



## DCI Image Evaluation Summary

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Digital Cinema Initiatives, LLC, Member Representatives Committee

During December 2017, DCI conducted viewing sessions utilizing short clips (approximately 15 to 25 seconds) of existing theatrical content that were chosen based on their suitability for image comparison testing in a higher dynamic range projection environment. The image attributes that were tested are summarized in the table below.

Peak Luminance	Minimum Black Level	Maximum Contrast Ratio
48 nits	0.024 nits	2,000:1
100 nits	0.020 nits	5,000:1
100 nits	0.010 nits	10,000:1
100 nits	0.005 nits	20,000:1
100 nits	0.002 nits	50,000:1
100 nits	0.001 nits	100,000:1
100 nits	0.0005 nits	200,000:1

The clips were presented in a randomized order as A/B pairs. Each pair consisted of either:

- a) a standard dynamic range clip (*i.e.*, 48 nit peak, 0.024 nit black level, maximum contrast ratio 2,000:1) and a corresponding clip in one of the above higher dynamic range formats.  
OR
- b) two clips from the above higher dynamic range formats.

The viewing audience was comprised of creative and technical talent from each of the DCI member studios, industry experts, and non-expert viewers. The test was conducted as a double-blind test – the presenters and those running the equipment had no knowledge of the nature of each clip. Additionally, viewers were only told that they were evaluating images with different characteristics. No further specifics regarding characteristics were provided.

Based on analysis of the results, the data shows a clear correlation between higher contrast, peak luminance, and an improved viewing experience. With the recent availability of new image technologies, DCI has concluded that additional testing with peak luminance beyond 100 nits is needed to determine the image attributes necessary to justify the creation of new system specifications. DCI looks forward to the industry's participation in this effort.