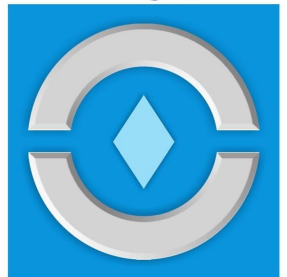




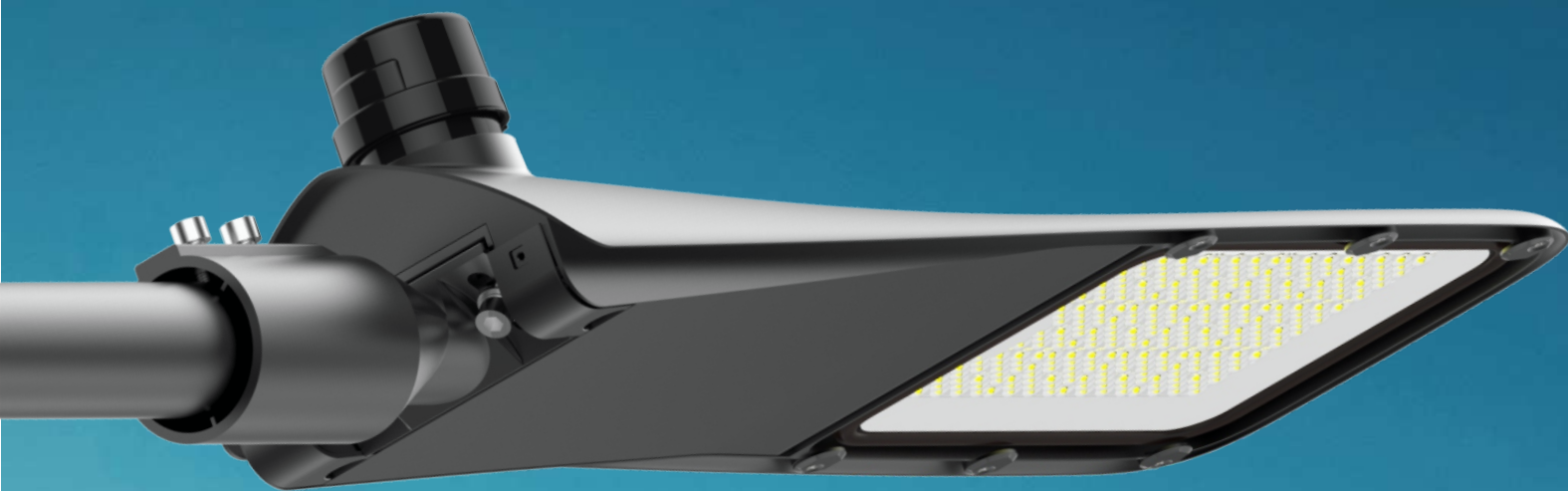
نور عمان



NOOROMAN

**SL-NL13**

**LED Street Light**



## **Black Sword LED Street Light**

Energy efficiency through  
innovative design.



# Key Features

The unique programmable driver makes the Smart City Ready feature respond effortlessly to all your changing lighting needs.

## Overview



## Detail



### 01 LED Power Supply

- A variety of drivers are available.



### 02 Wireless control system

- To establish smart city operation, energy conservation and environmental protection.



### 03 Photocell / NEMA 3/5/7 PIN

- Lamp will automatically turn on and off according to lux difference.
- NEMA 3/5/7 PIN available



### 04 Modular LED lens design

- Optional light distribution curve available with optics Type I M Type II M, Type III (S/M).
- High efficiency LED Type source.



### 05 Imported Breather

- Lamp breather ensures air balance inside and outside of the luminaire which improves the street lights' service life.



### 06 Detachable connect base

- Easy disassembly for reduced maintenance costs.



### 07 10kV Surge Protection Device

- Extends the lifetime of the product while also protecting the driver and the luminaire from lightnings.
- CLASS I

# Advantages & Applications

An optimised and fully certified LED lighting solution that provides a cost effective and fast return on investment.

