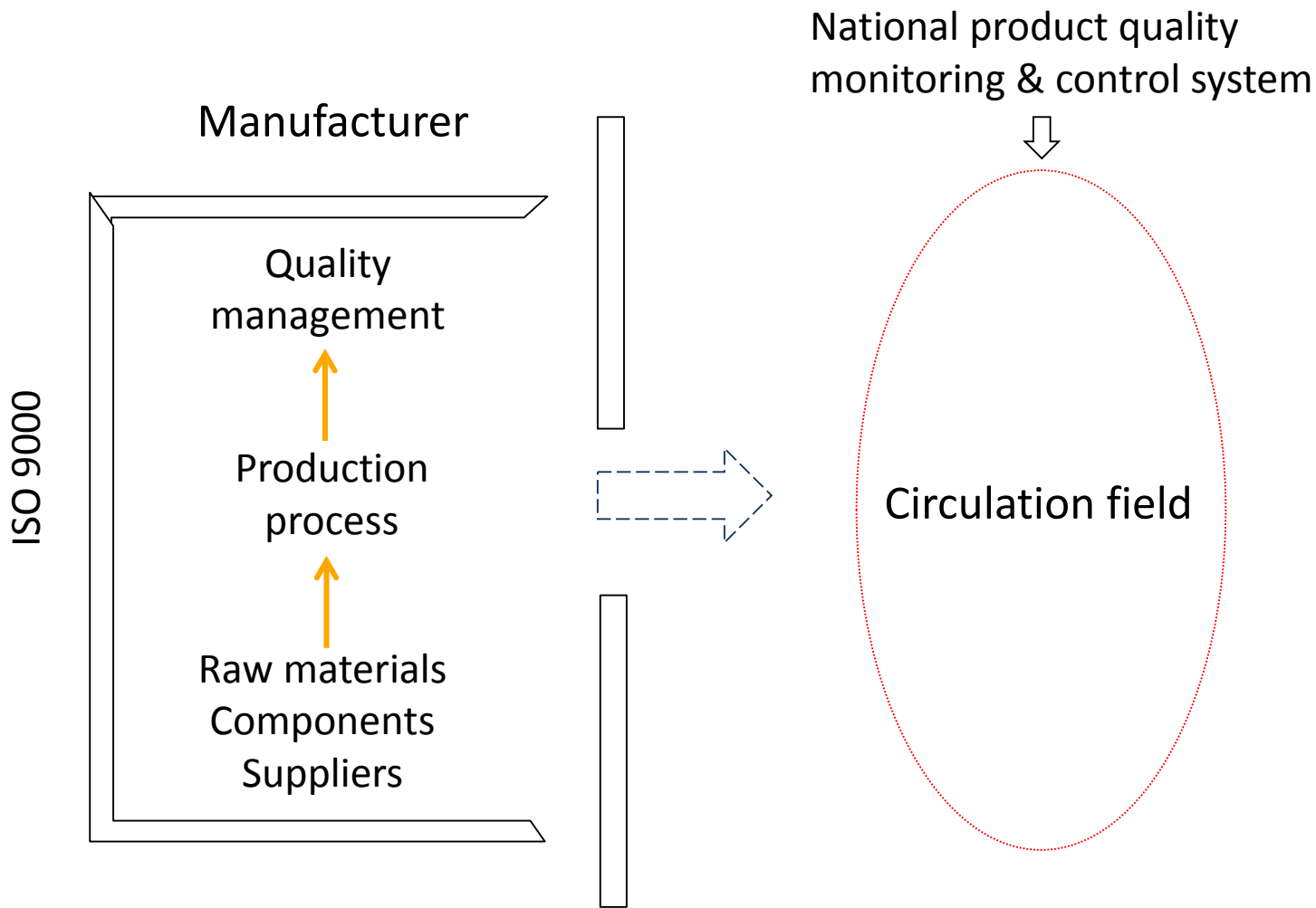




How Does A Lighting Laboratory Play Its Role In MVE

Jing Wang
Global Efficient Lighting Centre

Product Quality Control



Product quality control

National product quality monitoring & control system



Legislations, policies

National standards



Laboratory

PRODUCT GOAL:

- ✓ Safety
- ✓ Environmental protection
- ✓ Functions (basic/high level)



ACHIEVE THE PRODUCT GOAL



HARDWARE SUPPORT PLATFORM

International standard organization

IEC

International Electrotechnical Commission(IEC) ,1906

Scope :International Standards for all electrical, electronic and related technologies
TC 34: Lamps & related equipment

