

OFFICE MEMORANDUM



MICHIGAN

STATE HIGHWAY DEPARTMENT

July 23, 1965

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To: E. A. Finney, Director
Research Laboratory Division

From: M. H. Janson

Subject: Mercury Vapor "Super Lumen" Lights (Jewel Electric Products Inc.).
New Materials Project 63 NM-110. Research Report No. R-537.

Comparison testing of a Jewel "Mercury Vapor Super Lumen" lamp and a General Electric lamp has been completed. In accordance with a New Materials Committee recommendation of March 25, 1964, the lamps were installed on a trial basis in the I 96 rest area near Okemos Rd. on June 2, 1964. Illumination levels were checked until little change or deterioration of illumination was noted.

On March 24, 1964, a report was prepared under this project, discussing some of the characteristics of Jewel lamps, which may be summarized as follows:

1. Instant starting was not considered important for rest area installations.
2. Efficiency of the Jewel lamp was 30 lumens per watt, as compared to 50 lumens per watt for lamps presently used.
3. Color rendition of objects illuminated by the Jewel lamp was considered superior when compared to lamps presently used, but E. C. Eckert felt this was unimportant.
4. Lamp cost was not directly comparable since the Jewel lamp includes a 2-yr free replacement guarantee at \$31.00, while lamps currently used carry no guarantee and cost \$8.50.

In summary, the characteristics of the Jewel lamp offer no advantage for use in rest areas.

On July 17, 1964, a report was prepared under this project showing initial data on lamps in the trial installation:

1. Relative lumen output of a Jewel lamp was determined as 9,500 lumens and the relative lumen output of a General Electric H33-1 GL/C lamp was determined at 11,000 lumens.

July 23, 1965

2. Initial illumination values in foot-candles were reported, showing the General Electric light to be superior.

Since the June 2, 1964, installation of the two lamps, foot-candles of illumination were measured periodically until May 1965. Results of the measurements are shown in the attached table. The accompanying graph indicates that further measurements would not be expected to show significant changes.

It is significant to note that the 400-watt General Electric lamp consistently provided a greater level of illumination than the 750-watt Jewel lamp.

It should also be noted that in this particular test, the Jewel lamp's extra cost could not be justified.

We feel that the original purpose of the comparative test has been satisfied and the study can be terminated.

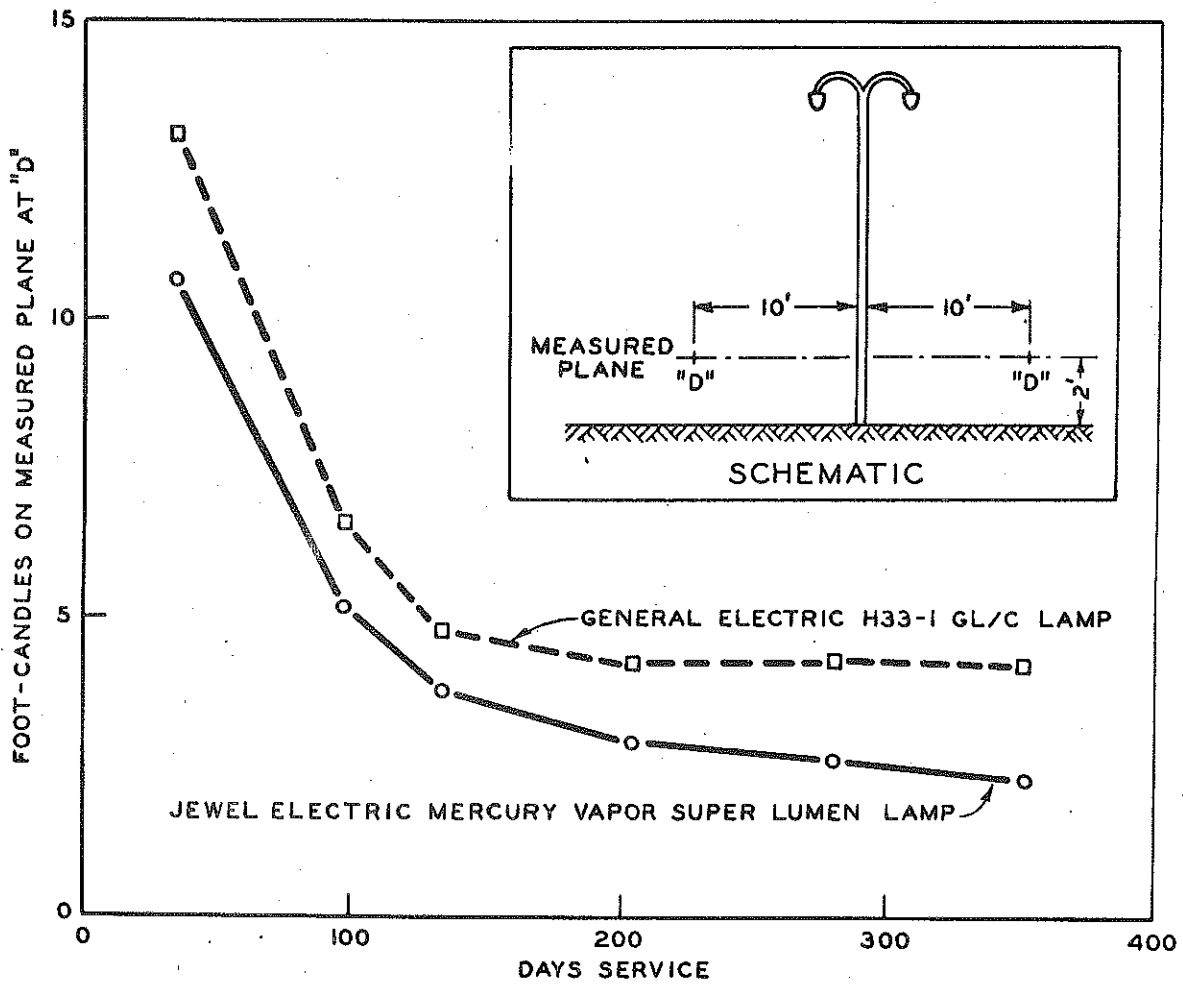
OFFICE OF TESTING AND RESEARCH

M. H. Janson

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MHJ:jk

Attachment



Test Date	Days Service	Illumination Values, ft-candles	
		Jewel Lamp	General Electric Lamp
6-2-64	0	Installed	Installed
7-6-64	34	10.6	13.1
9-9-64	99	5.2	6.6
10-15-64	135	3.8	4.8
12-23-64	204	3.0	4.3
3-10-65	281	2.6	4.3
5-10-65	352	2.3	4.2