Advantages

01

Tempered glass with 94% light transmittance

02

High intensity marine grade, die-cast aluminium body with an IK08 impact grade and tempered glass cover rated IK08.

03

High product reliability by applying 13 steps painting process.

04

High efficiency coating. Paint and metal parts successfully passed the 500 hours salt spray test.

05

Modular optical lens design, easy to upgrade in the future.

06

Detachable design and use of fast turn off power protector render this luminaire convenient and safe for maintenance.

06

10kV Surge Protection Device included & 20kV Surge Protection Device optional.

07

Available with Electrical Protection Class I

08

Cost-effective and efficient lighting solution for a fast return of investment.

09

3 sizes for flexibility

10

Easy installation and maintenance

11

Programmable Drivers - Smart-ready

12

ENEC CLASS I

Characteristics		
01	Power consumption	30W-250W
02	Typical Luminaire output flux	4800Lm-38400Lm
03	Colour temperature	2200K - 6500K
04	CRI	CRI70, CRI80 available on request
05	LED Chip	LUMILEDS 3030 / 5050
06	Nominal voltage	AC100-277V, 50/60Hz
06	Driver Brand	Inventronics (IP67)
07	Surge Protection	10kV
08	Smart Control Options	Wireless Control System/ Photocell/Dimming
09	Product IP Class	IP66
10	Material	Die cast aluminium & Tempered glass
11	Housing Colour	Black / Grey / Other colours available on request
12	Installation options	Vertical Pole / Horizontal Pole
13	Recommended Installation Height	4m - 12m
14	Operating temperature	-40 °C ~ +55 °C
15	Optics	Type I M, Type II M, Type III S/M

Certificates

7yrs  
Warranty

5yrs  
Warranty

CE

RoHS

emc

IP66

IK08

ENEC CLASS I

LM80  
14000hrs

155Lm/W

170Lm/W

500hrs  
Salt Spray  
Test

Applications			
	01 Roads & Motorways		02 Urban & Residential Streets
	03 Bike & Pedestrian paths		05 Parking lots
	04 Public squares & Pedestrian Streets		06 Bridges
	07 Industrial areas		08 Railway & Metro stations



# Housing & Installation

The unique ergonomic housing design enables easy on-site maintenance and installation. The die cast aluminium housing protects the interior components and ensures longevity and durability in demanding conditions.

## Housing



### 01 PC optical lens module

- Special optic lenses provide light uniformity which optimizes the lamp's light distribution and efficiency
- Anti-aging
- Anti-ultraviolet radiation
- 142° C High temperature resistance
- 110° C Low temperature resistance



### 02 Double lamp body protection

- Super Toughened glass
- Toughened 3N/cm
- Surface stress resistance  $\geq 87\text{Mpa}$
- Internal parts
- Anti-aging ability



### 03 Al-Si-Cu Alloy Die Casting Housing

- Tensile strength reaches 288.3N/mm<sup>2</sup>
- Impact level up to IK08
- IEC 62262;2002
- Protection level of outer shell for external mechanical collision
- Stainless steel screws
- Structure allows air flow through heat sink for optimum heat management

## Clip-on design

Clip-on design, makes lamp easy to install, maintain and replace.



## Installation

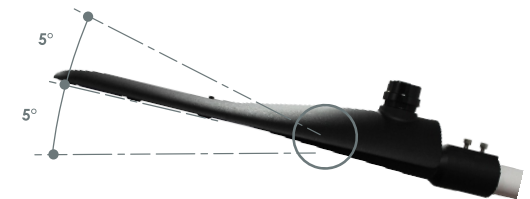
The adjustable bracket allows horizontal or vertical installation.