Chracteristics of Products

CIE

International Commission on Illumination

Scope: the science and art of light and lighting, colour and vision, photobiology and image technology.
Division 1,2,3,4,5,6,8

Fundamental, including testing method

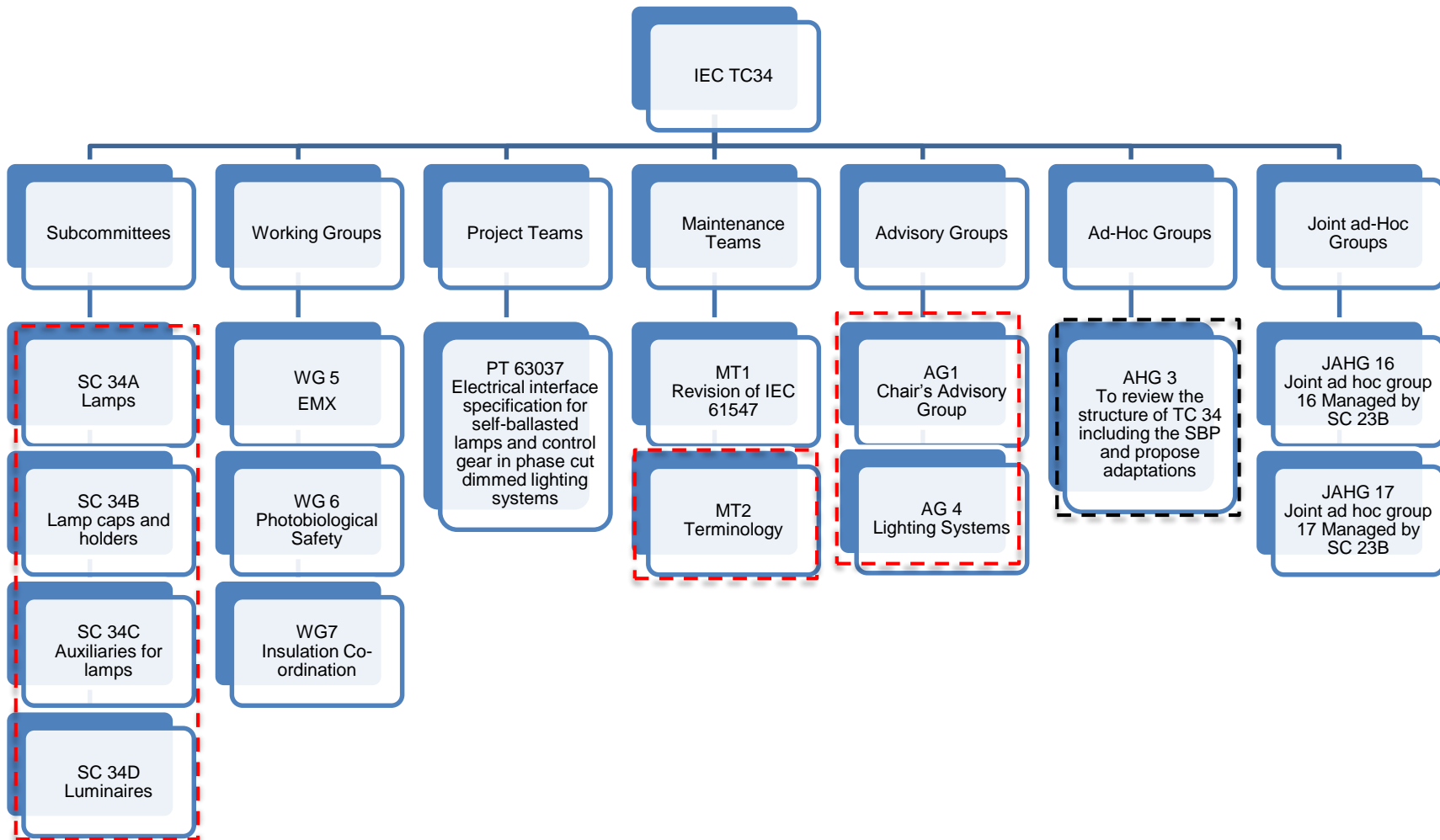
ISO

International Organization for Standardization

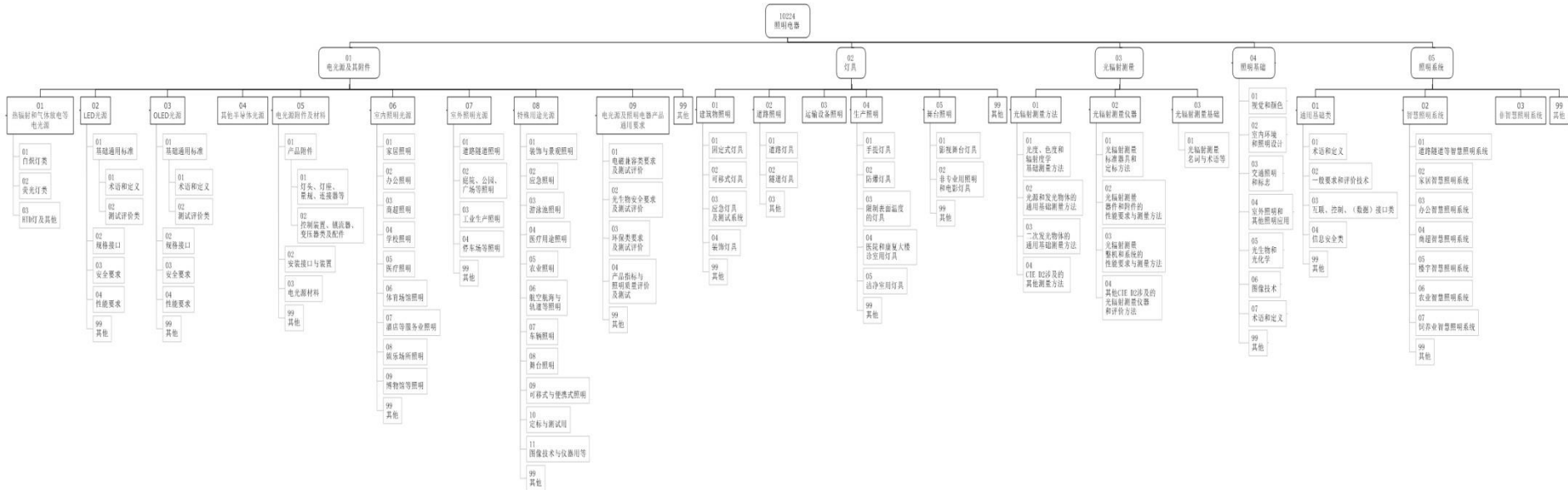
Scope: covering almost every industry, from technology, to food safety, to agriculture and healthcare.
ISO TC 274 Light and lighting

Application

IEC lighting standardization



China lighting standardization framework



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ACHIEVE THE PRODUCT GOAL



HARDWARE SUPPORT PLATFORM

Laboratory

Hardware

Equipments

- ✓ Integrating sphere
- ✓ Goniophotometer
- ✓

Facilities

- ✓ Buildings
- ✓ Electricity
- ✓ Water
- ✓

Environment conditions

- ✓ Temperature
- ✓ Humidity
- ✓ EMC environment
- ✓ Chemical environment
- ✓ Hygienic environment

