

rating of grounding resistors shall meet the "extended time rating" set forth in the Institute of Electrical and Electronics Engineers, Inc. Standard No. 32 (IEEE Std. 32-1972) which is hereby incorporated by reference and made a part hereof. The incorporated publication is available for examination at each MSHA Coal Mine Safety and Health district office, and may be obtained from the Institute of Electrical and Electronics Engineers, Inc., Publications Office, 10662 Los Vaqueros Circle, P.O. Box 3014 Los Alamitos, CA 90720-1264 Telephone: 800-272-6657 (toll free); <http://www.ieee.org>.

(3) Machine-mounted lighting fixtures shall be electrically grounded to the machine by a separate grounding conductor in compliance with §75.701-4.

(d) Direct current circuits in excess of a nominal voltage of 300 volts shall not be used to supply power to stationary light fixtures.

(e) Cables conducting power to stationary lighting fixtures from both alternating and direct current power sources, other than intrinsically safe devices, shall be considered trailing cables, and shall meet the requirements of Subpart G of this part. In addition, such cables shall be protected against overloads and short circuits by a suitable circuit breaker or other device approved by the Secretary. Circuit breakers or other device approved by the Secretary protecting trailing cables receiving power from resistance grounded circuits shall be equipped with a ground trip arrangement which shall be designed to deenergize the circuit at not more than 50% of the available fault current.

(f) Before shunts are removed from blasting caps, lighting fixtures and associated cables located in the same working place shall be deenergized. Furthermore, lighting fixtures shall be removed out of the line of blast and not less than 50 feet from the blasting operation unless otherwise protected against flying debris.

(g) Lighting fixtures shall be designed and installed to minimize discomfort glare.

[41 FR 43534, Oct. 1, 1976, as amended at 71 FR 16669, Apr. 3, 2006]

§75.1719-3 Methods of measurement; light measuring instruments.

(a) Compliance with §75.1719-1(d) shall be determined by MSHA by measuring luminous intensity (surface brightness).

(b) In measuring luminous intensity the following procedures shall be used:

(1) In areas of working places specified in §§75.1719.1(e)(1) through 75.1719-1(e)(3) luminous intensity measurements of the face, ribs, roof, floor, and exposed surfaces of mining equipment, shall be made with the machine idle and located in the approximate center of the working place with the cutting, loading, or drilling head toward the face and not more than 3 feet from the face.

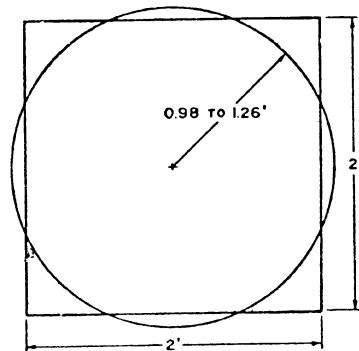
(2) In areas of working places specified in §75.1719-1(e)(4) luminous intensity measurements may be made at any time longwall or shortwall mining equipment is operated except that when measurements are made in the vicinity of shearers, plows, or continuous miners, the equipment shall be idle while measurements are being made.

(3) In areas of working places specified in §75.1719-1(e)(5) luminous intensity measurements of the face, ribs, roof, floor, and exposed surfaces of mining equipment, shall be made with the machine idle and located in the approximate center of the working place with the drilling head toward the face and a distance from the face of 5 feet, or the distance from the floor to the roof, whichever is applicable. When the machine is located in the center of the working place and the surfaces of the ribs to be illuminated are not within the perimeter of the area determined in accordance with §75.1719-1(e)(5), the machine shall be positioned the applicable distance from the face and each rib and luminous intensity measurements made for each rib, provided, however, that luminous intensity measurements may be made of the face, roof, floor, and exposed surfaces of mining equipment with the machine so located without locating the machine in the center of the working place.

(4) In areas of working places specified in §75.1719-1(e)(6), luminous intensity measurements of a coal surface

shall be made with the machine idle and located in the approximate center of the working place with the appropriate end toward the face and not less than 9 feet nor more than 10 feet from the face.

(5) The area of surfaces to be measured shall be divided into round or square fields having an area of not less than 3 nor more than 5 square feet as illustrated by the following figure:

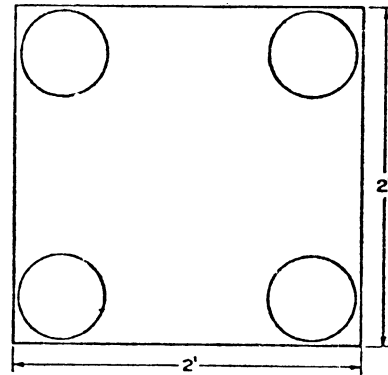


DIRECT MEASUREMENT OF LUMINOUS INTENSITY

(6) Measurements shall be taken with the photometer held approximately perpendicular to the surface being measured and a sufficient distance from the surface to allow the light sensing element in the instrument to receive reflected light from a field of not less than 3 nor more than 5 square feet. The luminous intensity of each such field shall be not less than 0.06 footlambert.

