LUX-TSI Ltd., Pencoed Technology Park,
Pencoed, Bridgend, CF35 5AQ, UK
Website: www.lux-tsi.com
E-mail: info@lux-tsi.com
Test Report Number: GNC-35618

4701

Report Number	GNC-35618
Customer	Encapsulite International Ltd
Contact	Jordan Waumsley
Product Type	LED Tube
Test Purpose	Goniometric (Type C) Intensity Scan - IES/LDT Files & Report - Scan Increments 15 degrees Azimuth by 2.5 degrees inclination
Quote / PO Reference	Q-LUX-302528 / PO (16928)
Works Order Number	WO-35618
Test Standards	LM-79-19; (BS) EN 13032-4:2015 + A1 2019; CIE S025:2015
Testing Conducted at	LUX-TSI Limited Unit 1B Pencoed Technology Park, Pencoed,Bridgend, CF35 5AQ
Tested by	Charlie Read
Date of Receipt of Test Item	20/05/2025
Date(s) of Test	02/06/2025
Analysed by	Gareth Jones
Number of products tested	1

Address: LUX-TSI Ltd.,
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CF35 5AQ, UK
Telephone: +44 (0) 1656 864618
Authorised by: G. Jones
Email: CustomerService@lux-tsi.com
Signed:

Date: 10/07/2025



24V RD TS V3 16

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Nomenclature

Lamp Orientation described below relates to the position in which a lamp is designed to operate for maximum performance and safety, these include:
BD - Base Down (bulb is vertically positioned with the metal base at the bottom, glass up)
BU - Base Up (bulb is vertically positioned with the metal base at the top, glass hanging down)

Test Conditions

Measurements were made with an ambient temperature of 25°C +/- 1°C. Measurements were taken only after sufficient time for thermal stabilisation has been allowed. Thermal stabilisation according to LM-79-19 was achieved before measurements are measured and reported.

Calibrations

The far field Type C Goniophotometer is calibrated using an intensity lamp calibrated by a NVLAP accredited calibration laboratory.

Test Equipment

UL LSI Custom Far-Field Type C Moving Mirror Goniophotometer measures intensity as a function of angle. On-axis spectral measurements taken using Gooch and Housego OL770 spectrometer.

Data Formats

IES (15 deg azimuth and 2.5 deg inclination) and LDT (15 deg C planes and 2.5 deg gamma angles)

Spectral Data file from which the calculation of chromaticity and CRI etc. have been performed and the derived results from the LightMtrX software are provided as a text file format.

All photometric data for LED products will be provided in ABSOLUTE photometric format and all non-LED data will be in relative photometric format with lamp lumens measured separately, where possible, for LOR estimation.

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Product Name	24V RD TS V3 16
Part/Serial Number	N/A
Type of Product	LED Tube
Lamp Base Type	Luminaire

Enter Driver Here

Test Time	11 mins
Operating Orientation	Horizontal
Test Orientation	Horizontal
Ambient Temperature	24.3°C
Manufacturer	Encapsulite International Ltd
Date of Manufacture	N/A
Thermal Management	Passive
Dimmable	No
Pre-Burning Time	0 hours
Stabilisation Time	101 minutes
Humidity	52% RH
Averaging Applied	NONE

Driver Details		
Manufacturer		N/A
Model		N/A
Part/Serial #		N/A
Driver Type		Internal Driver
Output	Voltage	N/A
	Current	N/A
	Power	N/A

Photometric Measurements	
Luminous Flux (lm)	1331 lm
Luminous Efficacy (lm/W)	67 lm/W