Software

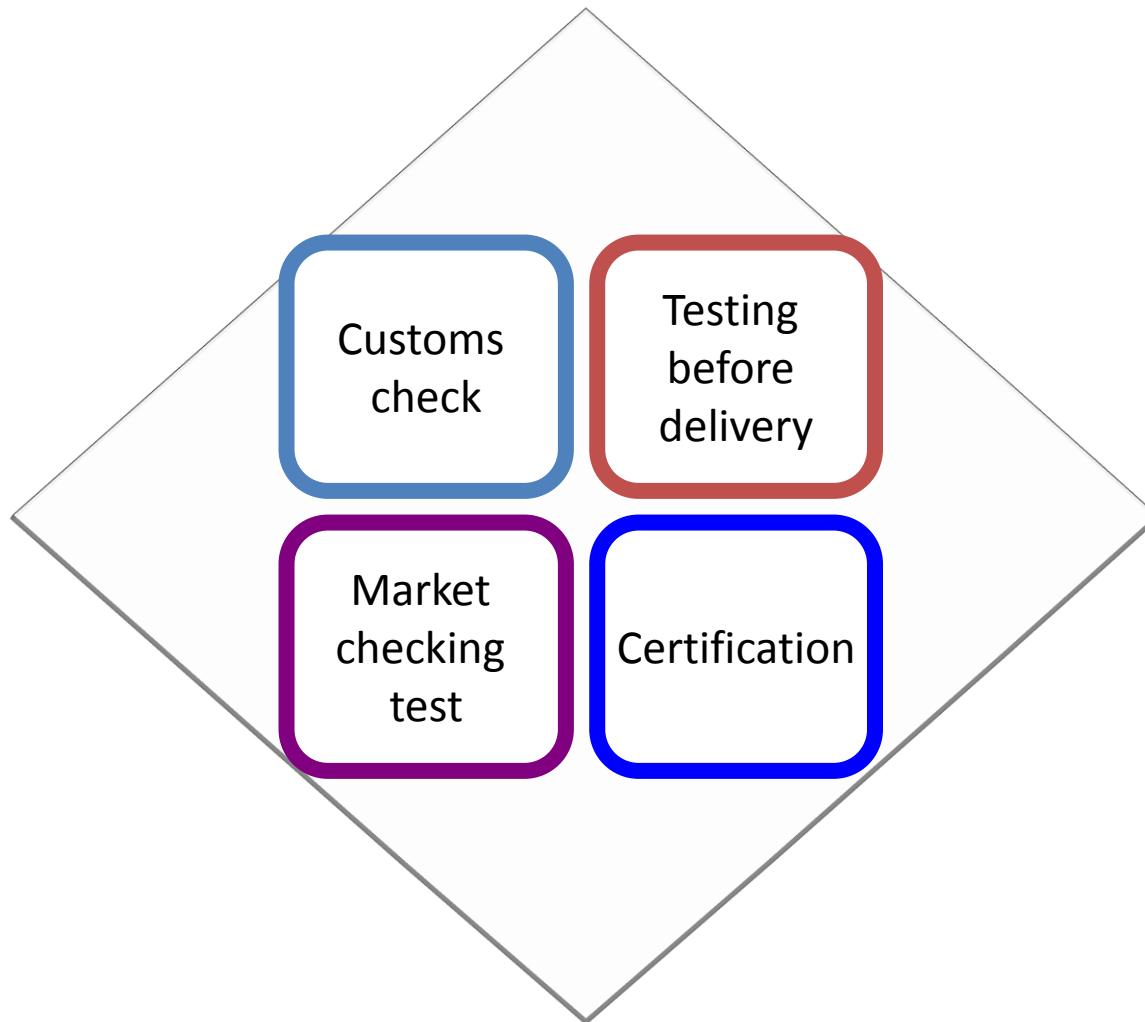
Technology knowledge

- ✓ Testing (equipment, testing, calibration)
- ✓ Standard
- ✓ Products
- ✓ Lighting application
- ✓

Quality management

- ✓ ISO/IEC 17025

Product quality control



Customs check

- First protective screen
 - Radom check
-
- Lighting is a very small part but with different kinds of products
 - Technical issue? Testing issue?



Testing before delivery

Testing
through an
entrusted
laboratory

- Develop sampling and conformity scheme
- Testing according to standards

- A. Sampling by batch
- B. Factory check

Market checking test

The last checking before it goes to the consumers

Shows good effect

- Lots of brands
- Large coverage
 - City
 - Countryside
 - Remote area
- High cost
 - Travels, HRs
 - Rigorous testing
 - Procedure (legal, reasonable, strict)
- Risk

The sword of Damocles



Market checking test

The sword of Damocles



- Media release
- Economic punishment
- Recall
- Legal redress
- Criminal liability



Market checking test --- CFL standards

China CFLs standards:

- Safety standard: equal to IEC 60968
- EMC standard: equal to IEC 61000-3-2, IEC 61547, CISPR15
- Performance standard requires
 - efficacy
 - luminous maintenance
 - colour characteristics
 - power factor
 - mercury content
- Energy efficiency standard

Market checking test --- LED standards

IEC

- IEC 62504
- IEC 62031
- IEC 62717
- IEC 62560
- IEC 62612
- IEC 62776
- IEC 60050-845
- IEC 62663-1
- IEC 62663-2
- IEC 62722-2-1
- IEC 62838
- IEC 62931
- IEC/TS 62861
- IEC 63013

China

- GB 7000.1
- GB/T 24907
- GB 7000.203
- GB 7000.202
- GB/T 29294
- GB/T 29293
- GB 24906
- GB/T 29296
- GB/T 31111
- GB/T 29295
- GB 24906
- GB/T 24908
- GB 30255
- GB/T 31112
- GB 19651.3
- GB 19510.14
- GB 24819
- GB/T 24823
- GB/T 24824
- GB/T 24825
- GB/T 24826
- GB/T 24909
- GB/T 30104.207
- GB/T 30413
- QB/T 4057
- QB/T 4146

