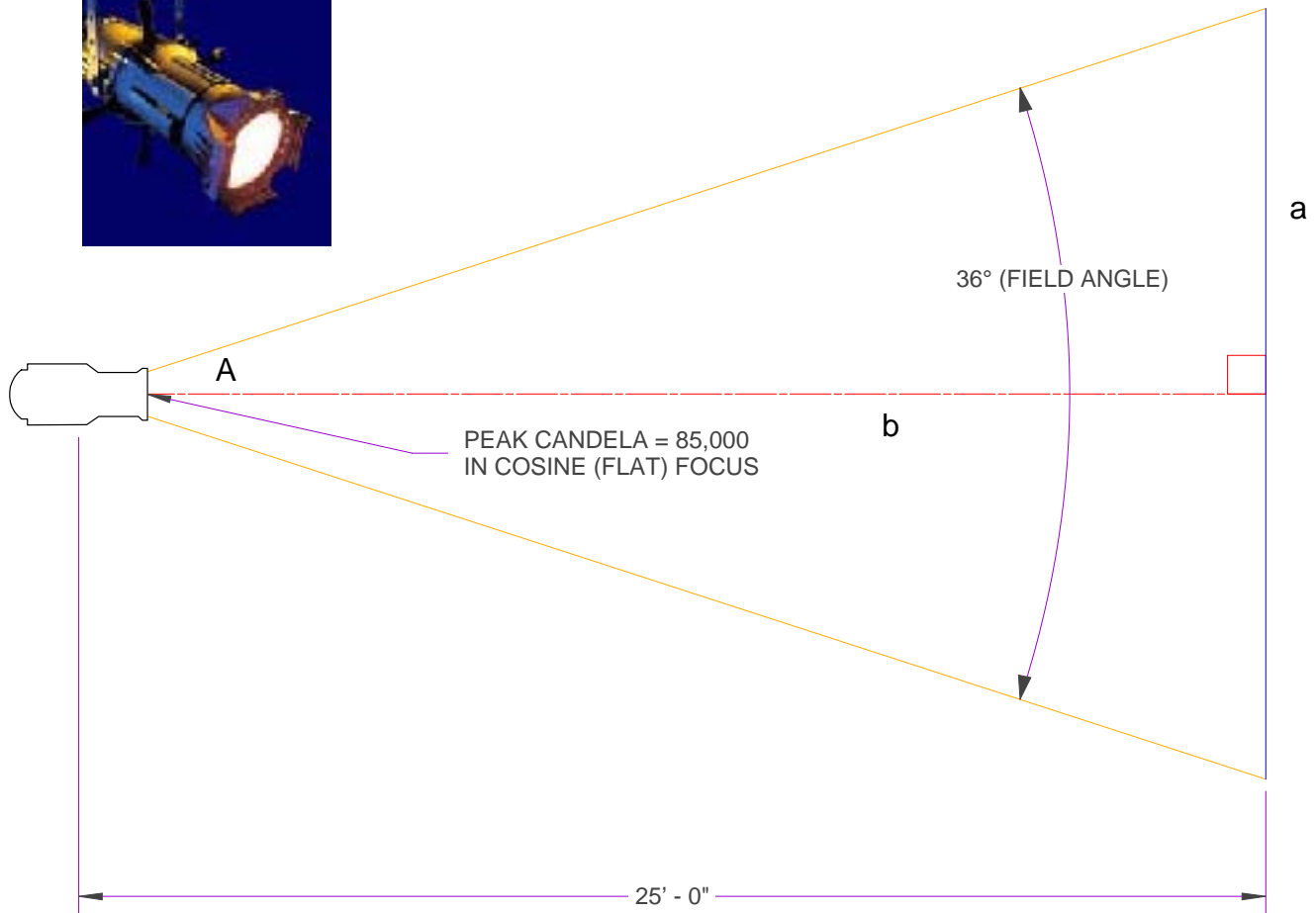


BASIC PHOTOMETRIC CALCULATION for an ETC 36° SOURCE 4 ERS



1. GIVEN THE PEAK CANDELA AND THE FIELD ANGLE, WE CAN CALCULATE THE SIZE AND BRIGHTNESS OF A POOL OF LIGHT AT ANY DESIRED DISTANCE.
2. USING BASIC TRIGONOMETRY, LINE a IS FOUND BY MULTIPLYING DISTANCE b TIMES THE TANGENT OF ANGLE A. ($a=b \tan A$)
3. IN THE CASE ABOVE, DISTANCE b IS 25'-0" AND ANGLE A (HALF THE FIELD ANGLE) IS 18°. THEREFORE, THE RADIUS OF THE POOL = $25(\tan 18) = 25(.3249) = 8.123' = 8' 1\text{-}1/2"$.
4. USING THE INVERSE SQUARE LAW, INTENSITY IS FOUND THROUGH DIVIDING THE PEAK CANDELA BY THE DISTANCE SQUARED.
5. FROM ABOVE, THE PEAK CANDELA OF 85,000 IS DIVIDED BY 25' SQUARED. THEREFORE, THE INTENSITY AT THE CENTER OF THE POOL 25' AWAY = $85,000/25/25 = 136$ FOOT CANDLES.
6. FOR THE RECORD, A COLORTRAN 30°/1000w ERS HAS AN INTENSITY OF 102 FOOT CANDLES OVER THE SAME DISTANCE WHEN IT IS IN COSINE (FLAT) FOCUS.