A-63341

Westinghouse Technical Press Service
East Pittsburgh, Pa.

"DAYLIGHT" LIGHTING FOR FORD EXHIBIT AT CENTURY OF PROGRESS

The scientific search for artificial illumination equal in quality to natural daylight, has resulted in a new light source, the high-pressure mercury vapor lamp, which will in combination with incandescent electric lamps, provide illumination with all the elements of normal daylight. Westinghouse engineers will use this new development for the first time for the lighting of the Ford Motor Company's Exposition Building at a Century of Progress in Chicago.

New Vision

More than 500 of these new lamps will be used in the Ford Building. Each lamp consists of a long tubular bulb from which the light is intensely brilliant and greenish bluish in color. Its characteristics are quite different from the lamps that have used mercury vapor heretofore, as, due to the high temperature and pressure, the color

different from the lamps that have used mercury vapor heretofore, as, due to the high temperature and pressure, the color is much closer to that of the blue sky. In addition, these unique lamps produce more than twice as much light for the same power consumption than previously available similar types, each providing 50 lumens of light per watt, whereas the ordinary incandescent lamp produces not much more than 20 lumens per watt.

The new lamps are used in combination with modern Mazda lamps in order to obtain the color elements found in natural daylight. For that reason, combination reflectors have been developed. These are of two types, one a trough type unit containing two 400 watt, high-pressure mercury vapor lamps and three 500-watt incandescent lamps; the other a cylindrical unit containing one 400 watt mercury lamp and six 100-watt Mazda lamps. The units also required the development of special transformers.

The light produced by the new mercury lamps appears greenish-blue in color and lacks the red and yellow rays, while the light of Mazda lamps appears yellowish white because it contains an over-abundance of red and yellow rays and is relatively weak in green and blue rays. Combining the two types of lamps, therefore, in one reflector, provides a perfect unit as their light can be blended in the proper proportion to approach true white light which contains equal proportions of all colors.

Create Daylight

Thus visitors to the Ford Building will witness the production of parts for Ford V-8 cars; see all the many intricate processes of assembly; appreciate the accuracy and precision with which each part is fabricated and the attention given to the quality and workmanship of every piece of material because the illumination will represent science's most perfect approach to daylight.

With the eagerness characteristic of Mr. Henry Ford to take advantage of the latest scientific achievements in every field, Ford engineers were the first to adopt this new product of Westinghouse lighting research. The new form of illumination was a natural adjunct to the Ford Exposition which, because it will be so complete in every detail concerning the production of automobiles and likewise will provide so dramatic a presentation of one of the great industrial achievements of this, or any other century, will be a source of inspiration as to the future trends of science and engineering. This "inspirational building" thus will be lighted with a most usable color and will also have amply sufficient intensities for even the exact requirements of vision. It will have the "Lighting of Tomorrow" to light the road ahead.

To Aid Industry

It has been intimated by Ford engineers who investigated the new light source that they may plan on its further use in the vast assembly aisles where Ford cars are produced because under this quality of light workers can see more

accurately and be more certain of the quality of their finished product. It is not so apt to produce eyestrain and therefore, too, inspectors using the extremely accurate gauges which check the sizes of parts, will be given added vision to assist them in these important operations. According to Westinghouse lighting engineers, the new light sources will in large degree revolutionize industrial lighting, especially for the automotive industry.

States Samuel G. Hibben, Director of Applied Lighting, of the Westinghouse Lamp Company: "When we combine high efficiency, with a better color of light, and when we can, as in the Ford installation, provide an intensity of more than 25 foot candles on the work, which is five times greater than has heretofore been the average of industrial plants, then we have vastly improved the visual operations of workmen. We are demonstrating an achievement which should be a great incentive to the needed improvement in lighting of all the nation's industrial establishments."

A 50-Year Leap

Of importance, as an engineering achievement, is the fact that the new mercury lamps have more than doubled the best efficiency previously obtained from incandescent lamps. For 50 years engineers have striven to obtain more and more light from each watt of electricity consumed. In that time they had progressed from the point where they obtained three lumens per watt from the early carbon filament lamps to 20 lumens per watt from modern Mazda lamps. Now with 50 lumens

per watt this new mercury light source leaps ahead of all the illumination advances made in half a century.

The artistic proportions of the trough-shaped fixtures were designed by the Albert Kahn Company, architects. These fixtures, and the cylindrical units will be manufactured in the Cleveland Lighting headquarters of the Westinghouse Electric & Manufacturing Company while the lamps are produced in the Bloomfield Works of the Westinghouse Lamp Company.

600,000,000 Candlepower in Searchlights

Interior illumination which will demonstrate this new achievement of lighting engineers, will also be matched with outdoor lighting treatment of the Ford building.

Twenty-four Westinghouse searchlights, each 36 inches in diameter, will be mounted on the roof of the building. These will throw powerful rays into the heavens and serve also to outline the individual letters of the Ford insignia mounted outdoors. Each searchlight will be provided with 5000 watt lamps, producing approximately twenty-five million beam candlepower. The combined rays of the searchlights will produce the amazing total of six hundred million beam candlepower.

High visibility, indeed, for Chicago.

##

Note to editors: As an added matter of detail - 124 trough type units, each containing two 400-watt high pressure mercury vapor lamps and three 500-watt incandescent lamps have been ordered and 309 cylindrical high-bay type units, each containing one 400-watt high pressure mercury vapor lamps and six 100-watt incandescent lamps.

Captions:

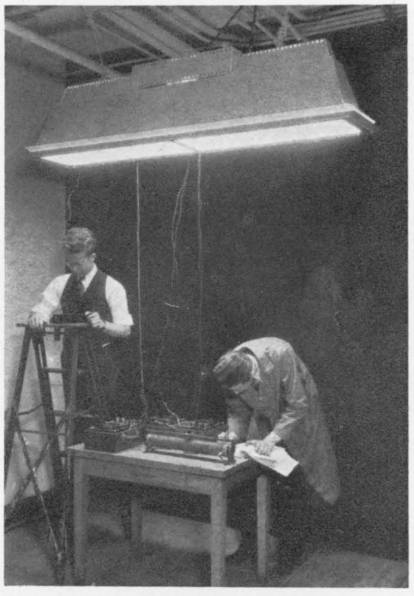
Photo WL-886

Radically new lighting fixture which gives illumination of sunlight quality, undergoing final test in the Photometric Laboratories of the Westinghouse Lamp Company, Bloomfield, N.J., before it is shipped to the Ford Building at a Century of Progress of 1934. New Westinghouse high pressure mercury lamp, burning in combination with standard tungsten filament lamp, produce a light which has a color value similar to sunlight. This is the first practical light source of this kind. Several hundred of these lighting units are to be used to illuminate the main exhibit hall of the new Ford Building at A Century of Progress because the Ford Motor Company desires that their cars appear in their true beauty as they do on the road.

Photo WL-887

Each of the new Westinghouse units, several hundred of which will be used to illuminate the main exhibit hall of the Ford Building at the Chicago Fair this year, is equipped with three 500-watt Mazda incandescent lamps and two of the new Westinghouse high pressure mercury lamps. Light from these units is similar to sunlight in quality and makes objects appear as they do outdoors.

WL886



WL887