especiais".

As amostras foram conectadas à fonte de alimentação CC em circuitos em série com corrente constante. A corrente direta foi regulada dentro de $\pm 3\%$ do valor especificado pelo fabricante.

A umidade relativa dentro da câmara foi mantida abaixo de 65% durante o ensaio.

Para medição fotométrica, a temperatura ambiente durante o ensaio foi ajustada para $25^\circ\text{C} \pm 2^\circ\text{C}$, UR < 65%.

1.6 Método de medição fotométrica

A esfera integradora e o radiômetro foram usados para medir o fluxo luminoso e foi usada a medição da coordenada de cromaticidade $u'v'$.2n e a amostra foi energizada pela fonte de alimentação CC. A corrente direta foi regulada dentro de $\pm 0,5\%$ do valor nominal. O sistema de teste foi calibrado usando lâmpada halógena de referência. A temperatura ambiente durante o teste foi ajustada para $25^\circ\text{C} \pm 2^\circ\text{C}$, umidade relativa < 65%. O ponto de medição de temperatura foi localizado na esfera e a temperatura foi detectada por uma sonda de temperatura.

A incerteza das medições de saída de luz (fluxo luminoso) é $U = 2,1\%$ ($K = 2$), no nível de confiança de 95%. A incerteza das medições de temperatura de cor correlacionadas é $U = 18\text{K}$ ($K = 2$), no nível de confiança de 95%. A incerteza da temperatura é $U = 0,5^\circ\text{C}$ ($K = 2$), no nível de confiança de 95%.



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1.7 Conjunto de amostras

Conjunto de dados 1:85°C,300mA	
Número de peça:	SE3
Número de unidades:	25
Temp. do invólucro (TS):	>83°C
Temperatura ambiente (TA):	>80°C
Corrente de dreno do teste de vida:	300mA
Corrente de medição:	300mA

Conjunto de dados 2:105°C,300mA	
Número de peça:	SE3
Número de unidades:	25
Temp. do invólucro (TS):	>103°C
Temperatura ambiente (TA):	>100°C
Corrente de dreno do teste de vida:	300mA
Corrente de medição:	300mA

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2. SUMÁRIO DOS RESULTADOS DO ENSAIO

Conj. dados:	Tamanho amostra	Falhas observadas:	Intervalo do teste	Duração do teste	α	β	Duração L70 TM-21 relatada	Duração L90 TM-21 relatada
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Média da manutenção do fluxo (porcentagem do fluxo luminoso inicial)

[2 tabelas sendo que apenas os cabeçalhos constam na tradução. Para valores, ver o original]

Conj. dados	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000h
-------------	--------	--------	--------	--------	--------	--------	--------	--------	-------

Conj. dados	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000h
-------------	---------	---------	---------	---------	---------	---------	---------	---------	--------

Média da manutenção do fluxo de fótons fotossintéticos (porcentagem do fluxo de fótons fotossintéticos)

[2 tabelas sendo que apenas os cabeçalhos constam na tradução. Para valores, ver o original]

Conj. dados	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000h
-------------	--------	--------	--------	--------	--------	--------	--------	--------	-------

Conj. dados	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000h
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Média da variação de cromaticidade ($\Delta u'v'$)

[2 tabelas sendo que apenas os cabeçalhos constam na tradução. Para valores, ver o original]

Conj. dados	1000 h	2000 h	3000 h	4000 h	5000 h	6000 h	7000 h	8000 h	9000h
-------------	--------	--------	--------	--------	--------	--------	--------	--------	-------

Conj. dados	10000 h	11000 h	12000 h	13000 h	14000 h	15000 h	16000 h	17000 h	18000h
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Manutenção do fluxo (%)
[gráfico]

Manutenção do PPF (%)
[gráfico]

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Variação de cromaticidade ($\Delta u' v'$)
[gráfico]

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3. Dados do ensaio

3.1 Conjunto de dados 1, 85°C, 300mA (manutenção de lúmen)
[tabela]

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3.2 Conjunto de dados 1, 85°C, 300mA (manutenção do fluxo de fótons fotossintéticos)
[tabela]

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3.3 Conjunto de dados 1, 85°C, 300mA (tensão direta)
[tabela]

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3.4 Conjunto de dados 1, 85°C, 300mA (variação de cromaticidade)
[tabela]

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3.5 Conjunto de dados 2, 105°C, 300mA (manutenção de lúmen)
[tabela]

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3.6 Conjunto de dados 2, 105°C, 300mA (manutenção do fluxo de fótons fotossintéticos)
[tabela]

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3.7 Conjunto de dados 2, 105°C, 300mA (tensão direta)

[tabela]

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3.8 Conjunto de dados 2, 105°C, 300mA (variação de cromaticidade)

[tabela]

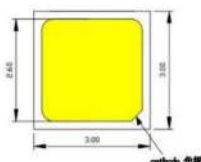
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4. FOTO DO EQUIPAMENTO EM TESTE

4.1 Dimensões mecânicas

[imagem]



Todas as dimensões estão em milímetros

4.2 Foto do equipamento em teste

[imagem]

***** FIM DO RELATÓRIO DE ENSAIO *****

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