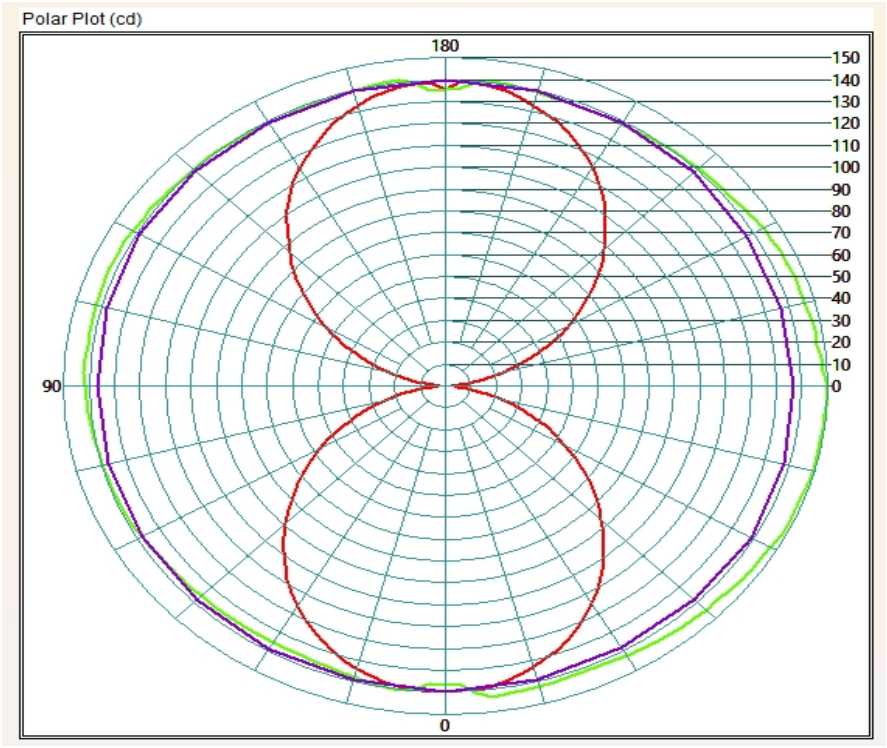
Electrical Measurements	
Frequency	DC
Voltage	24 V
Current	0.850 A
Power	20.4 W
Power Factor	N/A
Apparent Power	N/A

Dimension	**Sample**	**Luminous Opening**
Diameter/Width	30 mm	30 mm
Length	1030 mm	965 mm
Height/Depth	30 mm	30 mm

NOTE - these dimensions may not be the same as IES/LDT file due to product geometry for best use in lighting design software

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Goniophotometric Measurements		
Beam Angle	Horizontal	180º
	Vertical	180º
On-axis Intensity		140 cd
Peak Intensity		150 cd
Peak Direction	Horizontal	270º
	Vertical	88º



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Colorimetric Measurement Results

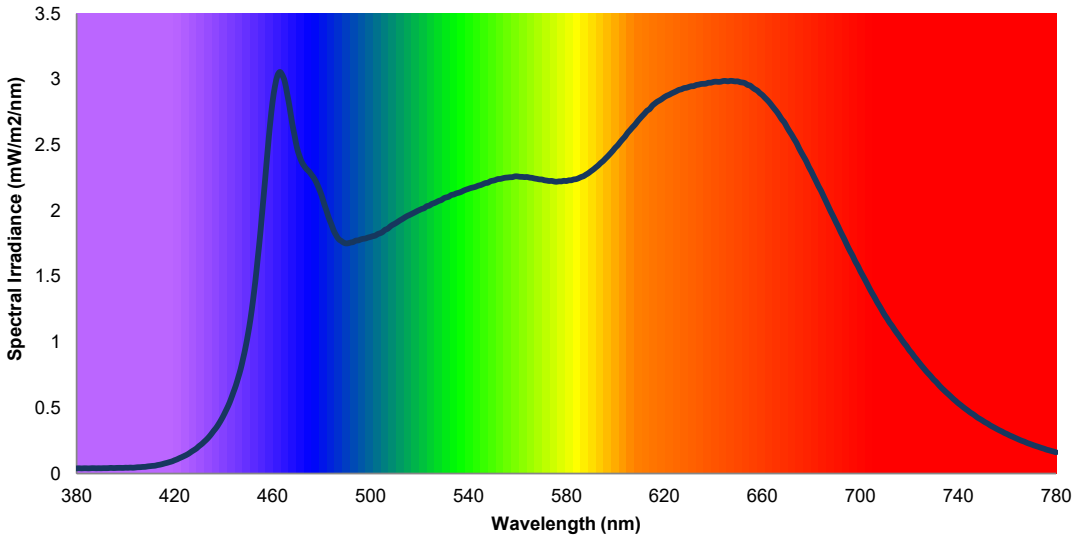
Obtained via On-axis Spectral Measurement

The following data was determined from an on-axis spectral measurement using a Gooch & Housego OLI770 spectrometer at a distance of 15.4m. Angle of mirror where spectrum is measured is 0 degrees. Results may differ if compared to spatially averaged colourimetric result (e.g. measured in an integrating sphere).

LM79 requires spatially averaged colourimetric results (i.e. from a sphere, or from a full gonio colourimetric scan). The colourimetric results in this report do not follow those requirements.