(7) In areas of working places where clearances are restricted to the extent that the photometer cannot be held a sufficient distance from the surface to allow the light sensing element in the instrument to receive reflected light from a field having an area of at least 3 square feet, luminous intensity shall be considered as the average of four uniformly spaced readings taken at the corners and within a square field having an area of approximately 4 square feet. In such instances, the area of each of the individual readings shall not exceed 100 square inches. The average of the four readings shall be not less than 0.06 footlambert. The method of meas-

urement is illustrated by the following figure:



DETERMINATION OF LUMINOUS INTENSITY BY AVERAGING METHOD

(8) Measurements shall not be made where shadows are cast by roof control posts, ventilation equipment, or other obstructions necessary to insure safe mining conditions.

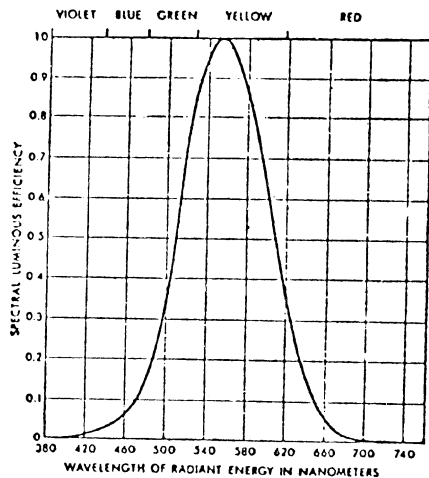
(9) Where machine-mounted light fixtures are used on equipment, except self advancing roof support systems, measurements shall not be made of surfaces on or within 1 foot of a self-propelled machine.

(c) For the purpose of making illumination measurements, an authorized representative of the Secretary may require the installation of temporary roof supports or the removal of the equipment to a similar working place in which permanent roof supports have been installed.

(d) Light measuring instruments shall be properly calibrated and maintained. Instruments shall be calibrated against standards traceable to the National Institute of Standards and Technology (Formerly the National Bureau of Standards) and color corrected to the Commission Internationale de l'Eclairage (CIE) Spectral Luminous Curve. The CIE Spectral Luminous Curve is as follows:

§ 75.1719-4

30 CFR Ch. I (7-1-06 Edition)



[41 FR 43534, Oct. 1, 1976, as amended at 71 FR 16669, Apr. 3, 2006]

§ 75.1719-4 Mining machines, cap lamps; requirements.

(a) Paint used on exterior surfaces of mining machines shall have a minimum reflectance of 30 percent, except cab interiors and other surfaces which might adversely affect visibility.

(b) When stationary light fixtures are used, red reflectors mounted in protective frames or reflecting tape shall be installed on each end of mining machines, except that continuous mining machines, loaders, and cutters need only have such reflectors or tape on the outby end. Reflectors or reflecting tape shall have an area of not less than 10 square inches.

(c) Each person who goes underground shall be required to wear an approved personal cap lamp or an equivalent portable light.

(d) Each person who goes underground shall be required to wear a hard hat or hard cap which shall have a minimum of 6 square inches of reflecting tape or equivalent paint or material on each side and back.

[41 FR 43534, Oct. 1, 1976]

§ 75.1720 Protective clothing; requirements.

On and after the effective date of this § 75.1720 each miner regularly employed in the active workings of an under-

ground coal mine shall be required to wear the following protective clothing and devices:

(a) Protective clothing or equipment and face-shields or goggles when welding, cutting, or working with molten metal or when other hazards to the eyes exist from flying particles.

(b) Suitable protective clothing to cover those parts of the body exposed to injury when handling corrosive or toxic substances or other materials which might cause injury to the skin.

(c) Protective gloves when handling materials or performing work which might cause injury to the hands; however, gloves shall not be worn where they would create a greater hazard by becoming entangled in the moving parts of equipment.

(d) A suitable hard hat or hard cap. If a hard hat or hard cap is painted, non-metallic based paint shall be used.

(e) Suitable protective footwear.

[36 FR 19497, Oct. 7, 1971, as amended at 39 FR 7175, Feb. 25, 1974]

§ 75.1720-1 Distinctively colored hard hats, or hard caps; identification for newly employed, inexperienced miners.

Hard hats or hard caps distinctively different in color from those worn by experienced miners shall be worn by each newly employed, inexperienced miner for at least one year from the date of his initial employment as a miner or until he has been qualified or certified as a miner by the State in which he is employed.

[39 FR 7175, Feb. 25, 1974]

§ 75.1721 Opening of new underground coal mines, or reopening and reactivating of abandoned or deactivated coal mines, notification by the operator; requirements.

(a) Each operator of a new underground coal mine, and a mine which has been abandoned or deactivated and is to be reopened or reactivated, shall prior to opening, reopening or reactivating the mine notify the Coal Mine Health and Safety District Manager for the district in which the mine is located of the approximate date of the proposed or actual opening of such mine. Thereafter, and as soon as practicable, the operator of such mine shall