



CREST

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Technology



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Report

Client:	Smarter Surfaces	Title:	Projector Paint Report
Attn:	Sanju Priyam		
Report ref:	03224	Order No:	
Report by:	Tasneem Bashir Research Assistant	Approved by :	Brendan Duffy
Date Recd:	22 May 2024	Issue date:	01/07/2024

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1. INTRODUCTION

The Client submitted 3 silver grey panels with a request to carry out light reflectivity testing and assessment of the coatings based on image quality using a form of light projection.

2. SAMPLES SUBMITTED

Table 1: Samples submitted and CREST references assigned.

CREST Reference	Sample Description	Dimension (cm x cm)
03224-01	Grey silver panel	21 x 29
03224-02	Grey silver panel	21 x 29
03224-03	Grey silver panel	21 x 29
03224-04	Projector Screen	150 x 150

3. LABORATORY EXAMINATION:

3.1 Visual Examination of samples:

The surface coating appeared uniform with no visual defects.

3.2 Testing Required:

The test panels and the projector screen were all mounted on solid boards. The boards were then positioned vertically and a test frame was placed touching the base of the sample surfaces. The test frame was built with a movable arm anchored to meet the test surface. A Newport photodetector (Model 884) was wired to a Newport Powermeter (Model 843-R) was placed 300 mm along the moveable arm. A light source was fixed approximately 300 mm from the test surfaces and used to project a white image onto the test surface. The image size was fixed at 35 mm x 35 mm on incident surface. The photodetector was moved through an arc using the moveable arm at increments of 10° and power readings were recorded for each surface.

4. RESULTS:

4.1 Visual Examination after testing:

The samples were visually examined and were of good appearance with no evidence of uneven coating application.

4.2 Results:

The reflected light power was measured using the Newport equipment and background corrected. The viewing angle was determined by measuring the angle at which the gain was at least half the maximum (i.e. at 90°). The gain was determined by comparing the reflectivity of the painted samples to that of the screen.

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Table 2 Reflectivity readings of projector samples in μW .

Sample	90°	80°	70°	60°	50°	40°	30°	20°	10°	0°
03224-01	0.88	1.04	1.41	1.88	2.72	3.67	4.42	4.59	4.12	3.48
03224-02	0.50	0.97	1.33	1.80	2.57	3.41	4.03	4.13	3.71	3.21
03224-03	0.58	1.13	1.63	2.01	2.84	3.66	4.18	4.22	3.82	3.32

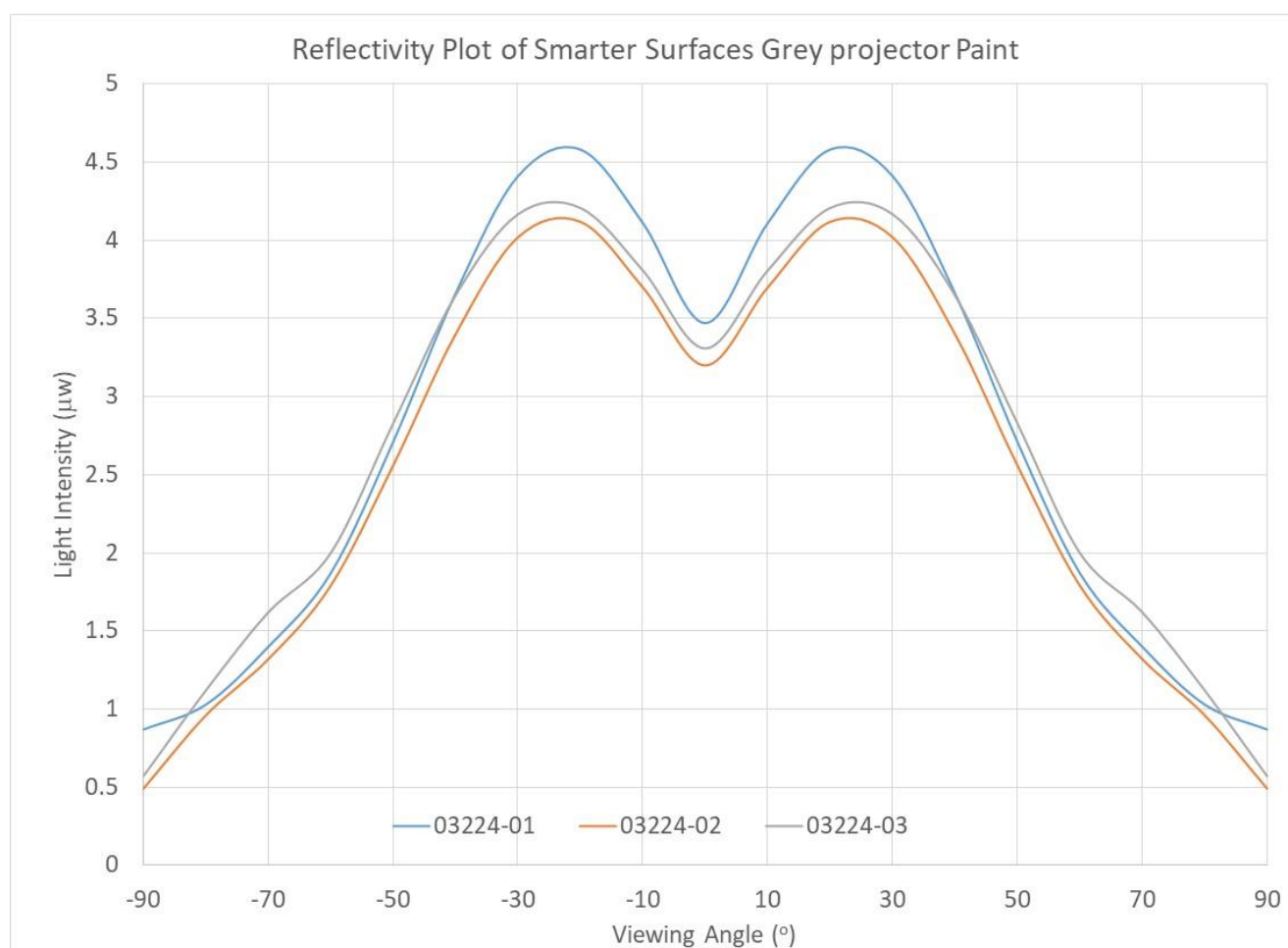


Table 3 Table of gain measurements of projector paint samples.

Sample	90°	80°	70°	60°	50°	40°	30°	20°	10°	0°
03224-01	1.89	1.81	1.56	1.57	1.87	1.90	2.03	1.74	1.46	1.50
03224-02	1.07	1.68	1.47	1.50	1.77	1.76	1.85	1.57	1.31	1.39
03224-03	1.24	1.96	1.80	1.68	1.95	1.89	1.92	1.60	1.35	1.43

The gain of the paint samples versus a standard project was found to be above 1 for all angles tested.

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5. **SUMMARY**

The projector paint gain of all samples was greater than one, which means that the paint is more reflective than the standard projector screen.

The sample with the greatest gain was sample 03224-01 with a screen gain of 2.03 at a viewing angle of 30°.

The field of view for all samples was found to be approximately 100°.

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