BS (EN) 13032 and CIE S025 do not state this requirement. Compliance with these standards is observed.

Spectral Irradiance versus Wavelength



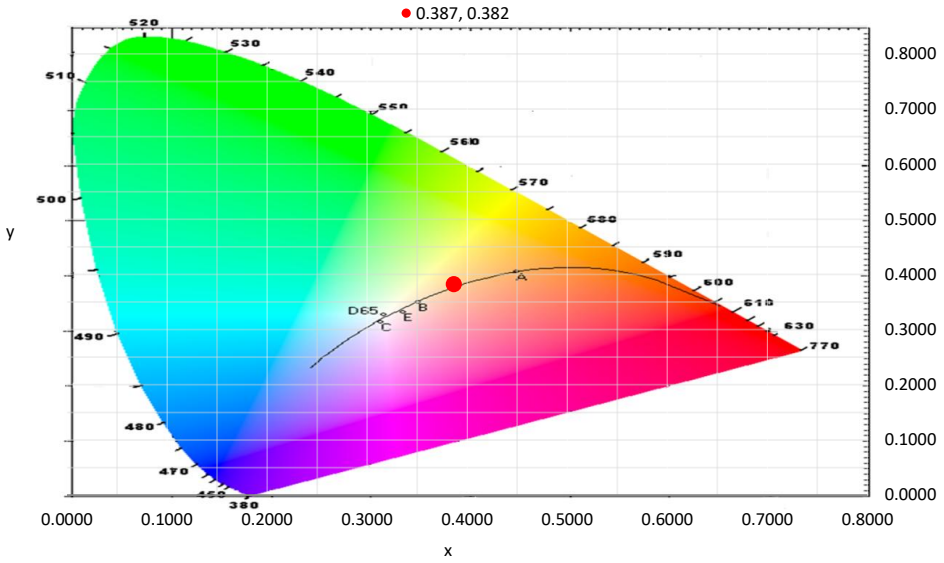
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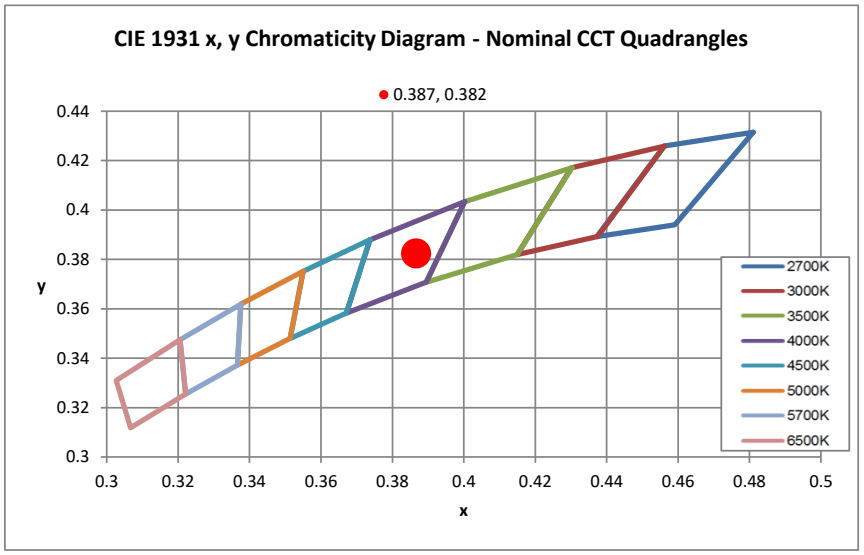
Colour Rendering Index Detail			
R1	92	R8	89
R2	92	R9	78
R3	95	R10	85
R4	90	R11	94
R5	92	R12	76
R6	91	R13	91
R7	89	R14	97

Colorimetric Details	
CCT	3878K
CRI (Ra)	91

Chromaticity Coordinates		
CIE 1931	x	0.3866
	y	0.3824
CIE 1960	u	0.2269
	v	0.3366
CIE 1976	u'	0.2269
	v'	0.5050
Duv		0.0009

