

IP / NEMA Ratings

ENCLOSURE PROTECTION RATING SYSTEMS

The International Electrotechnical Commission (IEC) has established an enclosure grading system that produces an IP rating. Many Beghelli products are rated in accordance with the IEC standards and display the IP rating they have achieved. The IP rating is quickly becoming a critical element for emergency lighting fixtures. Since emergency lighting fixtures are typically mounted in close proximity to sprinkler heads (for example wall mounted battery units along a corridor), the potential of water related damage arising from activated or damaged sprinkler heads is an important consideration.

Provided below are IP / NEMA rating charts. These are designed to show the correlation of the IP and NEMA rating systems. **IMPORTANT:** NEMA claims that because IEC 60529-1 does not specify protection against corrosion, rust, oil or coolants, a direct correlation between the standards cannot be made. Because the NEMA rating meets or exceeds the corresponding IP rating, you can only translate NEMA to IP, not IP to NEMA. The following table outlines the IP system of enclosure ratings:

0	No Protection	0	No Protection
1	Protection against solid objects up to 50mm, (accidental touch by hands).	1	Protection against vertically falling drops of water, (condensation).
2	Protection against solid objects up to 12mm, (fingers).	2	Protection against direct sprays of water up to 15 degrees from vertical.
3	Protection against solid objects over 2.5mm, (tools & wires).	3	Protection against sprays up to 60 degrees from vertical.
4	Protected against solid objects over 1mm.	4	Protection against water sprayed from all directions, (limited ingress permitted).
5	Protection against dust, (limited ingress, no harmful deposit).	5	Protection against low pressure jets of water from all directions, (limited ingress permitted).
6	Protection against live or moving parts, including dust.	6	Protection against strong jets of water from all directions.
		7	Protection against the effects of immersion between 15cm and 1m.
		8	Protection against long periods of immersion under pressure.

NEMA Enclosures

COMPARISON OF SPECIAL APPLICATIONS OF ENCLOSURES FOR NON-HAZARDOUS LOCATIONS

Provides a degree of protection against the following environmental conditions	Types of Enclosures									
	1*	2*	4	4X	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X	X	X	X
Falling dirt	X	X	X	X	X	X	X	X	X	X
Falling liquid and light splashing	-	X	X	-	X	X	X	X	X	X
**Circulating dust, lint, fibers and flyings	-	-	X	X	-	X	X	X	X	X
**Settling airborne dust, lint, fibers & flyings	-	-	X	X	X	X	X	X	X	X
Hose down and splashing water	-	-	X	X	-	X	X	-	-	-
Oil and coolant seepage	-	-	-	-	-	-	-	X	X	X
Oil or coolant spraying and splashing	-	-	-	-	-	-	-	-	-	X
Corrosive agents	-	-	-	X	-	-	X	-	-	-
Occasional temporary submersion	-	-	-	-	-	X	X	-	-	-
Occasional prolonged submersion	-	-	-	-	-	-	X	-	-	-

Provides a degree of protection against the following environmental conditions	Types of Enclosures						
	2	3R+	3S	4	4X	6	6P
Incidental contact with the enclosed equipment	X	X	X	X	X	X	X
*Rain, snow and sleet	X	X	X	X	X	X	X
**Sleet	-	-	X	-	-	-	-
Windblown dust	X		X	X	X	X	X
Hose down	-	-	-	X	X	X	X
Corrosive agents	-	-	-	-	X	-	X
Occasional temporary submersion	-	-	-	-	-	X	X
Occasional prolonged submersion	-	-	-	-	-	-	X

NOTE: *External operating mechanisms are not required to be operable when the enclosure is ice covered
 **External operating mechanisms are operable when the enclosure is ice covered
 + These enclosures may be ventilated