Certification

A. System certification

ISO 9000

ISO 14000

ISO 18000

B. Product certification

- a) Design qualification
- b) Type test (key components/materials and product structure fixed)
- c) Sampling test or inspection in the production field
- d) Sampling test or inspection in the market
- e) Product consistency check with product quality guarantee ability
- f) Follow up inspection after obtaining the certificate
 - Regular inspection
 - Non-regular inspection
 - Market inspection

Certification

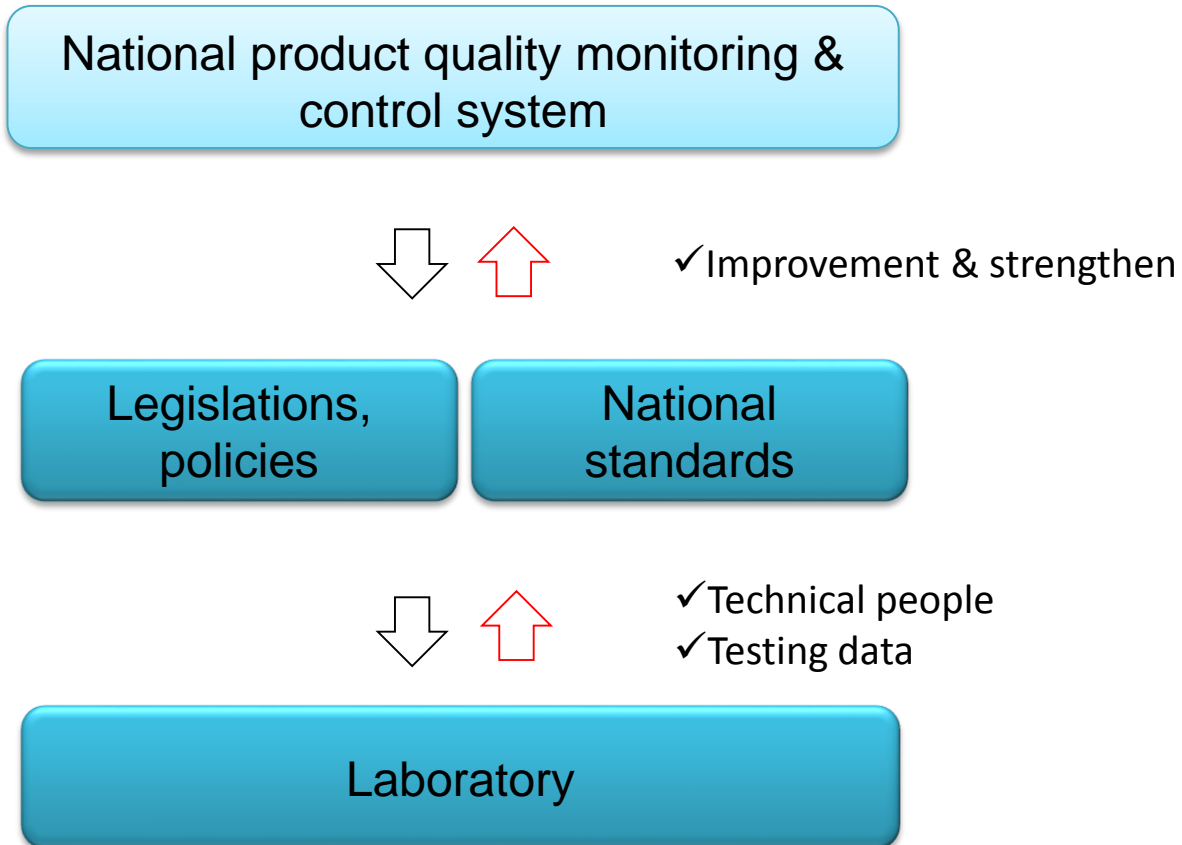
Safety certification

- GB 7000.1
- GB 7000.201
- GB 7000.202
- GB 7000.203
- GB 24906
- GB 16843
- GB 18774
- GB 16844
- GB 17743
- GB 17625.1

Energy saving certification

- CQC 3147 (LED panel)
- CQC 3127 (LED street lighting & tunnel lighting)
- CQC 3128 (LED downlight)
- CQC 3129 (LED reflector)
- CQC 3148 (LED tube)
- CQC 3130 (LED bulb)
- GB/T 17263 (CFL)

Product quality control



Thank you!





The Climate Technology Centre and Network (CTCN) fosters technology transfer and deployment at the request of developing countries through three core services: technical assistance, capacity building and scaling up international collaboration. The Centre is the operational arm of the UNFCCC Technology Mechanism, it is hosted and managed by the United Nations Environment and the United Nations Industrial Development Organization (UNIDO), and supported by more than 300 network partners around the world.

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