CIE 1931 Colour Chart





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Spectral Power Distribution

λ (nm)	mW/m2/nm
380	3.93E-02
381	4.01E-02
382	3.90E-02
383	4.01E-02
384	4.00E-02
385	3.91E-02
386	4.06E-02
387	4.08E-02
388	3.98E-02
389	4.06E-02
390	3.99E-02
391	4.10E-02
392	4.07E-02
393	4.14E-02
394	4.30E-02
395	4.17E-02
396	4.23E-02
397	4.33E-02
398	4.31E-02
399	4.28E-02
400	4.44E-02
401	4.38E-02
402	4.52E-02
403	4.41E-02
404	4.59E-02
405	4.81E-02
406	4.85E-02
407	5.02E-02
408	5.09E-02
409	5.42E-02
410	5.62E-02
411	5.82E-02
412	5.96E-02
413	6.42E-02
414	6.74E-02
415	7.18E-02
416	7.73E-02
417	8.18E-02
418	8.74E-02
419	9.28E-02
420	1.01E-01
421	1.08E-01
422	1.17E-01
423	1.25E-01
424	1.34E-01
425	1.43E-01
426	1.54E-01
427	1.68E-01
428	1.79E-01
429	1.92E-01

λ (nm)	mW/m2/nm
430	2.09E-01
431	2.23E-01
432	2.40E-01
433	2.58E-01
434	2.77E-01
435	3.00E-01
436	3.25E-01
437	3.48E-01
438	3.76E-01
439	4.08E-01
440	4.42E-01
441	4.80E-01
442	5.19E-01
443	5.65E-01
444	6.17E-01
445	6.69E-01
446	7.31E-01
447	7.96E-01
448	8.76E-01
449	9.62E-01
450	1.06E+00
451	1.18E+00
452	1.31E+00
453	1.47E+00
454	1.64E+00
455	1.83E+00
456	2.03E+00
457	2.24E+00
458	2.46E+00
459	2.66E+00
460	2.83E+00
461	2.95E+00
462	3.03E+00
463	3.06E+00
464	3.03E+00
465	2.98E+00
466	2.89E+00
467	2.79E+00
468	2.67E+00
469	2.57E+00
470	2.48E+00
471	2.42E+00
472	2.37E+00
473	2.34E+00
474	2.32E+00
475	2.30E+00
476	2.27E+00
477	2.25E+00
478	2.21E+00
479	2.17E+00

λ (nm)	mW/m2/nm
480	2.12E+00
481	2.06E+00
482	2.00E+00
483	1.95E+00
484	1.90E+00
485	1.85E+00
486	1.81E+00
487	1.78E+00
488	1.77E+00
489	1.76E+00
490	1.75E+00
491	1.75E+00
492	1.76E+00
493	1.76E+00
494	1.77E+00
495	1.77E+00
496	1.78E+00
497	1.79E+00
498	1.79E+00
499	1.80E+00
500	1.80E+00
501	1.81E+00
502	1.81E+00
503	1.82E+00
504	1.83E+00
505	1.84E+00
506	1.86E+00
507	1.86E+00
508	1.88E+00
509	1.89E+00
510	1.90E+00
511	1.91E+00
512	1.93E+00
513	1.94E+00
514	1.95E+00
515	1.96E+00
516	1.97E+00
517	1.98E+00
518	1.99E+00
519	2.00E+00
520	2.01E+00
521	2.01E+00
522	2.02E+00
523	2.04E+00
524	2.04E+00
525	2.05E+00
526	2.06E+00
527	2.07E+00
528	2.08E+00
529	2.08E+00

λ (nm)	mW/m2/nm
530	2.10E+00
531	2.10E+00
532	2.11E+00
533	2.12E+00
534	2.12E+00
535	2.13E+00
536	2.14E+00
537	2.14E+00
538	2.15E+00
539	2.16E+00
540	2.17E+00
541	2.17E+00
542	2.18E+00
543	2.18E+00
544	2.19E+00
545	2.20E+00
546	2.20E+00
547	2.21E+00
548	2.21E+00
549	2.23E+00
550	2.23E+00
551	2.23E+00
552	2.24E+00
553	2.24E+00
554	2.25E+00
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569	2.24E+00
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571	2.23E+00
572	2.23E+00
573	2.23E+00
574	2.23E+00
575	2.22E+00
576	2.22E+00
577	2.22E+00
578	2.22E+00
579	2.23E+00
580	2.23E+00