Horizontal Installation



Vertical Installation



Adjustable Light Angle

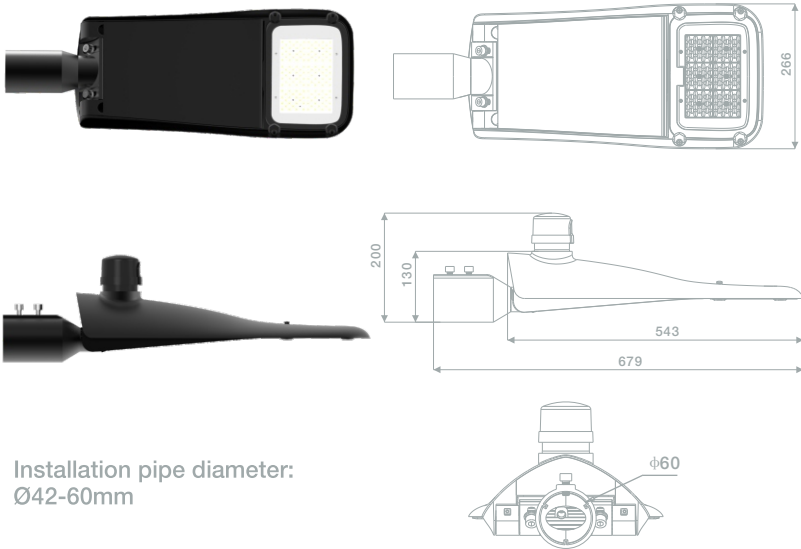
# Model Variants & Technical details

A complete and versatile range of lighting solutions  
for all road conditions.

