



APPROXIMATE EFFECTIVE SEARCHLIGHT RANGES

The candlepower requirements for ranges shown below are derived from information in the **IES Lighting Handbook**, (published by the Illumination Engineering Society) for a large target on a clear night. As the IES handbook points out, searchlight ranges are difficult to predict and deteriorate rapidly when haze, smoke, fog, or smog is present.

Factors in addition to atmospheric conditions which greatly affect the range are size and color of target, reflectance of target, luminance of background, brightness contrast between target and background, distance between observer and searchlight and the visual acuity of the observer. These figures are approximate for naked eye observation with the observer in the vicinity of the searchlight.

RANGE to CANDLEPOWER REQUIREMENTS

CARLISLE & FINCH SEARCHLIGHT CANDLEPOWER CAPACITIES

Miles	Candlepower	Meters	Searchlight Size	Candlepower	Light Source
1/4	270,000	402	10 inch Halogen__12 Volt*	765,000	FDT
1/2	420,000	805	10 inch Halogen__24 Volt*	935,000	FDS
3/4	630,000	1207	10 inch Halogen__120 Volt*	950,000	BTM
1	1,000,000	1609	12 inch Halogen__(115VAC)	1.5 Million	BTR
1-1/4	1,600,000	2011	15 inch Halogen__(115VAC)	3.0 Million	BTR
1-1/2	2,500,000	2414	19 inch Halogen__(230VAC)	1.9 Million	FKD
2	5,500,000	3218	19 inch Halogen__(115VAC)	4.5 Million	BTR
2-1/2	11,000,000	4023	10 inch LED	2.5 Million	3.5° Optic
3	20,000,000	4827	12 inch LED	3.5 Million	3.5° Optic
4	35,000,000	6436	19 inch LED	10.5 Million	3.5° Optic
5	70,000,000	8045	200 Watt Xenon	15 Million	CFX350
6	150,000,000	9654	350 Watt Xenon	25 Million	CFX350
			500 Watt Xenon	45 Million	1000TRC
			1000 Watt Xenon	80 Million	1000TRC
			2500 Watt Xenon	177 Million	7500

* Can be used in larger searchlights.

The above charted lamp figures yield the highest searchlight beam for each size. When comparing other searchlight manufacturers published candlepower figures, it is important to know the method used to obtain such data. Different methods yield different results on the same searchlight. The **CARLISLE & FINCH** beam candlepower (bcp) figures are determined by the generally accepted procedure of measuring directly the light output:

Footcandles (Fc) at a known Distance (d) in feet between the searchlight and the photocell $bcp=(fc) \times (d)^2$.

The edge of the beam is defined as the locus of points whose intensity is 10% of the peak intensity. If desiring to compute light intensity in units of Lux, use formula above to compute Footcandles(Fc) then convert to Lux $(1 \text{ Lux} = .0929 \text{ Footcandles})$.