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λ (nm)	mW/m2/nm	λ (nm)	mW/m2/nm	λ (nm)	mW/m2/nm	λ (nm)	mW/m2/nm
581	2.23E+00	631	2.95E+00	681	2.26E+00	731	6.98E-01
582	2.23E+00	632	2.95E+00	682	2.23E+00	732	6.76E-01
583	2.24E+00	633	2.96E+00	683	2.19E+00	733	6.56E-01
584	2.24E+00	634	2.96E+00	684	2.15E+00	734	6.38E-01
585	2.25E+00	635	2.97E+00	685	2.11E+00	735	6.20E-01
586	2.26E+00	636	2.97E+00	686	2.07E+00	736	6.03E-01
587	2.26E+00	637	2.97E+00	687	2.03E+00	737	5.86E-01
588	2.28E+00	638	2.97E+00	688	1.99E+00	738	5.68E-01
589	2.29E+00	639	2.97E+00	689	1.96E+00	739	5.52E-01
590	2.30E+00	640	2.98E+00	690	1.92E+00	740	5.36E-01
591	2.31E+00	641	2.98E+00	691	1.88E+00	741	5.22E-01
592	2.33E+00	642	2.98E+00	692	1.84E+00	742	5.07E-01
593	2.35E+00	643	2.98E+00	693	1.80E+00	743	4.92E-01
594	2.36E+00	644	2.99E+00	694	1.76E+00	744	4.79E-01
595	2.38E+00	645	2.99E+00	695	1.72E+00	745	4.64E-01
596	2.40E+00	646	2.99E+00	696	1.69E+00	746	4.53E-01
597	2.42E+00	647	2.99E+00	697	1.65E+00	747	4.39E-01
598	2.44E+00	648	2.99E+00	698	1.61E+00	748	4.25E-01
599	2.46E+00	649	2.98E+00	699	1.58E+00	749	4.14E-01
600	2.48E+00	650	2.99E+00	700	1.54E+00	750	4.02E-01
601	2.50E+00	651	2.98E+00	701	1.51E+00	751	3.90E-01
602	2.52E+00	652	2.98E+00	702	1.47E+00	752	3.80E-01
603	2.55E+00	653	2.97E+00	703	1.44E+00	753	3.68E-01
604	2.57E+00	654	2.96E+00	704	1.40E+00	754	3.58E-01
605	2.59E+00	655	2.95E+00	705	1.37E+00	755	3.47E-01
606	2.61E+00	656	2.94E+00	706	1.34E+00	756	3.37E-01
607	2.64E+00	657	2.93E+00	707	1.30E+00	757	3.27E-01
608	2.66E+00	658	2.91E+00	708	1.27E+00	758	3.19E-01
609	2.68E+00	659	2.90E+00	709	1.24E+00	759	3.08E-01
610	2.70E+00	660	2.88E+00	710	1.21E+00	760	3.00E-01
611	2.72E+00	661	2.86E+00	711	1.18E+00	761	2.90E-01
612	2.74E+00	662	2.84E+00	712	1.15E+00	762	2.82E-01
613	2.76E+00	663	2.82E+00	713	1.12E+00	763	2.74E-01
614	2.77E+00	664	2.80E+00	714	1.10E+00	764	2.65E-01
615	2.80E+00	665	2.78E+00	715	1.07E+00	765	2.57E-01
616	2.81E+00	666	2.75E+00	716	1.04E+00	766	2.49E-01
617	2.83E+00	667	2.72E+00	717	1.02E+00	767	2.43E-01
618	2.84E+00	668	2.70E+00	718	9.92E-01	768	2.34E-01
619	2.85E+00	669	2.67E+00	719	9.68E-01	769	2.27E-01
620	2.86E+00	670	2.64E+00	720	9.40E-01	770	2.21E-01
621	2.88E+00	671	2.61E+00	721	9.18E-01	771	2.14E-01
622	2.88E+00	672	2.58E+00	722	8.92E-01	772	2.08E-01
623	2.89E+00	673	2.55E+00	723	8.69E-01	773	2.02E-01
624	2.90E+00	674	2.52E+00	724	8.45E-01	774	1.95E-01
625	2.91E+00	675	2.48E+00	725	8.22E-01	775	1.90E-01
626	2.92E+00	676	2.44E+00	726	8.00E-01	776	1.82E-01
627	2.93E+00	677	2.41E+00	727	7.78E-01	777	1.78E-01
628	2.93E+00	678	2.38E+00	728	7.58E-01	778	1.72E-01
629	2.94E+00	679	2.33E+00	729	7.37E-01	779	1.67E-01
630	2.94E+00	680	2.30E+00	730	7.15E-01	780	1.61E-01

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