A Model 30W/ 60W/ 80W

144 LED pieces

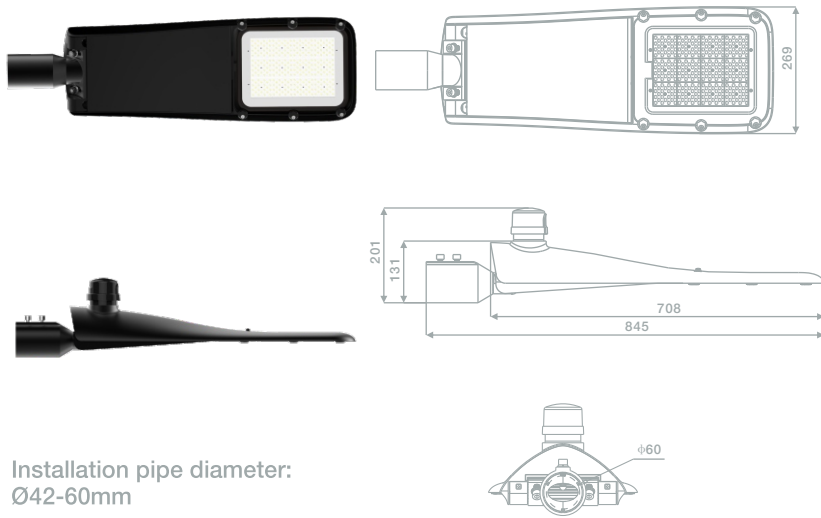
155 Lm/W



B Model 100W/ 120W/ 150W

288 LED pieces

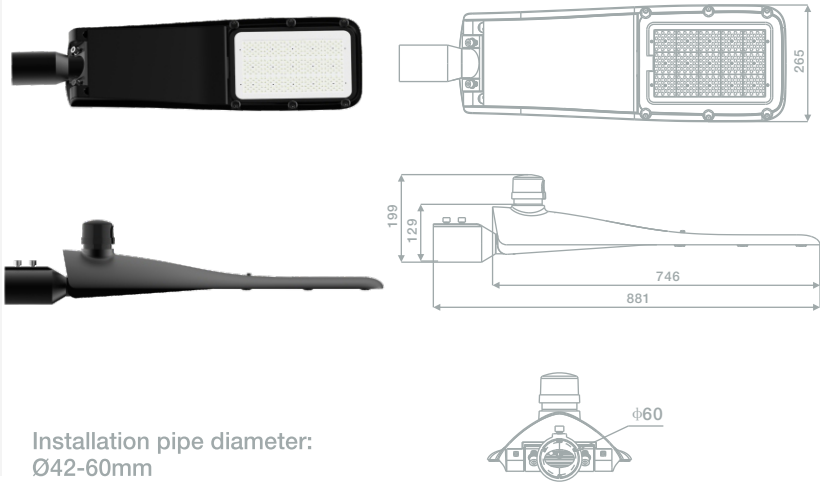
160 Lm/W



C Model 180W/ 200W/ 250W

360 LED pieces

160 Lm/W

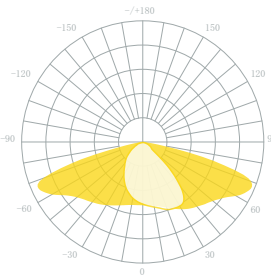


# Light performance & Distribution

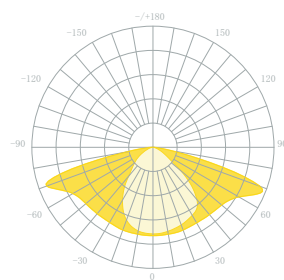
The Black Sword LED street light solution offers reliable optical performance and durability for efficient light coverage in the most demanding situations.

