



THE CARLISLE & FINCH CO.

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APPROXIMATE EFFECTIVE RANGES OF SEARCHLIGHTS ON CLEAR NIGHTS.

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.

CANDLEPOWERS REQUIRED TO PRODUCE DESIRED RANGES.

Miles Range	Required Candlepower	Meters Range	Miles Range	Required Candlepower	Meters Range	Miles Range	Required Candlepower	Meters Range
1/4	270,000	402	1-1/4	1,600,000	2011	3	20,000,000	4827
1/2	420,000	805	1-1/2	2,500,000	2414	4	35,000,000	6436
3/4	630,000	1207	2	5,500,000	3218	5	70,000,000	8045
1	1,000,000	1609	2-1/2	11,000,000	4023	6	150,000,000	9654

These figures charted below are for lamps yielding highest beam for each searchlight size. When comparing candlepower figures published by other searchlight manufacturers, it is important to know the method used to obtain the 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 in Foot-candles (fc) at a known Distance (d) in feet between the searchlight and the photocell. Then $bcp=(fc) \times (d)^2$. 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 Lux = .0929 Footcandles).

SUMMARY OF CANDLEPOWER CAPACITIES OF CARLISLE & FINCH CO. SEARCHLIGHTS.

Searchlight size	Described in Bulletin	Candlepower	Light source
10 inch incandescent	A110	See voltage	See voltage
12 volt*	A110	765,000	FDT
24 volt*	A110	935,000	FDS
120 volt*	A110	950,000	BTM
12 inch incandescent (115VAC)	A110	1.5 Million	BTR
15 inch incandescent (115VAC)	A110	3.0 Million	BTR
19 inch incandescent (230VAC)	B111/SL123	1.8 Million	FKD
19 inch incandescent (115VAC)	B111/SL123	4.5 Million	BTR
200 Watt xenon	Y149	15 Million	CFX350
350 watt xenon	XE143	25 Million	CFX350
500 watt xenon	X126	45 Million	1000TRC
1000 watt xenon	XE127	80 Million	1000TRC
2500 watt xenon	XE127	150 Million	7500

* Can also be used in larger searchlights.

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