## Light Distribution Diagram

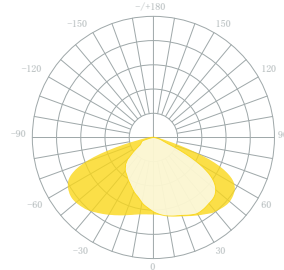
### Type I-M



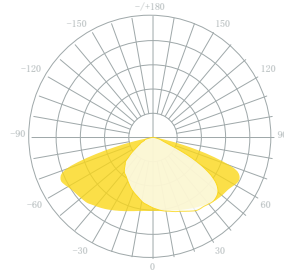
### Type II-M



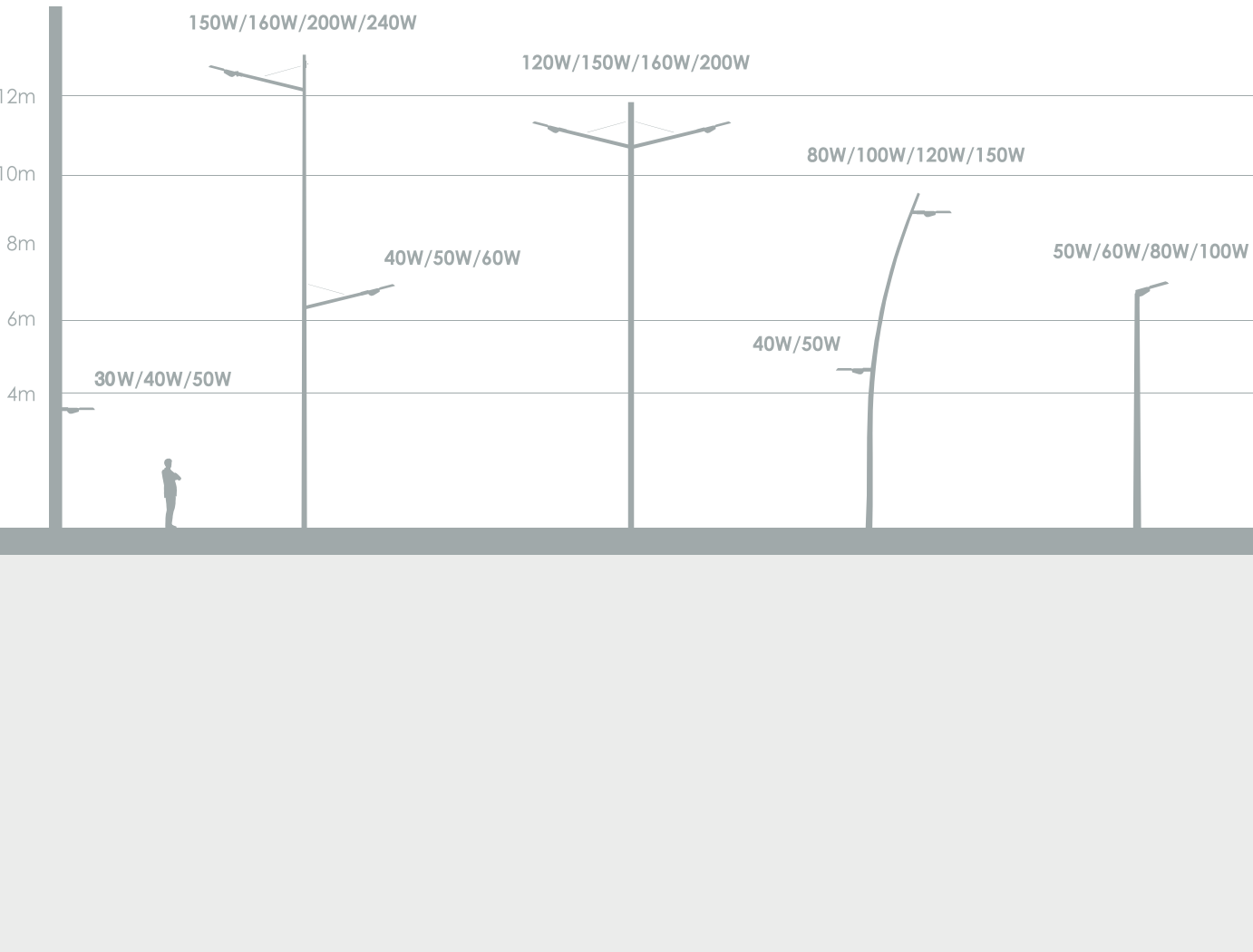
### Type III-S



### Type III-M



## Pole Selection





# Protection ratings & Specifications

## Specifications - CLASS I

Model	Wattage	LED Brand	LED pcs	LPW	Luminous flux	Input Voltage	Driver	Material	Pole Diameter	Cartonsize (MM)	G.W. (KG)
SL-NL13-30W	30W/A	LUMILEDS	144	170Lm/W	5100Lm	100-277V	EUM-075S	ADC12/ PC/ Toughened Glass	Φ42-60mm	715*315*195/1CTN 715*270*320/2CTN	6 11.5
SL-NL13-60W	60W/A	LUMILEDS	144	170Lm/W	8500Lm	100-277V	EUM-075S	ADC12/ PC/ Toughened Glass	Φ42-60mm	715*315*195/1CTN 715*270*320/2CTN	6 11.5
SL-NL13-80W	80W/A	LUMILEDS	144	150Lm/W	12000Lm	100-277V	EUM-100S	ADC12/ PC/ Toughened Glass	Φ42-60mm	715*315*195/1CTN 715*270*320/2CTN	6.1 11.7
SL-NL13-100W	100W/B	LUMILEDS	288	165Lm/W	16500Lm	100-277V	EUM-100S	ADC12/ PC/ Toughened Glass	Φ42-60mm	882*315*195/1CTN 882*270*320/2CTN	7.2 13.6
SL-NL13-120W	120W/B	LUMILEDS	288	162Lm/W	19440Lm	100-277V	EUM-150S	ADC12/ PC/ Toughened Glass	Φ42-60mm	882*315*195/1CTN 882*270*320/2CTN	7.2 13.6
SL-NL13-150W	150W/B	LUMILEDS	288	155Lm/W	23250Lm	100-277V	EUM-150S	ADC12/ PC/ Toughened Glass	Φ42-60mm	882*315*195/1CTN 882*270*320/2CTN	7.2 13.6
SL-NL13-180W	180W/C	LUMILEDS	360	165Lm/W	29700Lm	100-277V	EUM-200S	ADC12/ PC/ Toughened Glass	Φ42-60mm	920*270*320/1CTN 882*270*320/2CTN	8 15.5
SL-NL13-200W	200W/C	LUMILEDS	360	160Lm/W	32000Lm	100-277V	EUM-200S	ADC12/ PC/ Toughened Glass	Φ42-60mm	920*270*320/1CTN 882*270*320/2CTN	8 15.6
SL-NL13-250W	240W/C	LUMILEDS	360	150Lm/W	36000Lm	100-277V	EUM-240S	ADC12/ PC/ Toughened Glass	Φ42-60mm	920*270*320/1CTN 882*270*320/2CTN	8.1 15.7

## Safety and symbols key

CE

**Certification mark**  
Indicates conformity with health, safety, and environmental Protection standards for products sold within the European Economic Area (EEA)

RoHS

**Restriction of Hazardous Substances**  
The Restriction of Hazardous Substances Directive 2002/95/EC bans placement into the EU market of new electrical and electronic equipment containing more than the designated maximum allowable levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

emc

**Electromagnetic compatibility (EMC)**  
Measures the ability of equipment or systems to function satisfactorily in their electromagnetic environment without introducing intolerable electromagnetic disturbance to anything in that environment.

ENEC

**ENEC (European Norms Electrical Certification)**  
A certification scheme under CENELEC, accepted throughout Europe. The ENEC Mark for electrical products demonstrates compliance with European safety standards.

WEEE

**The European Waste Electrical and Electronic Equipment (WEEE)**  
The European Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC, as amended by 2003/108/EC, encourages the collection, treatment, recycling and recovery of waste electrical and electronic equipment.

REACH

**REACH Certificate**  
REACH Certificate of Compliance certifies that a product is compliant with the EU REACH regulation (EC) No 1907/2006, regarding the environmental and human health protection from risks posed by chemical substances.

## Standardized documents

ISTMT

ISTMT is the measurement of the LED source case temperature within the LED system (luminaire or lamp) while it is operating in its designed position and/or environment (In "Situation"). The measurement is performed at the temperature measurement point (Tc Point) indicated by the LED package manufacturer.

TM21

TM21 is the IESNA approved method for taking LM-80 data and making useful LED lifetime projections. The standards apply to lifetime projection of LED package, array or module alone. The results can then be used to interpolate the lifetime of an LED source within a system (luminaire or integrated lamp) using the in-situ LED source case temperature.

LM80 14000hrs

LM80 is the IESNA approved standard for measuring lumen maintenance of LED light sources. LM-80-08 apply to the LED package, array, or module alone, not a complete system, it is testing a component level. The standard does not provide guidance for extrapolation of testing results.

LM82

LM82 is the IESNA Approved Method for the Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature (LM-82-12) is a document which addresses the changes in photometric performance of SSL light engines and lamps with changes in temperature.

500hrs Salt Spray Test

Salt Spay Test is used to test the relative resistance to corrosion of protective coatings, when exposed to a salt mist (spray) climate at an elevated temperature. Test specimens are placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0ml/80cm²/hour, in a chamber temperature of +35C. This climate is maintained under constant steady state conditions.

IEC62722

IEC 62722 covers specific performance and environmental requirements for luminaires, incorporating electric light sources for operation from supply voltages up to 1000 V. Unless otherwise detailed, performance data covered under the scope of this standard are for the luminaires in a condition representative of new manufacture, with any specified initial aging procedures completed in a chamber temperature of +35C. This climate is maintained under constant steady state conditions.

## Ingress protection rating

### Rating Example

IP

Ingress protection

66

Against Solids

### The first number identifies the ingress protection rating against solids

- 1
- For solid bodies with dimensions > 50mm
- 2
- For solid bodies with dimensions > 12.5mm
- 3
- For solid bodies with dimensions > 2.5mm
- 4
- For solid bodies with dimensions > 1mm
- 5
- Dust protected
- 6
- Dust tight

### The second number identifies the ingress protection rating against liquids

- 1
- For vertically falling drops
- 2
- For vertically falling drops when enclosure is tilted up to 15° vertically
- 3
- For water sprayed at an angle up to 60° vertically
- 4
- For water splashed in any direction
- 5
- For water projected in jets against the enclosure from any direction
- 6
- For water projected in powerful jets against the enclosure from any direction
- 7
- For enclosure's temporary immersion at 1 meter in the water, under defined conditions
- 8
- For enclosure's continuous immersion in the water, under more severe conditions to those of number 7

## Impact protection rating

### Rating Example

IK

Impact protection

08

Mechanical Impact level

### The number identifies the impact protection rating

- 00
- No protection
- 01-05
- For tiny impact of < 1 Joule
- 06
- For impact of 1 Joule
- 07
- For impact of 2 Joule
- 08
- For impact of 5 Joule
- 09
- For impact of 10 Joule
- 10
- For impact of 20 Joule